INL/RPT-24-77055
Revision 0

Idaho National Laboratory Site Environmental Surveillance Program Report: Fourth Quarter 2023

September 2024

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EXECUTIVE SUMMARY

This report for the fourth quarter of 2023 contains results from the Idaho National Laboratory (INL) Site environmental surveillance program's monitoring of the U.S. Department of Energy's INL Site's onsite, boundary and offsite location environment, October 1 through December 31, 2023. All sample types (media) and the sampling schedule followed during 2023 are listed in Appendix A. This report contains results for the following sample types:

- Air, including particulate air filters, charcoal cartridges, and atmospheric moisture
- Precipitation
- Drinking/surface water
- Milk
- Waterfowl
- OSLDs.

Table ES-1. Summary of results for the fourth quarter of 2023.

Media	Sample Type	Analysis	Results
Air	Particulate Filters	Gross alpha, gross beta	There were no statistically significant differences among groups for the quarter or any month during the quarter for gross alpha concentrations, as well as gross beta concentrations for the months of October and December. Statistically significant differences were observed for gross beta concentrations for the quarter and the month of November. No result exceeded the Derived Concentration Standard (DCS). No gross beta result exceeded the 99%/95% upper tolerance limit (UTL), however, the gross alpha concentration for the sample collected at Radioactive Waste Management Complex (RWMC) on October 10, 2023, did exceed the UTL.
	Quarterly Composite	Gamma-emitting radionuclides, strontium-90, actinides (americium and plutonium)	Americium-241 was detected in air filter composite samples collected at the Advanced Test Reactor (ATR) Complex, RWMC, RWMC South and RWMC (QA). Plutonium-239/240 was detected in composite samples collected at all three RWMC locations. The composite collected at RWMC resulted in Plutonium-238 being detected, but not in the duplicate sample (RWMC [QA]). All detected results were below the DCS values. No Cesium-137 (^{137}Cs) or other human-made gamma-emitting radionuclides were found in quarterly air filter composites. Strontium-90 (^{90}Sr), Uranium-233/234 and U-238 were not detected in any composite.
	Charcoal Cartridge	Iodine-131	Iodine-131 (^{131}I) was not detected in any of the batches of charcoal cartridges counted during the quarter.
Atmospheric Moisture	Liquid	Tritium	One result $(1.2 \pm 0.2) \times 10^{-12}$ uCi/mL$_{air}$ from Remote-Handled Low-Level Waste showed a tritium concentration greater than the 3s uncertainty. The sample result did not exceed the UTL or DCS for tritium in air.
Precipitation	Liquid	Tritium	A total of 13 samples were collected during the fourth quarter. None of the tritium results were greater than the 3s uncertainty.

Table ES-1. continued.

Media	Sample Type	Analysis	Results
Drinking/Surface Water	Liquid	Gross alpha, gross beta, tritium	Gross alpha was detected in two of seven drinking water samples and none of the four surface water samples. Gross beta was detected in all seven drinking water samples and in all four surface water samples. All concentrations were generally similar to previous results. Tritium was not detected in any drinking water samples or surface water samples.
Milk	Liquid	Iodine-131, other gamma-emitting radionuclides, strontium-90, tritium	Forty-one milk samples were collected at seven locations (including the offsite control sample from Colorado and two duplicates). No ^{131}I, ^{137}Cs , ^{90}Sr, or tritium was detected in any of the milk samples analyzed.
Waterfowl	Tissue	Gamma-emitting radionuclides, strontium-90, actinides (americium and plutonium)	Cesium-137, cobalt-60, ^{90}Sr, and zinc-65 were detected in sub-samples of a duck at levels suggesting that they were ingested from the ATR Complex effluent ponds. Cesium-137 was detected in a control sample from South Fork Snake River, Idaho. The maximum potential dose from eating the edible tissue of a duck was estimated to be 0.026 mrem/year.
Environmental Dosimeters	External radiation	Gamma-emitting and neutron radioactivity	Measurements of environmental radiation made using optically stimulated luminescent dosimeters (OSLDs) were primarily below the background level UTL except for select locations at Materials and Fuels Complex (listed as ANL O-23 and ANL O-26), Idaho Nuclear Technology and Engineering Center (listed as ICPP O-15), Idaho Falls (listed as IF-603W O-4), and the ATR Complex (listed as TRA O-10 and TRA O-11). Measurements that exceeded the UTL are within historical values and/or likely due to operations in those areas. Neutron dose monitoring performed at INL buildings and facilities were reported to be below the minimum measurable quantity of 10 mrem.

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FIGURES

TABLES

ACRONYMS

ATR	Advanced Test Reactor
CFA	Central Facilities Area
DCS	Derived Concentration Standard
DOE	U.S. Department of Energy
DOECAP-AP	DOE Consolidated Audit Program – Accreditation Program
EBR-I	Experimental Breeder Reactor I
EFS	Experimental Field Station
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
GEL	GEL Laboratories, LLC
HWY	Highway
ICP	Idaho Cleanup Project
ICPP	Idaho Chemical Processing Plant
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center (formerly ICPP)
MAPEP	Mixed Analyte Performance Evaluation Program
MDC	minimum detectable concentration
MFC	Materials and Fuels Complex
NRF	Naval Reactors Facility
NRTS	National Reactor Testing Station
OSLD	optically stimulated luminescent dosimeter
PE	performance evaluation
PT	performance testing
QA	quality assurance
RHLLW	Remote-Handled Low-Level Waste
RWMC	Radioactive Waste Management Complex
SMC	Specific Manufacturing Capability
TRA	Test Reactor Area
UTL	upper tolerance limit

UNITS

Bq	becquerel
Ci	curie
g	gram
L	liter
µCi	microcurie
ml	milliliter
mrem	millirem
mR	milliroentgen
pCi	picocurie

1. INL Contractor Program Description

Operations at the Idaho National Laboratory (INL) Site are conducted under requirements imposed by the U.S. Department of Energy (DOE) under authority of the Atomic Energy Act and the U.S. Environmental Protection Agency (EPA) under several acts (e.g., the Clean Air Act and Safe Drinking Water Act). The requirements imposed by DOE are specified in DOE Orders. These requirements include those to monitor the effects of DOE activities both inside and outside the boundaries of DOE facilities (DOE 2011, DOE 2015).

During calendar year 2023, environmental surveillance within the INL Site boundaries was primarily the responsibility of the INL and Idaho Cleanup Project (ICP) contractors. The INL contractor also provides surveillance off the INL Site.

This report contains surveillance monitoring results from the INL contractor for samples collected during the fourth quarter of 2023 (October 1 – December 31, 2023).

The INL environmental surveillance program is designed to satisfy the following objectives:

- verify compliance with applicable environmental laws, regulations, and DOE Orders
- characterize and define trends in the physical, chemical, and biological condition of environmental media on and around the INL Site
- assess the potential radiation dose to members of the public from INL Site effluents
- present laboratory data which has been reviewed using an EPA quality assurance process.

The goal of the surveillance program is to monitor different media at a number of potential exposure points within the various exposure pathways, including air, water, agricultural products, wildlife, and soil that could possibly contribute to the radiation dose received by the public.

Environmental samples collected include:

- air at 37 low-volume air samplers (four of which are used as replicate samplers) at 33 locations on and around the INL Site
- atmospheric moisture at two INL Site locations and at four locations off the INL Site
- precipitation collected at one INL Site location and three locations off the INL Site
- drinking water collected from eight locations off the INL Site
- surface water collected from three springs located downgradient of the INL Site and from five locations along the Big Lost River, when it is flowing, on the INL Site
- agricultural products, including milk at six dairies around the INL Site, potatoes from at least eight regional producers, alfalfa from three locations off the INL Site, grain (wheat and barley) from approximately nine regional producers, and lettuce from approximately seven home-owned and portable gardens on and around the INL Site
- soil from 30 locations on and around the INL Site once every five years
- environmental dosimeters from 191 (includes duplicates) locations semi-annually
- various numbers of wildlife including bats, big game (pronghorn, mule deer, and elk) and waterfowl sampled from the INL Site.

Table A-1 in Appendix A lists samples, sampling locations, and collection frequency for the INL contractor.

Two laboratories were used to perform analyses on routine environmental samples collected during the quarter identified in this report. The INL Environmental Services In Situ Gamma Laboratory was used to scan charcoal cartridges for gamma-emitting radionuclides. GEL Laboratories performed routine gross alpha, gross beta, tritium, and gamma spectrometry analyses. Analyses requiring radiochemistry including strontium-90 (^{90}Sr), plutonium-238 (^{238}Pu), plutonium-239/240 ($^{239/240}$Pu), uranium-233/234 ($^{233/234}$U), uranium-235 (^{235}U), uranium-238 (^{238}U) and ^{241}Am were also performed by GEL Laboratories (GEL).

In the event of non-routine occurrences, such as suspected releases of radioactive material, the INL contractor may increase the frequency of sampling and/or the number of sampling locations based on the nature of the release and wind distribution patterns. Any data found to be outside historical norms is thoroughly investigated to determine if an INL Site origin is likely. Investigation may include re-sampling and/or re-analysis of prior samples.

In the event of any suspected worldwide nuclear incidents, like the 1986 Chernobyl accident or the 2011 Fukushima accident, the EPA may request additional sampling be performed through RadNet. RadNet is a nationwide environmental radiation monitoring system that monitors the nation's air, precipitation, and drinking water for radiation. The INL contractor currently operates a high-volume air sampler and collects precipitation and drinking water in Idaho Falls for this national program and routinely sends samples to EPA's Eastern Environmental Radiation Facility for analysis. The RadNet data collected at Idaho Falls are not reported by the INL contractor but are available through the EPA RadNet website (https://www.epa.gov/radnet).

Once samples have been collected and analyzed, the INL contractor has the responsibility for quality control of the data, entry into databases, and reporting in quarterly reports. The quarterly reports are then consolidated into the INL Site Environmental Report for each calendar year. The annual report also includes data collected by other INL Site contractors.

The results reported in the quarterly and annual reports are assessed in terms of data quality and statistical significance with respect to laboratory analytical uncertainties, sample locations, reported INL Site releases, meteorological data, and worldwide events that might conceivably affect the INL Site environment. First, field collection and laboratory information are reviewed to determine identifiable errors that would invalidate or limit use of the data. Examples of such limitations include insufficient sample volume, torn filters, evidence of laboratory cross-contamination or quality control issues. Data that pass initial screening are further evaluated using statistical methods. Statistical tools are necessary for data evaluation particularly since environmental measurements typically involve the determination of minute concentrations, which are difficult to detect and even more difficult to distinguish from other measurements.

Results are presented in this report with an analytical uncertainty term, s, where 's' is the estimated sample standard deviation (σ), assuming a Gaussian or normal distribution. All results are reported in this document, even those that do not necessarily represent detections. The term' detected,' as used for the discussion of results in this report, does not imply any degree of risk to the public or environment, but rather indicates that the radionuclide was measured at a concentration sufficient for the analytical instrument to record a value that is statistically different from background. Laboratory measurements involve the analysis of a target sample and the analysis of a prepared laboratory blank (i.e., a sample which is identical to the sample collected in the environment, except that the radionuclide of interest is absent). In order to conclude that a radionuclide has been detected, it is essential to consider two

fundamental aspects of the problem of detection: (1) the instrument signal for the sample must be greater than that observed for the blank before the decision can be made that the radionuclide has been detected; and (2) an estimate must be made of the minimum radionuclide concentration that will yield a sufficiently large observed signal before the correct decision can be made for detection or non-detection. Each laboratory currently defines a detection of radioactivity in an individual sample if the result exceeds a detection level calculated by the laboratory after the analysis of a background sample, based on calculations derived by Currie (1984). The minimum detectable concentration (MDC) is defined as the concentration at which there is a 95% confidence that an analyte signal will be distinguishable from an analyte-free sample.

In addition, the INL contractor uses a three standard deviation criterion to minimize the chance that a potentially false positive result is included in the data set. Statistically, the probability that a result can exceed the absolute value of its total uncertainty at three standard deviations by chance alone is less than 1%. A result that is greater than three times the total uncertainty of the measurement represents a statistically positive detection with over 99% confidence (DOE 2022). The INL contractor reports measured radionuclide concentrations greater than or equal to their respective 3s uncertainties as being detected with confidence.

Concentrations between 2s and 3s are reported as questionably detected. That is, the radionuclide may be present in the sample; however, the probability that a result can exceed the absolute value of its total uncertainty at two standard deviations by chance alone may be as high as 5%. Measurements made between 2s and 3s are examined further to determine if they are a part of a pattern (temporal or spatial) that might warrant further investigation or recounting. For example, if a radionuclide is routinely detected at > 3s at a specific location, a sample result between 2s and 3s might be considered detected.

If a result is less than or equal to 2s there is even less statistical confidence that the radionuclide is present in the sample. Analytical results in this report are presented as the result value ± one standard deviation (1s) for reporting consistency with the annual report. To obtain the 2s or 3s values simply multiply the uncertainty term by 2 or 3.

Data are also compared to historical measurements using the upper tolerance limit (UTL). The UTL is a value such that 99% of the population (all valid measurements made between 2011-2020) is less than the UTL with 95% confidence (EPA 2015). With a 99%/95% UTL it is expected that approximately 1% of the measurements will exceed the UTL if the concentration of a radionuclide is within the normal range. This means that if a concentration exceeds the UTL it does not necessarily indicate that the sampling location is outside of the normal range. Rather, it indicates that the measurement should be closely examined to determine if it is unusually high.

For more information concerning the INL environmental surveillance program, please email George.KrauszerII@inl.gov, or visit https://inl.gov/environmental-monitoring/.

2. INL Site

The INL Site is a nuclear energy and homeland security research and environmental management facility. It is owned and administered by the DOE, Idaho Operations Office and occupies about 890 mi^2 (2,300 km^2) of the upper Snake River Plain in Southeastern Idaho (Figure 1). The history of the INL Site began during World War II when the U.S. Naval Ordnance Station was located in Pocatello, Idaho. This station, one of two such installations in the U.S., retooled large guns from U.S. Navy warships. The retooled guns were tested on the nearby, uninhabited plain, known as the Naval Proving Ground. In the years following the war, as the nation worked to develop nuclear power, the Atomic Energy Commission, predecessor to the DOE, became interested in the Naval Proving Ground and made plans for a facility to build, test, and perfect nuclear power reactors.

The Naval Proving Ground became the National Reactor Testing Station (NRTS) in 1949, under the Atomic Energy Commission. By the end of 1951, a reactor at the NRTS became the first to produce useful amounts of electricity. Over time the site has operated 52 various types of reactors, associated research centers, and waste handling areas. The NRTS was renamed the Idaho National Engineering Laboratory in 1974, and the Idaho National Engineering and Environmental Laboratory (INEEL) in January 1997. With renewed interest in nuclear power the DOE announced in 2003 that Argonne National Laboratory and the INEEL would be the lead laboratories for development of the next generation of power reactors. On February 1, 2005, the INEEL and Argonne National Laboratory-West became the INL. The INL is committed to providing international nuclear leadership for the 21st Century, developing and demonstrating compelling national security technologies, and delivering excellence in science and technology as one of the DOE's multi-program national laboratories. Battelle Energy Alliance, LLC, is responsible for the management and operations of the INL.

The ICP is a separately managed effort. The ICP is charged with safely and cost-effectively completing the majority of cleanup work from past laboratory missions in an ongoing process. The Idaho Environmental Coalition, LLC, is responsible for the ICP.

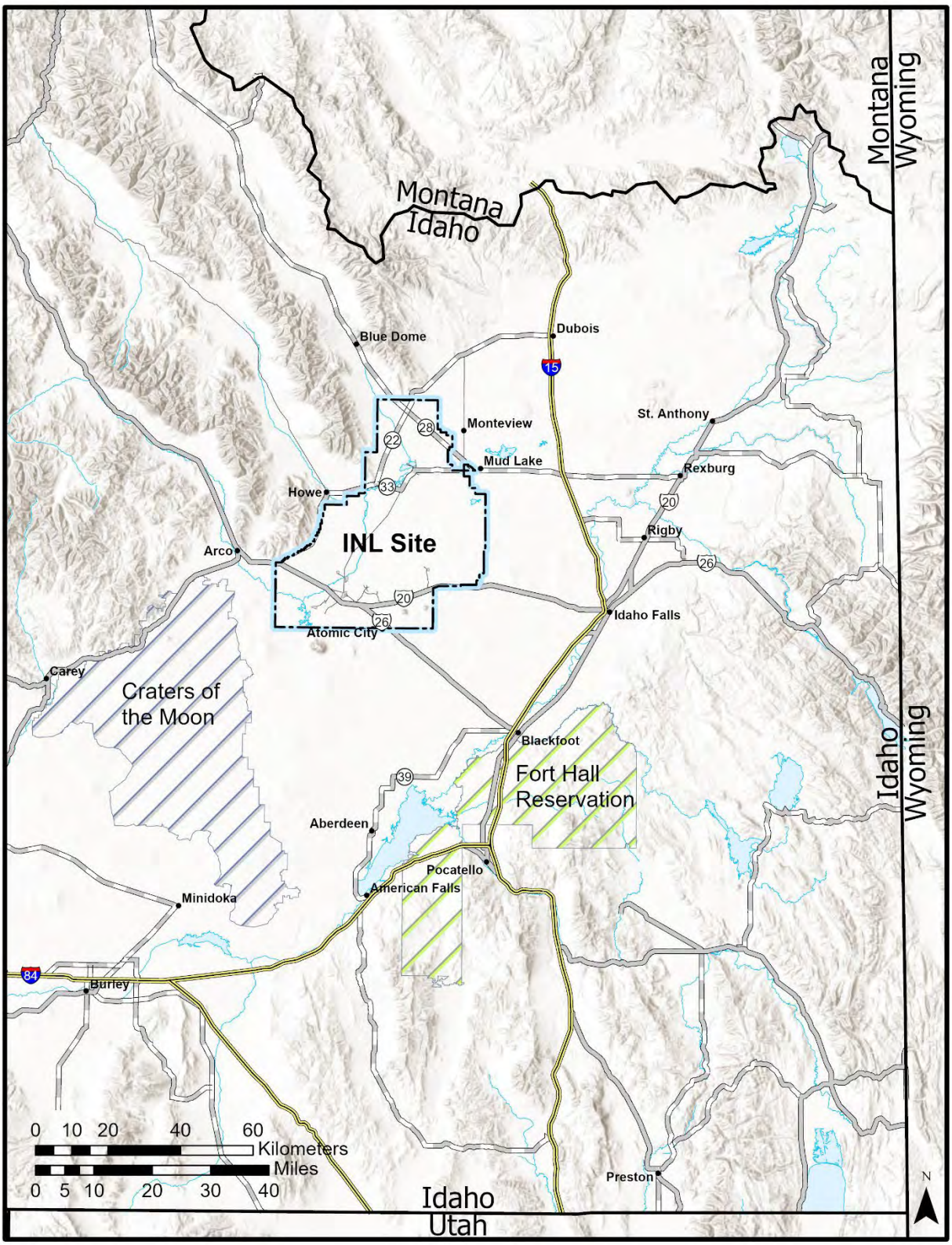

Figure 1. Location of the INL Site.

3. Air Sampling

The primary pathway by which radionuclides can move off the INL Site is through the air and for this reason the air pathway is the primary focus of monitoring on and around the INL Site. Samples for particulates and iodine-131 (^{131}I) gas in air were collected weekly for the duration of the quarter at 33 locations using low-volume air samplers. Moisture in the atmosphere was sampled at six locations around the INL Site and analyzed for tritium. Air sampling activities and results for the fourth quarter of 2023 are discussed below. A summary of approximate MDCs for radiological analyses and DOE Derived Concentration Standard (DCS) (DOE 2022) values is provided in Appendix B.

3.1 Low-volume Air Sampling

Radioactivity associated with airborne particulates was monitored continuously by 37 low-volume air samplers (four of which are used as replicate samplers) at 33 locations during the fourth quarter of 2023 (Figure 2). Twenty-one of these samplers are located onsite, seven are situated off the INL Site near the boundary, and nine have been placed at locations off the INL Site. Samplers are divided into onsite, boundary, and offsite groups to determine if there is a gradient of radionuclide concentrations, increasing towards the INL Site. Each replicate sampler is relocated every other year to a new location. During the fourth quarter 2023, replicate samplers were located at Dubois (offsite location), Idaho Nuclear Technology and Engineering Center (INTEC) – west side (onsite location), Radioactive Waste Management Complex (RWMC) (onsite location), and Van Buren (onsite location). Particulates in air were collected on membrane particulate filters (1.2 µm pore size). Gases passing through the filter were collected with an activated charcoal cartridge.

Filters and charcoal cartridges were changed weekly at each station during the quarter. Each particulate filter was analyzed for gross alpha and gross beta radioactivity using thin-window gas flow proportional counting systems after waiting about four days for shorter-lived naturally occurring daughter products of radon and thorium to decay.

The weekly particulate filters collected during the quarter for each location were composited and analyzed for gamma-emitting radionuclides. Composites were also analyzed by location for ^{90}Sr, ^{238}Pu, $^{239/240}$Pu, $^{233/234}$U, ^{238}U, and ^{241}Am.

Charcoal cartridges are analyzed for gamma-emitting radionuclides, specifically for ^{131}I. The INL Environmental Services In Situ Gamma Laboratory individually scans the cartridges. If the scan of an individual cartridge results in a positive detection, the cartridge is shipped to GEL for analysis. Iodine-131 is of particular interest because it is produced in relatively large quantities by nuclear fission, is readily accumulated in human and animal thyroids, and has a half-life of eight days. This means that any elevated level of ^{131}I in the environment could be from a recent release of fission products.

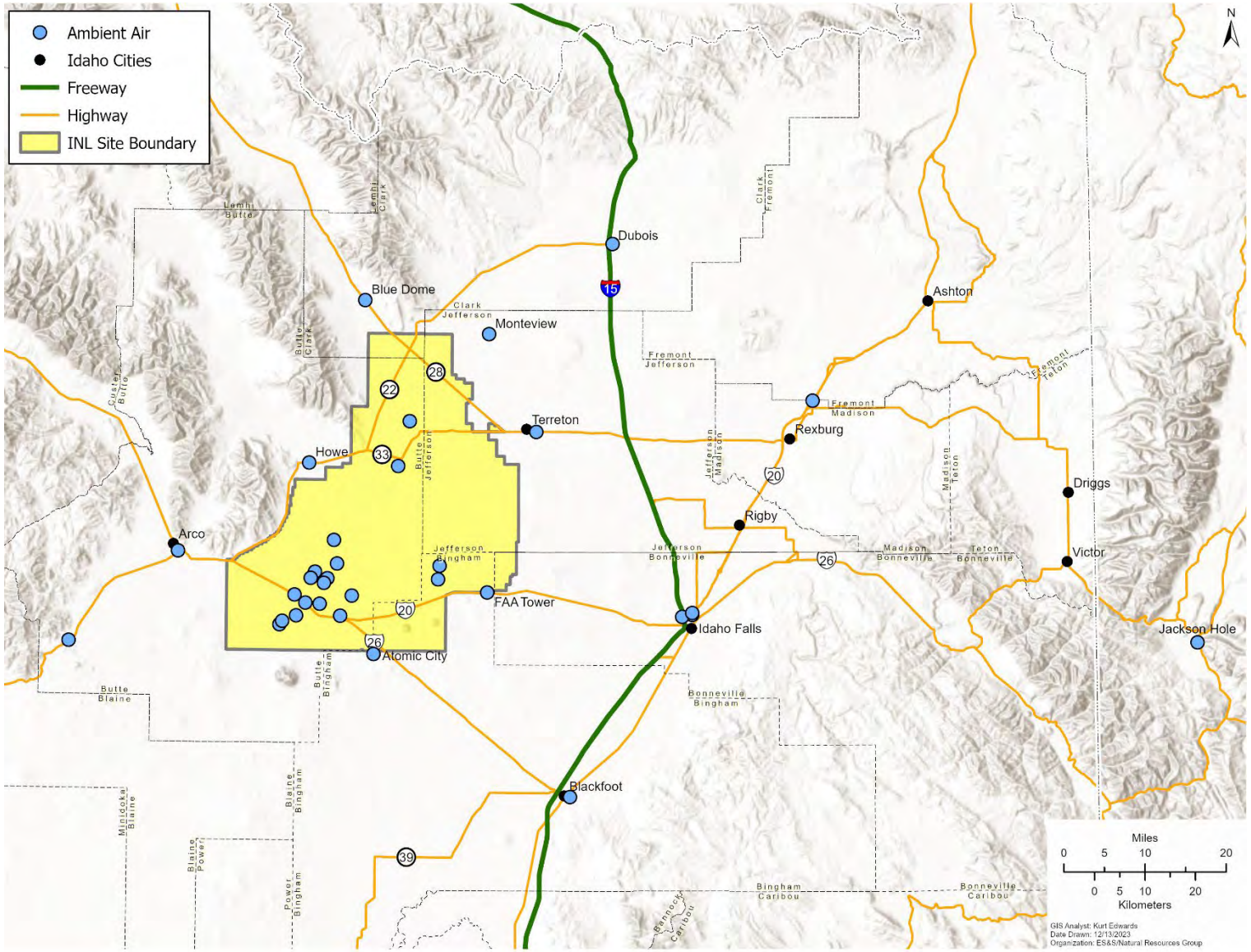

Figure 2. INL contractor air monitoring locations.

Gross alpha results are reported in Table C-1 and shown in Figures 3 through 6. Gross alpha concentrations measured in individual samples ranged from a low of $(-1.5 \pm 2.7) \times 10^{-16}$ µCi/ml collected at IRC North on October 17, 2023, to a high of $(4.9 \pm 0.23) \times 10^{-14}$ µCi/ml collected at RWMC on October 10, 2023. All results were less than the DCS of 1.1×10^{-13} µCi/ml for $^{239/240}$Pu (see Table B-1 of Appendix B). In addition, the results were consistent with historical data, as represented by the 99%/95% UTL for gross alpha activity (4.8×10^{-15} µCi/ml) except for the alpha concentration for the sample collected at RWMC on October 10, 2023. The elevated alpha concentration is likely the result of work activities occurring at RWMC. The radiochemical analysis results support this idea since ^{241}Am and plutonium isotopes were detected in fourth quarter 2023 composite samples collected from RWMC. The radiochemical results are discussed later in this section. The UTL was determined using ten years of historical data (measured from 2011 through 2020) and the ProUCL statistical software (https://www.epa.gov/land-research/proucl-software). The 99%/95% UTL is a value such that 99% of the population (all possible air measurements) is less than the UTL with 95% confidence. With a 99%/95% UTL it is expected that approximately 1% of the measurements will exceed the UTL if the concentration of gross alpha is within the normal range. This means if a concentration exceeds the UTL it does not necessarily indicate that the result is outside of the normal range. Rather, it indicates that the measurement should be closely examined to determine if it is unusually high.

Gross alpha data have been tested for distribution (normally or log-normally distributed) and generally show no consistent discernible distribution. Because there is no discernible distribution of the data, a parametric test of significance cannot be used. The non-parametric Kruskal-Wallis analysis of variance by ranks test of multiple independent groups was used to determine statistical differences between onsite, boundary, and offsite locations. The test assesses the hypothesis that the different samples in the comparison were drawn from the same distribution or from distributions with the same median. In the computation of the Kruskal-Wallis test, each of the N observations is replaced by a rank. That is, all the results from all the locations are combined and ranked in a single series with the smallest result replaced by rank 1 and the largest result replaced by rank N (i.e., the total number of results). The sum of the ranks in each location group (i.e., onsite, boundary, and offsite) is found and then averaged for each group. If the samples are from the same populations, the average ranks should be about the same, whereas if the samples are from populations with different medians, the average ranks should differ. Statistically significant difference exists between data groups if the p-value (or probability value) is less than 0.05. Values greater than 0.05 translate into a 95% confidence that the medians are statistically the same. The p-value for each comparison is shown in Table D-1. There was no statistically significant differences among groups for the quarter, or any month during the quarter (Table D-1). To determine if there were any differences between stations and where the differences occur, the Kruskal-Wallis analysis of variance by ranks test was used again. No differences were determined between stations (Table D-2).

Gross beta results are presented in Table C-1 and displayed in Figures 7 through 10. Gross beta concentrations measured in individual samples ranged from a low of $(9.83 \pm 0.76) \times 10^{-15}$ µCi/ml collected at Jackson, WY, on December 12, 2023, to a high of $(7.14 \pm 0.30) \times 10^{-14}$ µCi/ml collected at Highway 26 Rest Area on November 21, 2023. The typical temporal fluctuations in gross beta concentrations in air were observed during the quarter because of temperature inversions. All results were less than the DCS of 9.6×10^{-12} µCi/ml for ^{90}Sr (see Table B-1 of Appendix B). In addition, the results were consistent with historical data, as represented by the 99%/95% UTL for gross beta activity (6.1×10^{-14} µCi/ml). The data were tested quarterly and generally are found to be neither normally nor log-normally distributed. Box and whiskers plots were used to present the non-parametric data. Outliers and extreme values were retained in subsequent statistical analyses because they are within the range of measurements made in the past ten years, and because these values could not be attributed to mistakes in collection, analysis, or reporting procedures.

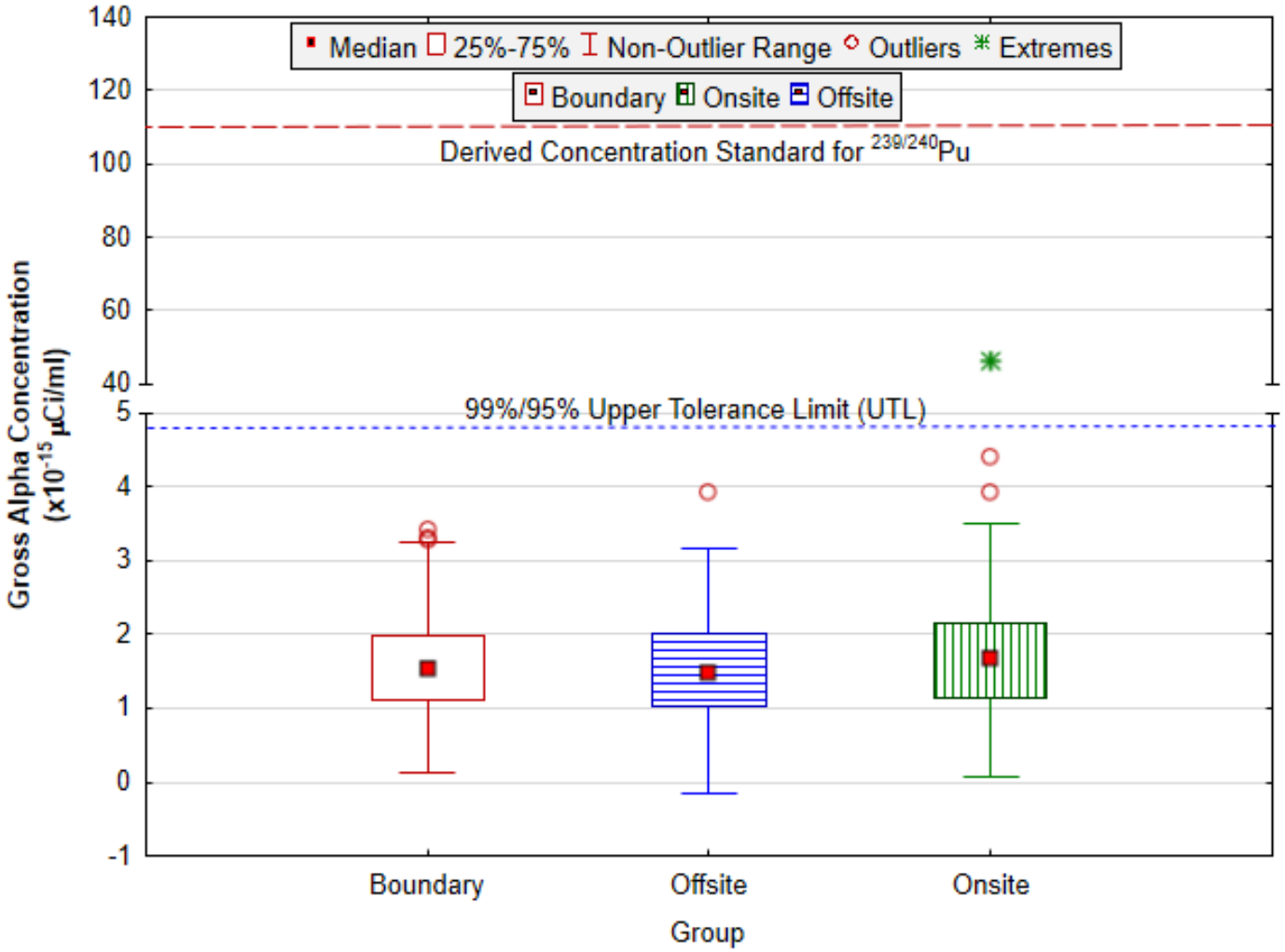

Figure 3. Gross alpha concentrations in air at onsite, boundary, and offsite locations for the fourth quarter of 2023. The DCS is the concentration of $^{239/240}Pu$ in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{238}U, ^{234}U, ^{232}Th, ^{226}Ra, and ^{210}Po) in uncertain proportions, a meaningful DCS cannot be constructed for gross alpha concentrations. The DCS for $^{239/240}Pu$ is shown because it is the most restrictive human-made alpha emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

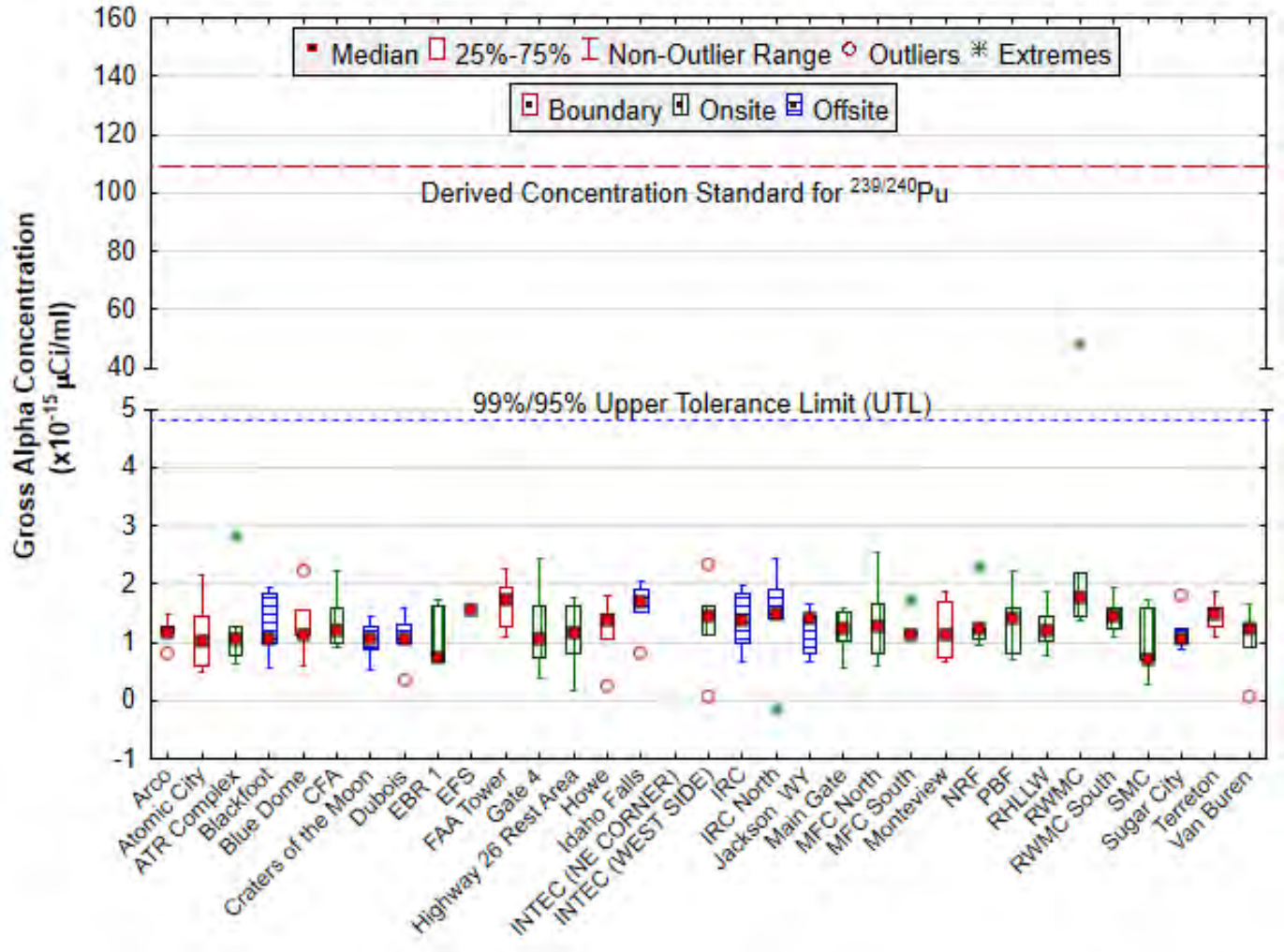

Figure 4. October 2023 gross alpha concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of $^{239/240}Pu$ in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{238}U, ^{234}U, ^{232}Th, ^{226}Ra, and ^{210}Po) in uncertain proportions, a meaningful DCS cannot be constructed for gross alpha concentrations. The DCS for $^{239/240}Pu$ is shown because it is the most restrictive human-made alpha emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

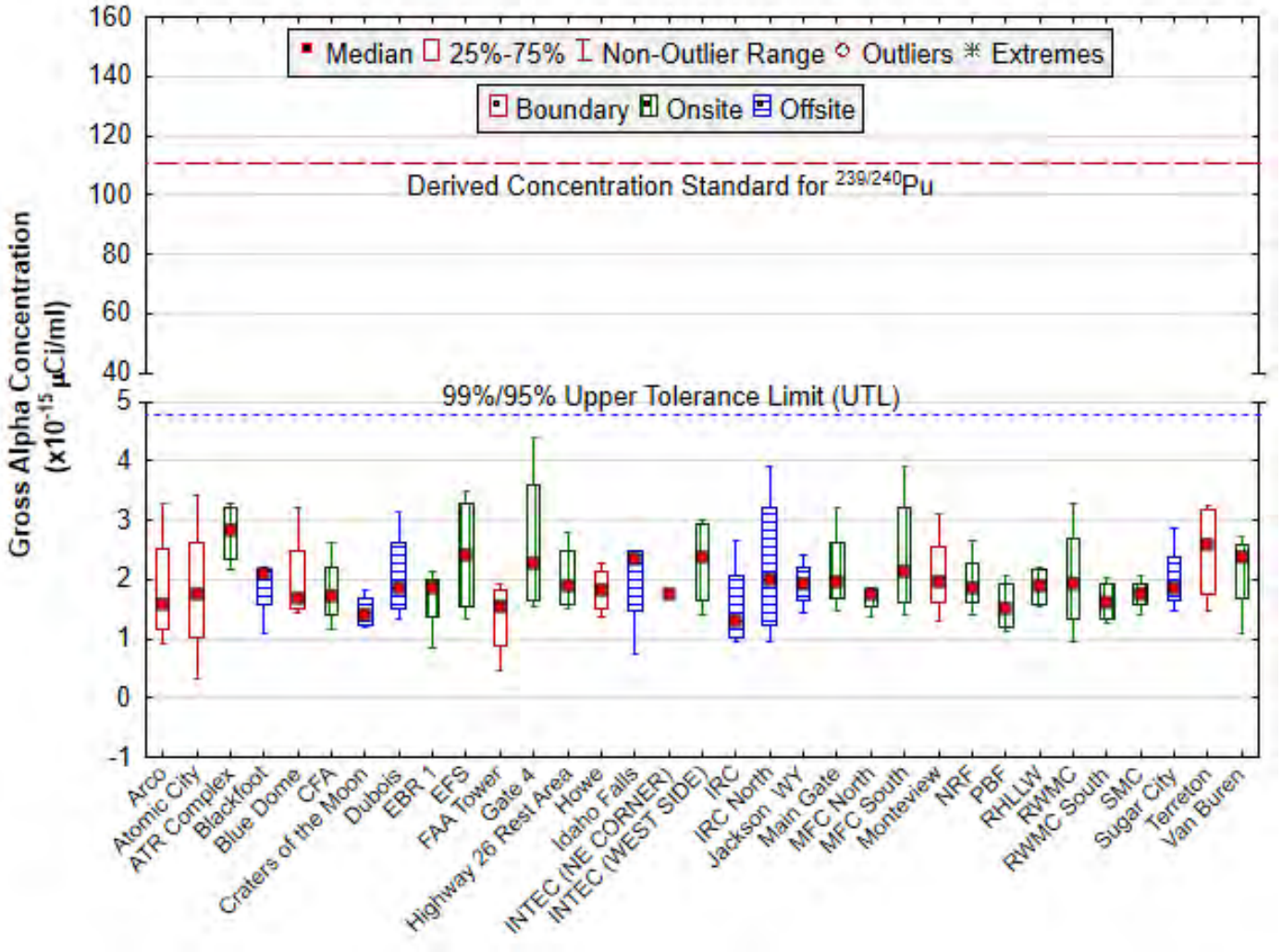

Figure 5. November 2023 gross alpha concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of $^{239/240}Pu$ in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{238}U, ^{234}U, ^{232}Th, ^{226}Ra, and ^{210}Po) in uncertain proportions, a meaningful DCS cannot be constructed for gross alpha concentrations. The DCS for $^{239/240}Pu$ is shown because it is the most restrictive human-made alpha emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

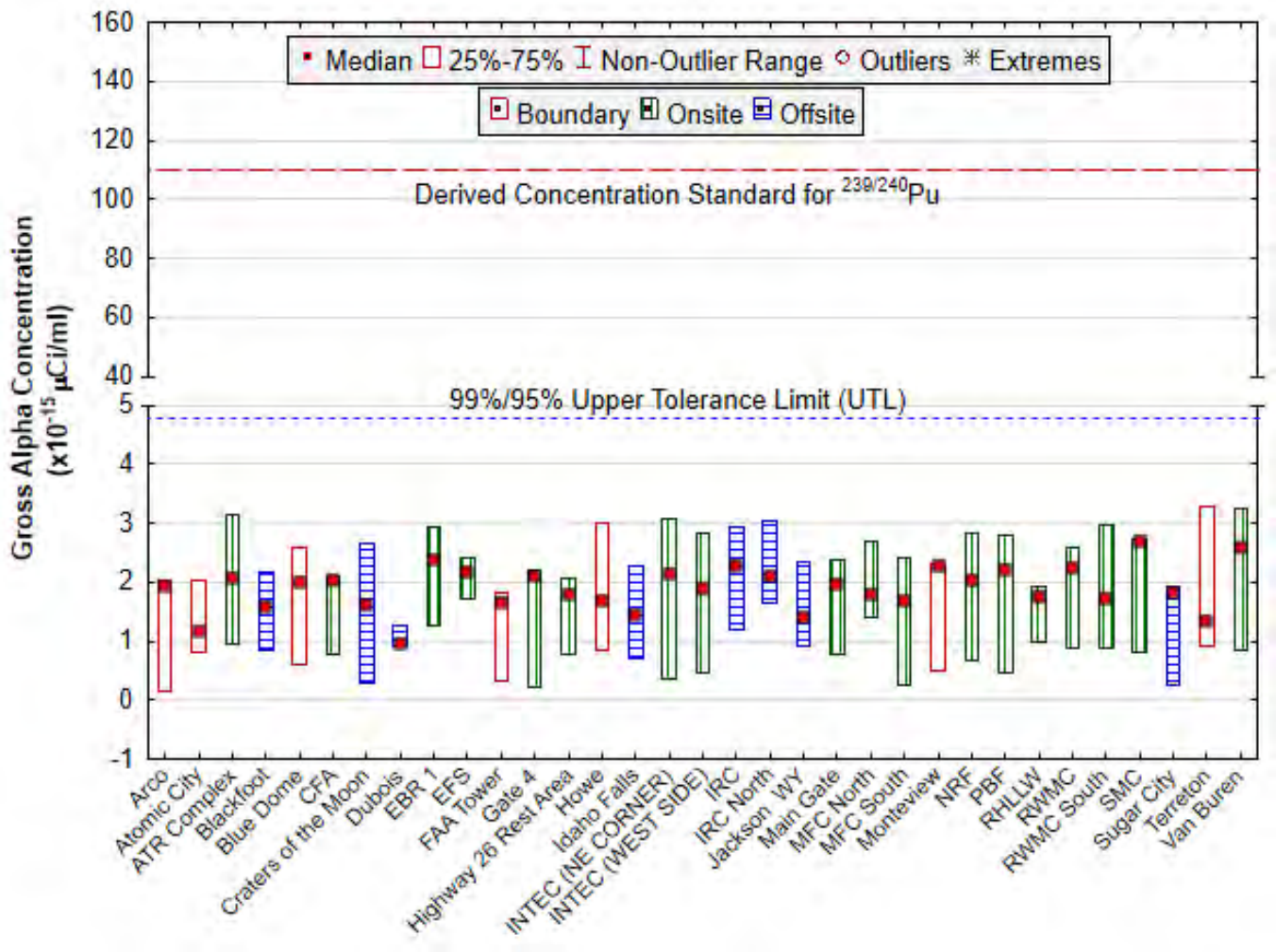

Figure 6. December 2023 gross alpha concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of $^{239/240}Pu$ in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{238}U, ^{234}U, ^{232}Th, ^{226}Ra, and ^{210}Po) in uncertain proportions, a meaningful DCS cannot be constructed for gross alpha concentrations. The DCS for $^{239/240}Pu$ is shown because it is the most restrictive human-made alpha emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

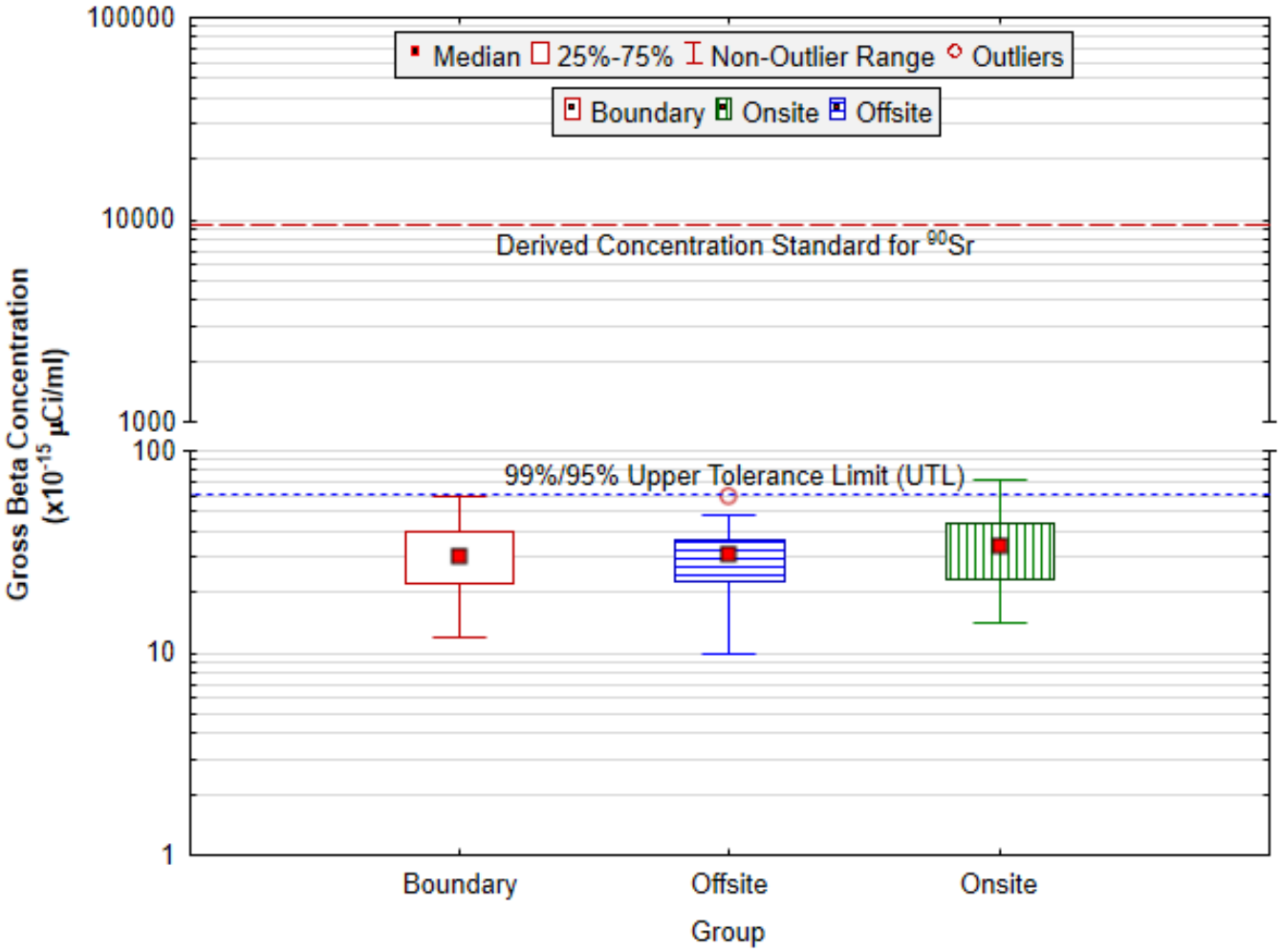

Figure 7. Gross beta concentrations in air at onsite, boundary, and offsite locations for the fourth quarter of 2023. The DCS is the concentration of ^{90}Sr in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{40}K, ^{228}Ra, and ^{210}Pb) in uncertain proportions, a meaningful DCS cannot be constructed for gross beta concentration. The DCS for ^{90}Sr is shown because it is the most restrictive human-made beta emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

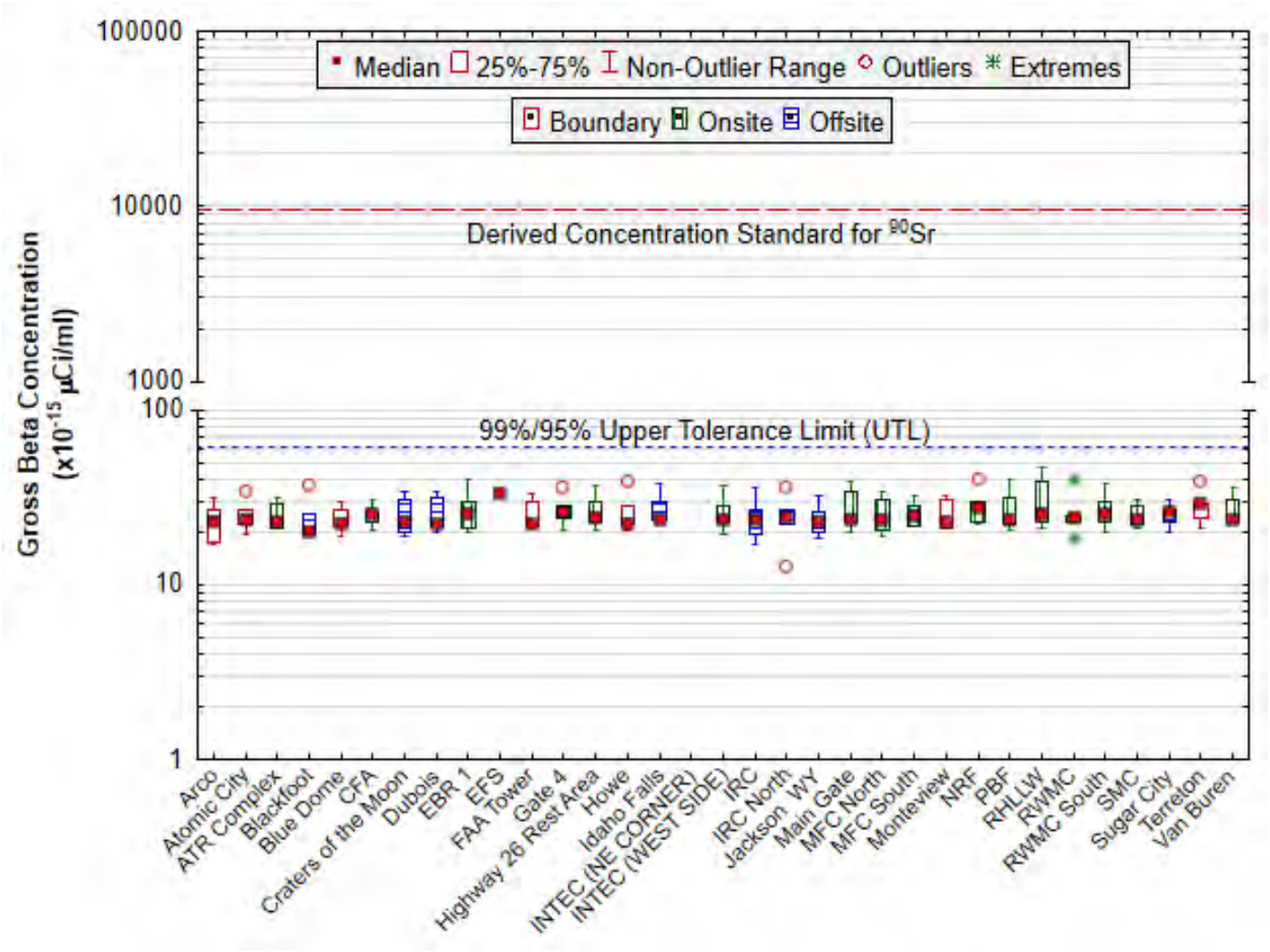

Figure 8. October 2023 gross beta concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of ^{90}Sr in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{40}K, ^{228}Ra, and ^{210}Pb) in uncertain proportions, a meaningful DCS cannot be constructed for gross beta concentrations. The DCS for ^{90}Sr is shown because it is the most restrictive human-made beta emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

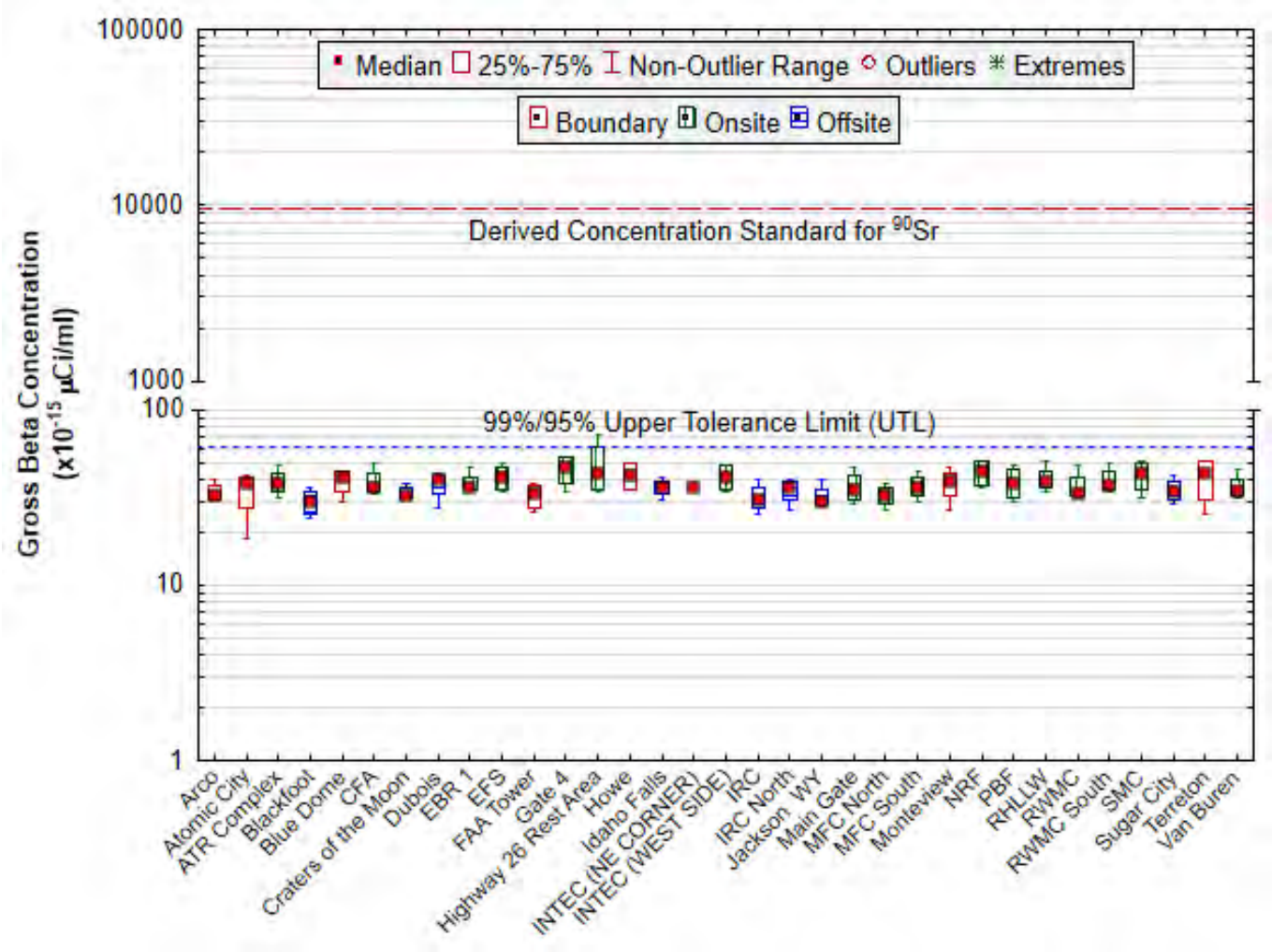

Figure 9. November 2023 gross beta concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of ^{90}Sr in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{40}K, ^{228}Ra, and ^{210}Pb) in uncertain proportions, a meaningful DCS cannot be constructed for gross beta concentrations. The DCS for ^{90}Sr is shown because it is the most restrictive human-made beta emitter. The UTL represents the value below which 99% of the population values are expected to fall with 95% confidence.

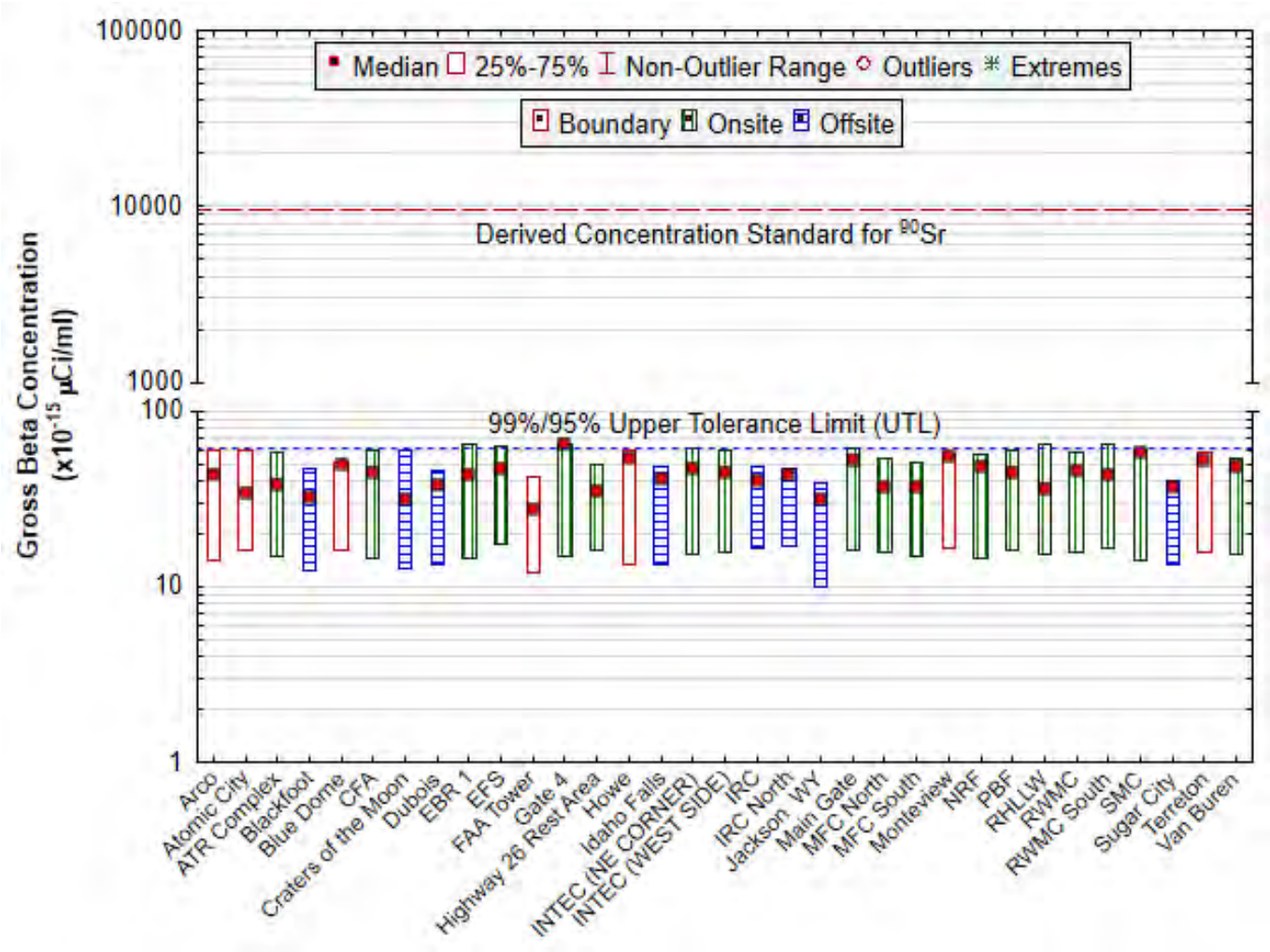

Figure 10. December 2023 gross beta concentrations in air at onsite, boundary, and offsite locations. The DCS is the concentration of ^{90}Sr in air which, if inhaled for a year, would result in a dose of 100 mrem/yr. Because the measurements include naturally occurring radionuclides (such as ^{40}K, ^{228}Ra, and ^{210}Pb) in uncertain proportions, a meaningful DCS cannot be constructed for gross beta concentrations. The DCS for ^{90}Sr is shown because it is the most restrictive human-made beta emitter. The UTL represents the value below which 99% of the population are expected to fall with 95% confidence.

There were no statistically significant differences in the gross beta data between groups for October and December (Table D-1), however, statistically significant differences did occur for the quarter and the month of November. To determine if there were any differences between stations and where the differences occur, multiple comparisons were also made using the Kruskal-Wallis analysis of variance by ranks test between gross beta concentrations measured at all locations. No differences were determined to have occurred between stations (Table D-3).

Iodine-131 was not detected in any of the charcoal cartridges measured during the fourth quarter. Weekly ^{131}I results for each location are listed in Table C-2.

Americium-241 was detected in composite samples collected from the Advanced Test Reactor (ATR) Complex and RWMC (Table C-3). The RWMC and RWMC (QA) samples resulted in concentrations that were above the UTL (1.3×10^{-13} µCi/mL), whereas the concentrations detected at ATR Complex and RWMC South were below the UTL. Plutonium-239/240 was detected in composite samples collected at RWMC, RWMC South, and RWMC (QA). The concentrations were greater than the UTL (1.29×10^{-13} µCi/mL). The composite collected from RWMC resulted in a detection of ^{238}Pu which was slightly greater than the UTL (2.65×10^{-17} µCi/mL). However, ^{238}Pu was not detected in the duplicate composite (RWMC [QA]). Plutonium isotopes and ^{241}Am are known to occur in soils at the Subsurface Disposal Area (SDA). SDA soils are contaminated from past flooding (in 1962 and 1969) of pits and trenches containing transuranic waste originating from the Rocky Flats Plant. During the fourth quarter of 2023, RWMC facility operations and maintenance activities took place (e.g., dismantling of enclosures and movement of soil) which may result in resuspension of soil particles. All detected results were below the DCS values for these radionuclides in air (i.e., 1.3×10^{-13} µCi/mL for ^{241}Am, 1.1×10^{-13} µCi/mL for $^{239/240}Pu$, and 1.2×10^{-13} µCi/mL for ^{238}Pu).

No ^{137}Cs or other human-made gamma-emitting radionuclides were found in quarterly air filter composites. Strontium-90, $^{233/234}U$, and ^{238}U were not detected in any composite sample.

3.2 Atmospheric Moisture Sampling

Atmospheric moisture is collected by pulling air through a column of absorbent material (molecular sieve material) to absorb water vapor. The water is then extracted from the absorbent material by heat distillation. The resulting water samples are then analyzed for tritium using liquid scintillation.

Results were available for fifteen atmospheric moisture samples collected at the onsite, boundary, and offsite locations during the fourth quarter of 2023 (Figure 11). One sample result ($[1.2 \pm 0.2] \times 10^{-12}$ µCi/mL$_{air}$) at RHLLW exceeded the 3s uncertainty level for tritium but is within historical range. The result is below the 99%/95% UTL of 1.6×10^{-12} µCi/mL$_{air}$ and the DOE DCS for tritium in air (as water vapor) of 1.3×10^{-7} µCi/mL$_{air}$. Results are shown in Table C-4, Appendix C.

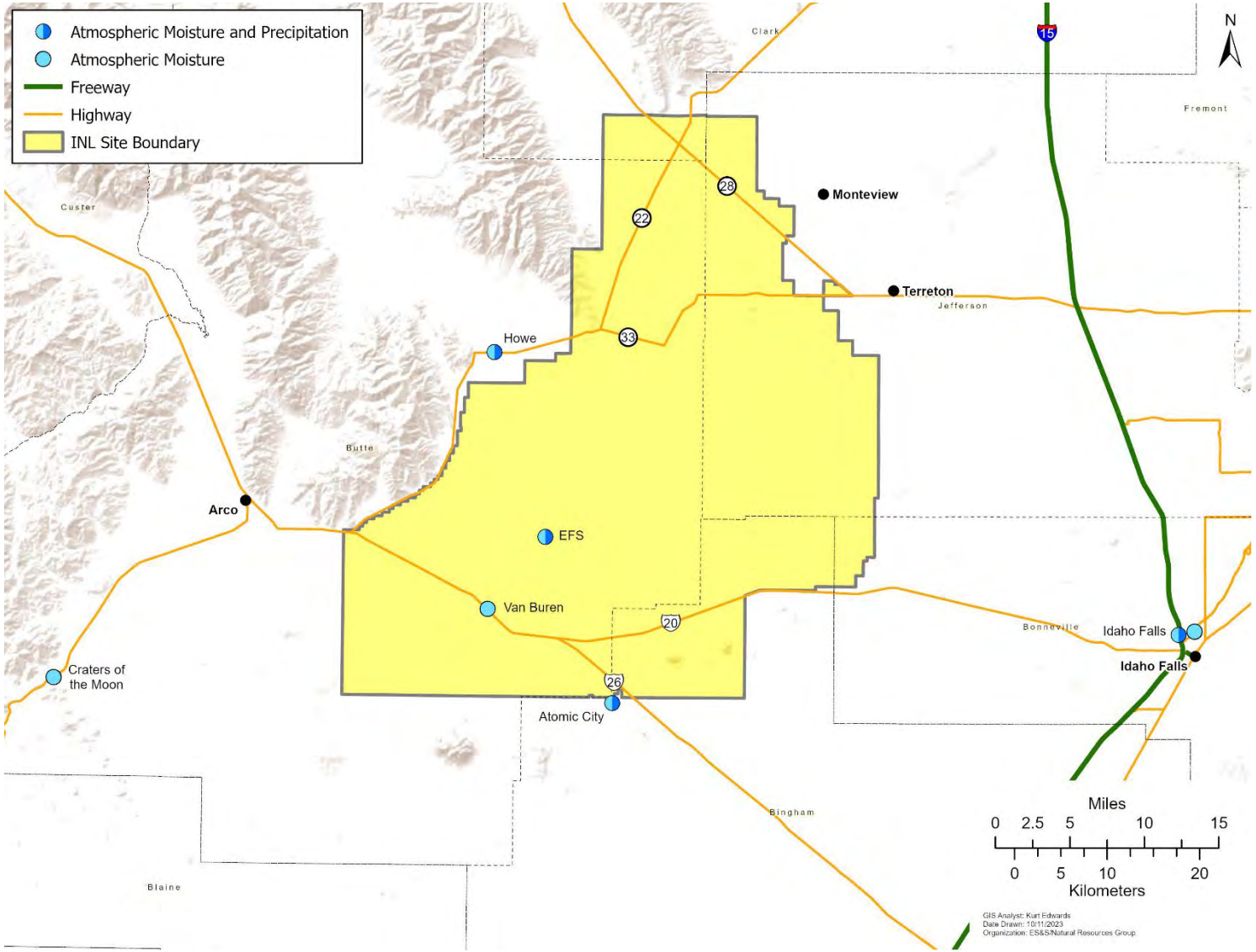

Figure 11. Atmospheric moisture and precipitation monitoring locations.

4. Precipitation and Water Sampling

4.1 Precipitation Sampling

Precipitation samples are gathered when enough precipitation occurs to allow for the collection of the minimum sample volume of approximately 50 mL. Samples are taken of monthly composites from Idaho Falls, and weekly (when available) from the EFS (onsite), Atomic City and Howe (boundary) (Figure 11). These are the same locations where atmospheric moisture samples are collected. Precipitation samples are analyzed for tritium. Storm events in the fourth quarter of 2023 produced sufficient amounts of precipitation to yield 13 samples.

Tritium was measured below the 3s values in all 13 samples. Results are listed in Appendix C, Table C-5. Low levels of tritium exist in the environment at all times as a result of cosmic ray reactions with water molecules in the upper atmosphere. Long-term data collected around the globe since 1961 by the International Atomic Energy Agency suggest that tritium levels have steadily decreased since the Nuclear Test Ban Treaty in 1963 and are close to their pre-nuclear test values (Cauquoin et al. 2015) and that there are no longer remnants of fallout from weapons testing.

4.2 Water Sampling

Drinking water samples were collected at seven locations. Water was not collected from Craters of the Moon due to maintenance crew turning off water for the winter. Surface water samples were collected at three Thousand Springs locations (plus a duplicate). All samples were analyzed for gross alpha, gross beta, and tritium. Results are listed in Appendix C, Table C-6.

Gross alpha activity was detected in two of the seven drinking water samples (Howe and Minidoka samples). No gross alpha was detected in any of the four surface water samples. The highest reported gross alpha value was (2.97 ± 0.93) pCi/L in the drinking water sample from Howe. Gross beta activity was detected in all seven drinking water samples, and in all four of the surface water samples. All gross alpha and gross beta concentrations were similar to previous results from drinking and surface water sampling. Natural levels of radioactive decay products of thorium and uranium exist in the Snake River Plain Aquifer and are the likely source of the measured concentrations. The highest reported gross beta value for drinking water was (5.24 ± 0.56) pCi/L in the sample collected from Mud Lake. The highest reported gross beta value for surface water was (6.79 ± 0.74) pCi/L in the sample collected from Alpheus Springs near Twin Falls. This location has historically shown the highest levels of natural activity. Tritium was not detected in any of the drinking water samples or surface water samples. Results are listed in Appendix C, Table C-6.

5. Agricultural Products and Wildlife

Another potential pathway for contaminants to reach humans is through the food chain. The INL contractor samples multiple agricultural products and game animals from around the INL Site and southeast Idaho. Specifically, milk, alfalfa, grain, potatoes, lettuce, large game animals, and waterfowl are sampled. Milk is sampled throughout the year. Large game animals are sampled whenever they are killed onsite from vehicle collisions. Alfalfa is collected during the second quarter. Typically lettuce, grain, and potatoes are collected during the third or fourth quarter. Waterfowl are collected in either the third or fourth quarter. See Table A-1, Appendix A, for a sampling schedule.

5.1 Milk Sampling

Milk samples were collected weekly at Rigby and Terreton. Monthly samples were collected at four additional locations around the INL Site (Figure 12) during the fourth quarter of 2023. In addition to the regional locations, commercially-available organic milk (from Broomfield, Colorado) was purchased as a control sample each month. All samples were analyzed for gamma-emitting radionuclides, with particular emphasis on ^{131}I.

Neither ^{131}I nor ^{137}Cs were detected in any weekly or monthly samples during the fourth quarter. No other human-made gamma-emitting radionuclides were found either. Data for ^{131}I and ^{137}Cs in milk samples are listed in Appendix C, Table C-7.

Neither tritium nor ^{90}Sr were detected in any of the milk samples collected during the fourth quarter of 2023. Data for tritium and ^{90}Sr in milk samples are listed in Appendix C, Table C-8.

5.2 Large Game Animal Sampling

No big game animals killed by vehicular collisions were available for sampling during the fourth quarter of 2023.

5.3 Waterfowl

Waterfowl are collected each year by the INL contractor at wastewater ponds on the INL Site and at a location off the INL Site. Three waterfowl were collected from wastewater ponds located at the ATR Complex, two control waterfowl collected from South Fork of the Snake River and one control waterfowl was collected from Swan Valley, Idaho. In 2023, there were no opportunities to collect waterfowl samples at INTEC and SMC, unlike in 2022 when dead waterfowl, resulting from unforeseen natural causes, were discovered at these locations allowed for sample collection. Each sample was divided into the following three sub-samples: (1) edible tissue (muscle, gizzard, heart, and liver); (2) external portion (feathers, feet, and head); and (3) all remaining tissue. All samples were analyzed for gamma-emitting radionuclides, ^{90}Sr, and actinides (^{241}Am, ^{238}Pu, and $^{239/240}Pu$). These radionuclides were selected because they have historically been measured in liquid effluents from some INL Site facilities.

A total of four human-made radionuclides were detected in edible, exterior, and remainder sub-samples from one of the ducks collected at the ATR Complex ponds. These nuclides were ^{137}Cs, cobalt-60 (^{60}Co), ^{90}Sr, and zinc-65 (^{65}Zn) (Appendix C, Table C-9). Cesium-137 was detected in the edible sub-sample of a control duck collected from the South Fork of the Snake River. Concentrations of radionuclides detected in waterfowl collected at the ATR Complex were higher than those collected in 2022. All results were within historical measurements observed during the past ten years (2013-2022). The ^{137}Cs detected in the control duck is most likely from past weapons testing fallout.

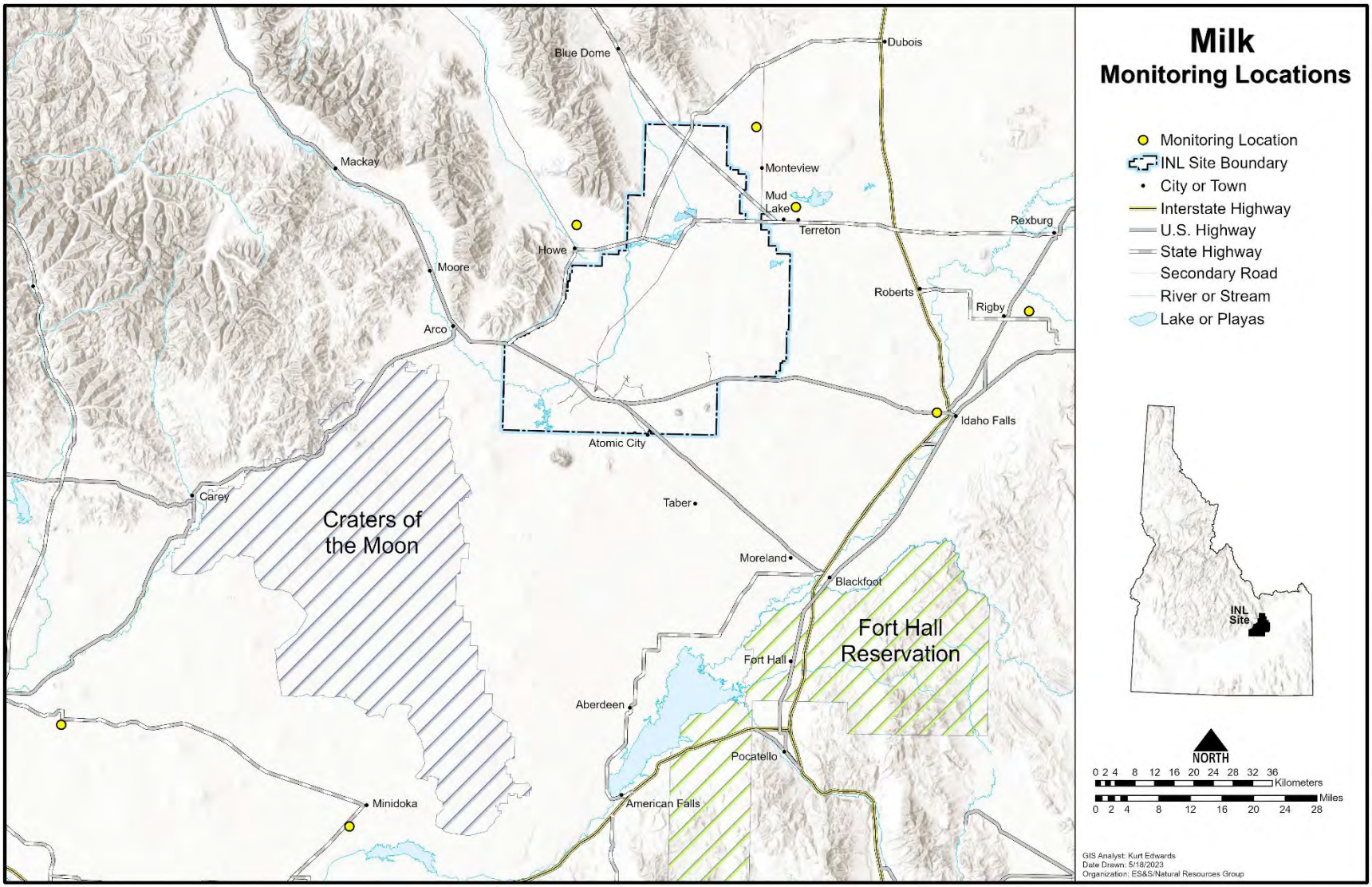

Figure 12. INL contractor milk monitoring locations.

Since human-made radionuclides were found in all three sub-samples from one duck collected at the ATR Complex ponds, it is assumed that the evaporation pond associated with this facility is the source of these radionuclides. The ducks were not taken directly from the two-celled Hypalon™-lined radioactive wastewater evaporation pond, but rather from an adjacent sewage lagoon. However, the duck probably spent time at the evaporation pond.

The maximum potential dose from eating 225 g (8 oz) of duck meat was calculated using the maximum concentration of the human-made radionuclides detected in the edible sub-samples. In 2023, the maximum concentrations were detected in an edible waterfowl sample collected from the ATR Complex ponds. Doses from consuming waterfowl are conservatively based on the assumption that ducks are eaten immediately after leaving the pond and no radioactive decay occurs. The maximum potential dose estimated from these waterfowl sample results is 0.026 mrem. The dose estimate is below the maximum potential dose from 2013 to 2022 (0.49 mrem [4.9 µSv]) and the 0.89 mrem (8.9 µSv) dose estimated from the most contaminated ducks taken from the evaporation ponds between 1993 and 1998 (Warren et al. 2001).

6. Environmental Radiation

An array of optically stimulated luminescent dosimeters (OSLDs) are distributed throughout the Eastern Snake River Plain and on the INL Site (Figure 13) to monitor for environmental radiation. In addition, neutron dose monitoring is conducted around INL facilities and buildings where neutron radiation may be present.

OSLD results from dosimeters collected during the fourth quarter of 2023 are displayed in Appendix C, Table C-10. Results are presented in dose units of millirem (mrem). Similar to the low-volume air results the environmental dosimeter locations are also divided into onsite, boundary and offsite groupings. The onsite OSLD values ranged from 49.9 mrem at TAN LOFT O-9 to 315.4 mrem at Idaho Chemical Processing Plant (ICPP) O-20, with an overall average of 79.80 mrem, which also equates to 0.43 mrem per day. The boundary OSLD values ranged from 51.5 mrem at RRL24 O-1 to 84.9 mrem at RRL5 O-1, with an overall average of 62.15 mrem, which also equates to 0.34 mrem per day. Offsite results varied from 44.5 mrem at IF-699B O-2 to 86.7 mrem at Sugar E-1. The offsite average was 56.56 mrem, which also equates to 0.31 mrem per day. The reported results for dosimeters collected during fourth quarter 2023 were primarily below the background UTL values. Table 1 lists the locations that exceeded the background level UTL.

The facility dosimeters that exceeded the background UTL for the November 2023 collection period were located at ANL O-23, ANL O-26, (formerly known as Argonne National Lab, located at Materials and Fuels Complex), ICPP O-15, INTEC ICPP, IF-603W O-4, Idaho Falls listed as IF, Test Reactor Area (TRA) O-10, TRA O-11, listed as TRA (Table 1).

Table 1. Dosimetry location above background level UTL.

Location	***Ambient dose (mrem)***	***Background UTL (mrem)***
ANL O-23	88.6	87.5
ANL O-26	89.1	87.5
ICPP O-15	165.3	146.90
IF-603W O-4	62.3	61.80
TRA O-10	139.2	121
TRA O-11	123.4	121

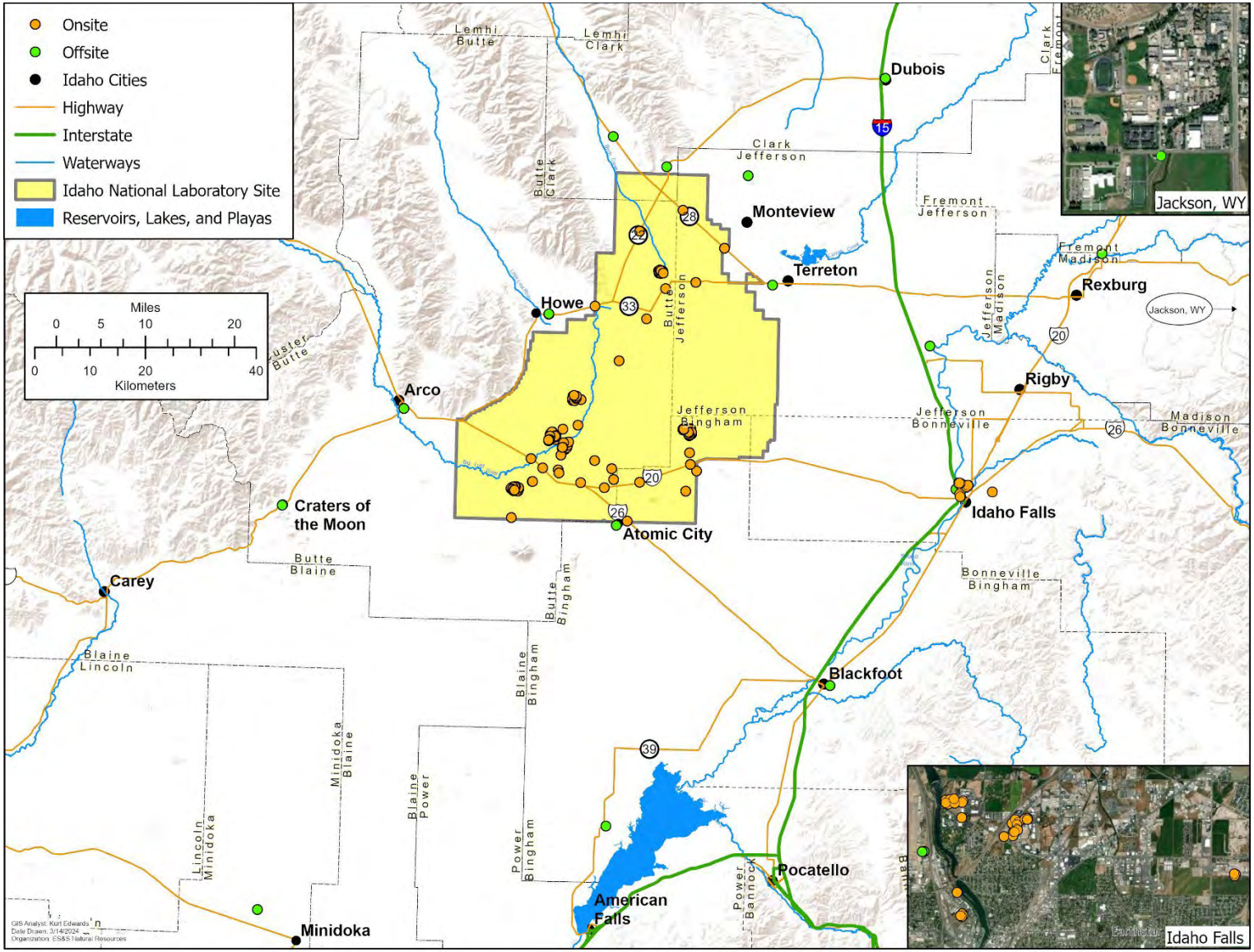

Figure 13. INL contractor OSLD locations.

The ANL and IF location results are only slightly over their respective UTL's. The ICPP result is not the highest seen at that location which has had a history of being elevated, but the UTL could be skewed low due to other locations in that area that are included in the calculation. TRA O-10 and TRA O-11 are above the UTL but not significantly. The UTL exceedances for locations near ICPP and TRA are expected to be due to operations in those areas. All environmental dosimetry results were provided to the Radiation Control Department for their consideration.

Neutron dose monitoring is conducted around buildings in Idaho Falls where sources may emit or generate neutron radiation. These buildings include: IF-652A Lindsay Building, IF-675 Portable Isotopic Neutron Spectroscopy Laboratory, IF-670 Bonneville County Technology Center, and IF-638 Physics Laboratory. Additional neutron dosimeters are placed at the INL Research Center along the south perimeter fence and at the background location Idaho Falls O-10. All neutron dosimeters collected were reported as 'M' which denotes the dose equivalents are below the minimum measurable quantity of 10 mrem. The background level for neutron dose is zero and the current dosimeters have a detection limit of 10 mrem. Any neutron dose measured is considered present due to sources inside the building. The INL contractor follows the recommendations of the manufacturer to prevent environmental damage to the neutron dosimetry by wrapping each in aluminum foil. To keep the foil intact, the dosimeter is inserted into an ultraviolet protective cloth pouch when deployed.

7. Quality Assurance

Quality assurance consists of planned and systematic activities that give confidence in environmental surveillance program results (NCRP 2012). Environmental surveillance programs should provide data of known quality for the assessments and decisions being made. Quality assurance and quality control programs were maintained by the INL contractor and laboratories performing environmental analyses.

In addition to the quality assurance processes implemented by the INL contractor, the laboratories also utilize trained personnel, procedures, and quality assurance processes to ensure quality data. Data quality reviews were performed by the laboratory and any unusual conditions were addressed and identified in the case narrative prior to reporting to INL.

Field sampling elements, laboratory measurements, and quality control samples were reviewed and evaluated by the INL contractor laboratories. Results are summarized in Section 7.2. Together this information was used to assess the quality of data provided to the INL contractor, and to follow-up and/or conduct a corrective action to improve processes when necessary. This multi-faceted approach to quality assurance and quality control added value to the INL contractor's monitoring program by providing confidence that all laboratory data reported in this report are reliable and of acceptable quality.

The INL contractor Quality Assurance Program consists of five ongoing tasks which measure: (1) method uncertainty; (2) data completeness; (3) data accuracy, using spike, performance evaluation and laboratory control samples; (4) data precision, using split samples, duplicate samples and recounts; and (5) presence of contamination in samples, using blanks.

Sample results are compared to criteria described in the *Environmental Monitoring Services Quality Assurance Project Plan* (INL 2022).

Assessments of the INL contractor data quality are achieved through analysis of spike, performance evaluation, and duplicate samples; through sample recounts; through analysis of blank samples; and through comparison of sample results to established method quality objectives.

7.1 Inter-laboratory Program Performance Testing Evaluations

Laboratories used for routine analyses of radionuclides in environmental media were selected by the INL contractor based on a laboratory's capabilities to meet program objectives, such as the ability to meet

required detection levels, and past results in performance testing (PT) programs. The DOE Consolidated Audit Program – Accreditation Program (DOECAP-AP) (comprised of third-party accreditation bodies) issues an annual accreditation certificate to laboratories seeking and maintaining accreditation. The rigorous accreditation process reviews each method, media, and analyte analyzed at the laboratory. An annual audit is performed to evaluate a laboratory's technical capability and competence, along with their proficiency in complying with DOE quality assurance requirements as outlined in the Quality Systems Manual (QSM 2021).

Similar to DOECAP-AP, DOE Laboratory Accreditation Program is responsible for implementing performance standards for DOE contractor external dosimetry program through periodic PT and on-site program assessments.

INL contracts with analytical laboratories who participate in PT programs accredited to ISO 17043 as outlined in the Quality Systems Manual (QSM 2021). The analytical laboratory is responsible for reviewing their PT results and correcting potential quality concerns identified by the PT provider. Analytical results from these PT providers are then compared to performance evaluations (PE) results for each media and analyte tested. DOECAP accreditation is obtained by achieving a history of two successful studies (acceptable scores) out of the most recent three attempts. Fourth quarter 2023 PT participation and results are listed below.

GEL Laboratories, LLC

GEL is accredited through DOECAP-AP and participated in PT studies Eckert & Ziegler Analytics (EZA) and Environmental Resource Associates (ERA) during the fourth quarter. GEL had acceptable results for analytes, methods, and media of interest to the INL contractor.

Landauer

Landauer is accredited through the DOE Laboratory Accreditation Program. Accreditation must be renewed on a triennial basis following periodic PT and on-site program assessments.

7.2 Quality Control Sample Program

The INL contractor sends quality control samples to laboratories along with routine environmental samples to be analyzed in tandem. The samples are prepared in a way that the quality control samples are analogous to the field samples. The laboratory is not aware of which samples are blanks, duplicates, or PE samples. Blanks, duplicate/replicate samples and PE samples for the fourth quarter are discussed below.

7.2.1 Blanks

The INL contractor submits field blanks along with the regular samples to test for the introduction of contamination during the process of field collection, laboratory preparation, and laboratory analysis. In the event a data quality or trending issue is identified, the concern will be documented in the Issues Management System to track resolutions and/or corrective actions.

No concerns were identified in blanks that would indicate data quality or trending issues with sampling, handling, shipment, or analysis by the laboratory contributed to the actual sample results. Fourth quarter 2023 blanks are discussed below.

GEL Laboratories, LLC

A total of 43 analytes were analyzed by GEL in various media. The media analyzed included: air filters, quarterly air filter composites, atmospheric moisture, precipitation, and milk.

7.2.2 Duplicate/Replicate Samples

The INL contractor submits field duplicate/replicate samples with the regular samples to assess field collection, homogeneity, reproducibility, laboratory preparation, laboratory analysis, and precision. In the event a data quality or trending issue is identified, the concern will be documented in the Issues Management System to track resolutions and/or corrective actions.

No concerns were identified in duplicate/replicates that would indicate data quality or trending issues with sampling, handling, shipment, homogeneity, reproducibility, or preparation and analysis by the laboratory contributed to the actual sample results. Fourth quarter 2023 duplicate/replicate samples are discussed below.

GEL Laboratories, LLC

A total of 135 analytes were analyzed by GEL Laboratories. The media analyzed included air filters, quarterly air filter composites, milk, and surface water samples.

7.2.3 PE Samples

PE samples are prepared samples that contain known values of analyte(s) of interest to the specific project, INL Site contractor program, or laboratory. PE samples are used to assist in improving accuracy of laboratory data by evaluating the analytical method (e.g., new media, new analyte, or adverse trends in PT or PE samples). The samples are matched as closely as possible to the specific media, analytes of interest, and expected concentration or activity levels appropriate for the specific project, program, or use in decision-making. In some cases, the PE sample matrix may differ from the field samples (i.e., using deionized water with a known amount of analyte to simulate an atmospheric moisture sample). The PE samples are generally submitted with batches of field samples, so they are processed simultaneously in the laboratory. In the event a data quality or trending issue is identified, the concern will be documented in INL's Issues Management System for tracking responses from the laboratory on the resolutions and/or corrective actions. These concerns provide for an opportunity for the INL contractor to work with the laboratory to fine tune methods, processes, and procedures that will lead to improved accuracy of the data.

In addition to the INL contractor PE program, GEL participates in the Mixed Analyte Performance Evaluation Program (MAPEP) conducted by the DOE Radiological and Environmental Sciences Laboratory. MAPEP provides quality assurance oversight for environmental analytical services through a performance based PE program that tests the ability of the laboratories to correctly analyze for radiological, stable organic and inorganic constituents representative of those at DOE sites.. These results are then compared with the INL contractor's internal PE results.

GEL Laboratories, LLC

GEL participated in MAPEP Series 49. A nonagreement was received for gross alpha in air filter media. The INL contractor reviewed GEL's PT performance. GEL received an agreement evaluation, therefore the nonagreement is a single event and not indicative of a trend. GEL received agreements for all other media and analytes of interest.

A total of 20 PE analytes were analyzed for air filter composites, surface water, and milk. These include gamma emitters, alpha emitters, and beta emitters. All media and analytes were in agreement except for those identified below.

GEL received nonagreement evaluations for ^{65}Zn (gamma emitter) and ^{90}Sr (beta emitter) in a milk sample. The INL contractor contacted the laboratory and requested a review of these nonagreements. Based on that review, the laboratory determined that the ^{65}Zn (gamma emitter) nonagreement was an anomaly. Stronium-90 (beta emitter) was biased high due to a low yield on the sample; therefore, no

further actions were taken. The INL contractor reviewed previous milk PE and PT results and found agreements for ^{90}Sr and ^{65}Zn. The INL contractor and the laboratory will continue to monitor for trends.

GEL received nonagreements for ^{65}Zn (gamma emitter) and ^{238}Pu and ^{239}Pu (alpha emitters) in an air filter composite PE sample. The INL contractor noted that a similar occurrence happened for ^{65}Zn in the second quarter 2023 PE composite sample. The laboratory was contacted and a request was made to review the ^{65}Zn nonagreement. Based on that review, the laboratory determined that the ^{65}Zn nonagreement may be due to the air filter composite being direct counted rather than digested. A recommendation was made by GEL to have the composite samples digested and then counted. The INL contractor will work with the laboratory to determine which process (direct or digestion) will improve the accuracy and precision of the results. The laboratory also reviewed the nonagreements for ^{238}Pu and ^{239}Pu (alpha emitters). The nonagreements were attributed to random counting statistics. The INL contractor reviewed the previous PE air filter composite, MAPEP, and ERA PT results and all analytes of interest for the composites were in agreement. This is a first occurrence for ^{238}Pu and ^{239}Pu and not indicative of a trend.

Landauer

A total of four PE analytes for direct radiation were analyzed by Landauer. All analytes received an agreement evaluation.

7.3 Invalid Samples

Twenty-four samples were deemed invalid due to power outages at EFS, and INTEC NE Corner (Table C-1 and C-2).

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Appendix A
Summary of Sampling Schedule

Table A-1. Summary of the INL contractor's sampling schedule.

Sample Type Analysis	Collection Frequency	Locations		
		Offsite	**Boundary**	**Onsite**
Air Sampling				
Low-Volume Air				
Gross Alpha, Gross Beta, ^{131}I	weekly	Blackfoot; Craters of the Moon; Dubois; Idaho Falls; IRC, IRC – North; Jackson, WY; Sugar City	Arco, Atomic City, Blue Dome, FAA Tower, Howe, Monteview, Terreton	ATR Complex, CFA, EBR-I, EFS, Gate 4, Hwy 26 Rest Area, INTEC (NE corner), INTEC (westside), Main Gate, MFC – North, MFC – South, NRF, PBF, RHLLW, RWMC, RWMC – South, SMC, Van Buren
Gamma Spec	quarterly	Blackfoot; Craters of the Moon; Dubois; Idaho Falls; IRC; IRC – North, Jackson, WY; Sugar City	Arco, Atomic City, Blue Dome, FAA Tower, Howe, Monteview, Terreton	ATR Complex, CFA, EBR-I, EFS, Gate 4, Hwy 26 Rest Area, INTEC (NE corner), INTEC (westside), Main Gate, MFC – North, MFC – South, NRF, PBF, RHLLW, RWMC, RWMC – South, SMC, Van Buren
^{90}Sr, Transuranics	quarterly	Blackfoot; Craters of the Moon; Dubois; Idaho Falls; IRC; IRC – North, Jackson, WY; Sugar City	Arco, Atomic City, Blue Dome, FAA Tower, Howe, Monteview, Terreton	ATR Complex, CFA, EBR-I, EFS, Gate 4, Hwy 26 Rest Area, INTEC (NE corner), INTEC (westside), Main Gate, MFC – North, MFC – South, NRF, PBF, RHLLW, RWMC, RWMC – South, SMC, Van Buren
Atmospheric Moisture				
Tritium	2 to 13 weeks	Idaho Falls, Craters of the Moon	Atomic City, Howe	EFS, RHLLW, Van Buren
Precipitation				
Tritium	monthly	Idaho Falls	None	None
Tritium	weekly	None	Atomic City, Howe	EFS

Table A-1. continued.

Sample Type Analysis	Collection Frequency	Locations		
		Offsite	**Boundary**	**Onsite**
Water Sampling				
Drinking Water				
Gross Alpha, Gross Beta, Tritium	semi-annually	Craters of the Moon, Idaho Falls, Minidoka, Shoshone	Atomic City, Howe, Mud Lake, Rest Area	None
Surface Water				
Gross Alpha, Gross Beta, Tritium	semi-annually	Buhl, Hagerman, Twin Falls	None	Big Lost River (when flowing)
External Radiation Sampling				
OSLDs				
Gamma Radiation	semiannual	Aberdeen; Blackfoot; Craters of the Moon; Dubois; Idaho Falls; Jackson, WY; Minidoka; Roberts; Sugar City	Arco, Atomic City, Birch Creek, Blue Dome, Howe, Monteview, Mud Lake, Resident Receptor Location	Advanced Test Reactor Complex; Auxiliary Reactor Area; Central Facilities Area; Experimental Breeder Reactor I; Experimental Field Station; Gate 4; Haul E; Haul W; Highway 20; Highway 22; Highway 28; Highway 33; Idaho Nuclear Technology and Engineering Center; Lincoln Boulevard; Materials and Fuels Complex; Naval Reactors Facility; Power Burst Facility Special Power Excursion Reactor; Radioactive Waste Management Complex; Remote-Handled Low-level Waste; Resident Receptor Locations; Rest Area; Test Area North, Loss-of-Fluid Test; Transient Reactor Test; Van Buren

Table A-1. continued.

Sample Type Analysis	Collection Frequency	Locations		
		Offsite	**Boundary**	**Onsite**
Neutron				
Neutron Radiation	semiannual	Idaho Falls	None	Materials and Fuels Complex; Remote-Handled Low-level Waste
Soil Sampling				
Soil				
Gamma Spec, ^{90}Sr, Transuranics	biennially	Blackfoot, Carey, St. Anthony	Atomic City, Birch Creek, Butte City, FAA Tower, Frenchman's Cabin, Howe, Monteview, Mud Lake (2)	EFS, Hwy 26 Rest Area, RWMC
Agricultural Product Sampling				
Milk				
Gamma Spec (^{131}I)	weekly	Rigby	Terreton	None
Gamma Spec (^{131}I)	monthly	Dietrich, Minidoka, Monteview, Rigby	Howe, Terreton	None
Tritium, ^{90}Sr	Semi-annually	Dietrich, Minidoka, Monteview, Rigby	Howe, Terreton	None
Potatoes				
Gamma Spec, ^{90}Sr	annually	Varies among Blackfoot, Driggs, Hamer, Idaho Falls, Rupert, Shelley, occasional samples across the U.S.	Varies among Arco, Monteview, Mud Lake, Terreton	None
Alfalfa				
Gamma Spec, ^{90}Sr	annually	Idaho Falls	Howe, Mud Lake	None

Table A-1. continued.

Sample Type Analysis	Collection Frequency	Locations		
		Offsite	**Boundary**	**Onsite**
		Grain		
Gamma Spec, ^{90}Sr	annually	Varies among American Falls, Blackfoot, Carey, Idaho Falls, Roberts, Rupert/Minidoka	Varies among Arco, Monteview, Mud Lake, Taber, Terreton	None
		Lettuce		
Gamma Spec, ^{90}Sr	annually	Varies among Blackfoot, Carey, Idaho Falls, Rigby, Sugar City	Varies among Arco, Atomic City, FAA Tower, Howe, Monteview	EFS
		Wildlife Sampling		
		Big Game		
Gamma Spec	varies	Occasional samples across the U.S.	Public Highways	INL Site roads
		Waterfowl		
Gamma Spec, ^{90}Sr, Transuranics	annually	Varies among: American Falls, Firth, Fort Hall, Heise, Market Lake, Mud Lake, Swan Valley	None	INL Site wastewater disposal ponds

Appendix B
Summary of MDCs and DCSs

Table B-1. Summary of approximate MDC for radiological analyses performed during fourth quarter 2023.

Sample Type	Analysis	Average MDC[a]	DCS[b]
Air (particulate filter)[e]	Gross alpha	7.0×10^{-16} µCi/mL	1.1×10^{-13} µCi/ml[c]
	Gross beta	1.1×10^{-15} µCi/mL	9.6×10^{-12} µCi/ml[d]
	^{137}Cs	9.9×10^{-17} µCi/mL	3.8×10^{-11} µCi/ml
	^{90}Sr	1.3×10^{-16} µCi/mL	9.6×10^{-12} µCi/ml
	^{241}Am	1.2×10^{-17} µCi/mL	1.3×10^{-13} µCi/ml
	^{238}Pu	9.2×10^{-18} µCi/mL	1.2×10^{-13} µCi/ml
	$^{239/240}$Pu	1.1×10^{-17} µCi/mL	1.1×10^{-13} µCi/ml
	$^{233/234}$U	1.7×10^{-17} µCi/mL	1.6×10^{-13} µCi/ml
	^{238}U	1.2×10^{-17} µCi/mL	1.8×10^{-13} µCi/ml
Air (charcoal cartridge)[e]	^{131}I	3.6×10^{-13} µCi/mL	4.5×10^{-10} µCi/ml
Air (atmospheric moisture)	^{3}H	6.3×10^{-13} µCi/mL$_{air}$	1.3×10^{-7} µCi/ml$_{air}$
Air (precipitation)	^{3}H	97 pCi/L	2.6×10^{6} pCi/L
Drinking/Surface Water	Gross alpha	2.5 pCi/L	4.0×10^{2} pCi/L[c]
	Gross beta	1.5 pCi/L	1.7×10^{3} pCi/L[d]
	^{3}H	109 pCi/L	2.6×10^{6} pCi/L
Milk	^{131}I	0.6 pCi/L	1.0×10^{4} pCi/L
	^{137}Cs	7.4 pCi/L	2.7×10^{4} pCi/L
	^{3}H	85 pCi/L	1.2×10^{7} pCi/L
	^{90}Sr	0.4 pCi/L	5.8×10^{3} pCi/L
Waterfowl	^{241}Am	6.6 pCi/kg	–[f]
	^{137}Cs	19 pCi/kg	–
	^{60}Co	35 pCi/kg	–
	^{238}Pu	7.0 pCi/kg	–
	$^{239/240}$Pu	6.9 pCi/kg	–
	^{90}Sr	25 pCi/kg	–
	^{65}Zn	94 pCi/kg	–

Table B-1. continued.

Sample Type	Analysis	Average MDC[a]	DCS[b]

a. The MDC is an estimate of the concentration of radioactivity in a given sample type that can be identified with a 95% level of confidence. MDCs are calculated and reported by the laboratories based on actual INL contractor sample results following analysis.
b. DCSs, set by the DOE, represent reference values for radiation exposure. They are based on a radiation dose of 100 mrem/yr for exposure through a particular exposure mode such as direct exposure, inhalation, or ingestion of water.
c. Based on the most restrictive human-made alpha emitter (^{239}Pu).
d. Based on the most restrictive human-made beta emitter (^{90}Sr).
e. The approximate MDC for air is based on an average filtered air volume (pressure corrected) of 445 m^3/week.
f. No appropriate DCS available.

Appendix C
Sample Analysis Results

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location	Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
BOUNDARY							
ARCO	10/03/23	1.17 ± 0.35	4.33 ± 1.31	**Yes**	17.00 ± 0.97	62.90 ± 3.59	**Yes**
	10/10/23	1.15 ± 0.36	4.26 ± 1.32	**Yes**	17.40 ± 0.96	64.38 ± 3.54	**Yes**
	10/17/23	0.83 ± 0.42	3.06 ± 1.57	No	22.80 ± 1.13	84.36 ± 4.18	**Yes**
	10/24/23	1.28 ± 0.37	4.74 ± 1.35	**Yes**	31.80 ± 1.27	117.66 ± 4.70	**Yes**
	10/31/23	1.47 ± 0.39	5.44 ± 1.44	**Yes**	26.70 ± 1.19	98.79 ± 4.40	**Yes**
	11/07/23	3.29 ± 0.58	12.17 ± 2.13	**Yes**	40.10 ± 1.40	148.37 ± 5.18	**Yes**
	11/14/23	1.40 ± 0.40	5.18 ± 1.48	**Yes**	30.80 ± 1.28	113.96 ± 4.74	**Yes**
	11/21/23	1.73 ± 0.41	6.40 ± 1.51	**Yes**	33.40 ± 1.25	123.58 ± 4.63	**Yes**
	11/28/23	0.91 ± 0.33	3.38 ± 1.21	No	30.80 ± 1.25	113.96 ± 4.63	**Yes**
	12/06/23	2.04 ± 0.42	7.55 ± 1.54	**Yes**	43.50 ± 1.36	160.95 ± 5.03	**Yes**
	12/13/23	0.13 ± 0.14	0.50 ± 0.51	No	14.10 ± 0.86	52.17 ± 3.17	**Yes**
	12/20/23	1.94 ± 0.42	7.18 ± 1.54	**Yes**	59.40 ± 1.73	219.78 ± 6.40	**Yes**
ATOMIC CITY	10/03/23	0.61 ± 0.27	2.27 ± 1.01	No	19.60 ± 1.04	72.52 ± 3.85	**Yes**
	10/10/23	1.43 ± 0.41	5.29 ± 1.51	**Yes**	22.20 ± 1.11	82.14 ± 4.11	**Yes**
	10/17/23	0.51 ± 0.38	1.88 ± 1.40	No	23.40 ± 1.14	86.58 ± 4.22	**Yes**
	10/24/23	2.14 ± 0.47	7.92 ± 1.72	**Yes**	34.00 ± 1.33	125.80 ± 4.92	**Yes**
	10/31/23	1.02 ± 0.32	3.77 ± 1.18	**Yes**	26.50 ± 1.14	98.05 ± 4.22	**Yes**
	11/07/23	3.43 ± 0.59	12.69 ± 2.19	**Yes**	42.00 ± 1.44	155.40 ± 5.33	**Yes**
	11/14/23	1.82 ± 0.44	6.73 ± 1.63	**Yes**	36.80 ± 1.36	136.16 ± 5.03	**Yes**
	11/21/23	1.69 ± 0.41	6.25 ± 1.52	**Yes**	39.10 ± 1.37	144.67 ± 5.07	**Yes**
	11/28/23	0.34 ± 0.23	1.24 ± 0.84	No	18.50 ± 1.00	68.45 ± 3.70	**Yes**
	12/06/23	2.03 ± 0.42	7.51 ± 1.56	**Yes**	33.60 ± 1.22	124.32 ± 4.51	**Yes**
	12/13/23	0.81 ± 0.30	3.00 ± 1.12	No	16.20 ± 0.93	59.94 ± 3.46	**Yes**
	12/20/23	1.15 ± 0.33	4.26 ± 1.24	**Yes**	59.80 ± 1.75	221.26 ± 6.48	**Yes**
BLUE DOME	10/03/23	1.12 ± 0.36	4.14 ± 1.31	**Yes**	21.60 ± 1.06	79.92 ± 3.92	**Yes**
	10/10/23	0.61 ± 0.24	2.26 ± 0.88	No	19.00 ± 0.99	70.30 ± 3.66	**Yes**
	10/17/23	1.14 ± 0.36	4.22 ± 1.34	**Yes**	22.10 ± 1.06	81.77 ± 3.92	**Yes**
	10/24/23	1.56 ± 0.41	5.77 ± 1.52	**Yes**	29.90 ± 1.23	110.63 ± 4.55	**Yes**
	10/31/23	2.24 ± 0.48	8.29 ± 1.78	**Yes**	27.00 ± 1.16	99.90 ± 4.29	**Yes**
	11/07/23	1.78 ± 0.41	6.59 ± 1.53	**Yes**	44.70 ± 1.54	165.39 ± 5.70	**Yes**
	11/14/23	1.59 ± 0.40	5.88 ± 1.47	**Yes**	37.90 ± 1.36	140.23 ± 5.03	**Yes**
	11/21/23	3.20 ± 0.55	11.84 ± 2.02	**Yes**	43.20 ± 1.45	159.84 ± 5.37	**Yes**
	11/28/23	1.45 ± 0.35	5.37 ± 1.29	**Yes**	29.90 ± 1.19	110.63 ± 4.40	**Yes**
	12/06/23	2.00 ± 0.42	7.40 ± 1.55	**Yes**	49.40 ± 1.46	182.78 ± 5.40	**Yes**
	12/13/23	0.61 ± 0.24	2.25 ± 0.88	No	15.90 ± 0.91	58.83 ± 3.36	**Yes**
	12/20/23	2.57 ± 0.52	9.51 ± 1.91	**Yes**	51.30 ± 1.60	189.81 ± 5.92	**Yes**
FAA TOWER	10/03/23	1.28 ± 0.37	4.74 ± 1.37	**Yes**	21.30 ± 1.04	78.81 ± 3.85	**Yes**
	10/10/23	1.93 ± 0.41	7.14 ± 1.51	**Yes**	21.90 ± 1.07	81.03 ± 3.96	**Yes**
	10/17/23	1.10 ± 0.35	4.07 ± 1.29	**Yes**	22.30 ± 1.05	82.51 ± 3.89	**Yes**
	10/24/23	2.27 ± 0.50	8.40 ± 1.86	**Yes**	33.20 ± 1.33	122.84 ± 4.92	**Yes**
	10/31/23	1.73 ± 0.42	6.40 ± 1.55	**Yes**	29.90 ± 1.20	110.63 ± 4.44	**Yes**
	11/07/23	1.33 ± 0.36	4.92 ± 1.33	**Yes**	38.20 ± 1.42	141.34 ± 5.25	**Yes**
	11/14/23	1.74 ± 0.41	6.44 ± 1.51	**Yes**	36.40 ± 1.32	134.68 ± 4.88	**Yes**
	11/21/23	0.47 ± 0.23	1.73 ± 0.87	No	29.80 ± 1.21	110.26 ± 4.48	**Yes**
	11/28/23	1.92 ± 0.42	7.10 ± 1.54	**Yes**	25.80 ± 1.17	95.46 ± 4.33	**Yes**
	12/06/23	1.66 ± 0.40	6.14 ± 1.48	**Yes**	27.80 ± 1.12	102.86 ± 4.14	**Yes**
	12/13/23	0.32 ± 0.22	1.20 ± 0.81	No	12.00 ± 0.80	44.40 ± 2.95	**Yes**
	12/20/23	1.82 ± 0.43	6.73 ± 1.59	**Yes**	41.70 ± 1.42	154.29 ± 5.25	**Yes**
HOWE	10/03/23	1.05 ± 0.31	3.89 ± 1.16	**Yes**	20.50 ± 1.05	75.85 ± 3.89	**Yes**
	10/10/23	1.38 ± 0.40	5.11 ± 1.47	**Yes**	22.30 ± 1.08	82.51 ± 4.00	**Yes**
	10/17/23	0.24 ± 0.30	0.89 ± 1.11	No	22.20 ± 1.04	82.14 ± 3.85	**Yes**
	10/24/23	1.80 ± 0.46	6.66 ± 1.69	**Yes**	38.70 ± 1.62	143.19 ± 5.99	**Yes**
	10/31/23	1.47 ± 0.37	5.44 ± 1.35	**Yes**	27.90 ± 1.21	103.23 ± 4.48	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location	Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
	11/07/23	2.27 ± 0.49	8.40 ± 1.80	**Yes**	49.40 ± 1.56	182.78 ± 5.77	**Yes**
	11/14/23	1.67 ± 0.43	6.18 ± 1.58	**Yes**	35.30 ± 1.33	130.61 ± 4.92	**Yes**
	11/21/23	2.00 ± 0.47	7.40 ± 1.75	**Yes**	48.20 ± 1.57	178.34 ± 5.81	**Yes**
	11/28/23	1.38 ± 0.38	5.11 ± 1.42	**Yes**	35.10 ± 1.29	129.87 ± 4.77	**Yes**
	12/06/23	3.01 ± 0.53	11.14 ± 1.94	**Yes**	54.20 ± 1.54	200.54 ± 5.70	**Yes**
	12/13/23	0.86 ± 0.30	3.17 ± 1.11	No	13.20 ± 0.82	48.84 ± 3.05	**Yes**
	12/20/23	1.68 ± 0.41	6.22 ± 1.53	**Yes**	59.60 ± 1.72	220.52 ± 6.36	**Yes**
MONTEVIEW	10/03/23	1.13 ± 0.34	4.18 ± 1.27	**Yes**	21.30 ± 1.06	78.81 ± 3.92	**Yes**
	10/10/23	0.73 ± 0.29	2.69 ± 1.07	No	20.90 ± 1.02	77.33 ± 3.77	**Yes**
	10/17/23	0.68 ± 0.39	2.52 ± 1.43	No	22.80 ± 1.10	84.36 ± 4.07	**Yes**
	10/24/23	1.69 ± 0.41	6.25 ± 1.51	**Yes**	31.90 ± 1.26	118.03 ± 4.66	**Yes**
	10/31/23	1.88 ± 0.42	6.96 ± 1.55	**Yes**	30.70 ± 1.22	113.59 ± 4.51	**Yes**
	11/07/23	1.93 ± 0.47	7.14 ± 1.74	**Yes**	46.80 ± 1.57	173.16 ± 5.81	**Yes**
	11/14/23	2.02 ± 0.46	7.47 ± 1.71	**Yes**	37.00 ± 1.37	136.90 ± 5.07	**Yes**
	11/21/23	3.10 ± 0.57	11.47 ± 2.09	**Yes**	40.30 ± 1.44	149.11 ± 5.33	**Yes**
	11/28/23	1.29 ± 0.38	4.77 ± 1.40	**Yes**	26.90 ± 1.17	99.53 ± 4.33	**Yes**
	12/06/23	2.30 ± 0.47	8.51 ± 1.75	**Yes**	56.60 ± 1.62	209.42 ± 5.99	**Yes**
	12/13/23	0.51 ± 0.26	1.88 ± 0.97	No	16.40 ± 0.94	60.68 ± 3.46	**Yes**
	12/20/23	2.27 ± 0.45	8.40 ± 1.66	**Yes**	55.30 ± 1.67	204.61 ± 6.18	**Yes**
TERRETON	10/03/23	1.60 ± 0.42	5.92 ± 1.56	**Yes**	21.30 ± 1.08	78.81 ± 4.00	**Yes**
	10/10/23	1.87 ± 0.44	6.92 ± 1.62	**Yes**	24.10 ± 1.14	89.17 ± 4.22	**Yes**
	10/17/23	1.09 ± 0.38	4.03 ± 1.39	No	28.90 ± 1.27	106.93 ± 4.70	**Yes**
	10/24/23	1.28 ± 0.37	4.74 ± 1.37	**Yes**	38.40 ± 1.41	142.08 ± 5.22	**Yes**
	10/31/23	1.49 ± 0.39	5.51 ± 1.46	**Yes**	29.20 ± 1.20	108.04 ± 4.44	**Yes**
	11/07/23	3.25 ± 0.58	12.03 ± 2.13	**Yes**	50.70 ± 1.65	187.59 ± 6.11	**Yes**
	11/14/23	1.48 ± 0.36	5.48 ± 1.34	**Yes**	36.10 ± 1.37	133.57 ± 5.07	**Yes**
	11/21/23	3.14 ± 0.54	11.62 ± 2.01	**Yes**	49.80 ± 1.63	184.26 ± 6.03	**Yes**
	11/28/23	2.00 ± 0.42	7.40 ± 1.56	**Yes**	25.30 ± 1.08	93.61 ± 4.00	**Yes**
	12/06/23	1.35 ± 0.34	5.00 ± 1.27	**Yes**	52.10 ± 1.59	192.77 ± 5.88	**Yes**
	12/13/23	0.93 ± 0.32	3.43 ± 1.17	No	15.50 ± 0.89	57.35 ± 3.28	**Yes**
	12/20/23	3.27 ± 0.59	12.10 ± 2.19	**Yes**	58.50 ± 1.74	216.45 ± 6.44	**Yes**
OFFSITE							
BLACKFOOT	10/03/23	1.06 ± 0.34	3.92 ± 1.24	**Yes**	19.60 ± 1.03	72.52 ± 3.81	**Yes**
	10/10/23	0.98 ± 0.34	3.62 ± 1.25	No	19.70 ± 1.03	72.89 ± 3.81	**Yes**
	10/17/23	0.56 ± 0.30	2.06 ± 1.12	No	19.40 ± 1.05	71.78 ± 3.89	**Yes**
	10/24/23	1.93 ± 0.42	7.14 ± 1.55	**Yes**	36.40 ± 1.39	134.68 ± 5.14	**Yes**
	10/31/23	1.85 ± 0.44	6.85 ± 1.64	**Yes**	25.40 ± 1.15	93.98 ± 4.26	**Yes**
	11/07/23	2.22 ± 0.49	8.21 ± 1.80	**Yes**	32.10 ± 1.27	118.77 ± 4.70	**Yes**
	11/14/23	2.05 ± 0.47	7.59 ± 1.73	**Yes**	27.10 ± 1.18	100.27 ± 4.37	**Yes**
	11/21/23	2.14 ± 0.47	7.92 ± 1.73	**Yes**	36.00 ± 1.34	133.20 ± 4.96	**Yes**
	11/28/23	1.08 ± 0.35	4.00 ± 1.31	**Yes**	23.90 ± 1.11	88.43 ± 4.11	**Yes**
	12/06/23	1.59 ± 0.35	5.88 ± 1.30	**Yes**	31.90 ± 1.19	118.03 ± 4.40	**Yes**
	12/13/23	0.85 ± 0.30	3.16 ± 1.10	No	12.30 ± 0.79	45.51 ± 2.94	**Yes**
	12/20/23	2.16 ± 0.47	7.99 ± 1.75	**Yes**	46.40 ± 1.51	171.68 ± 5.59	**Yes**
CRATERS OF THE MOON	10/03/23	0.90 ± 0.30	3.32 ± 1.11	No	19.10 ± 0.98	70.67 ± 3.61	**Yes**
	10/10/23	1.04 ± 0.34	3.85 ± 1.26	**Yes**	19.80 ± 1.01	73.26 ± 3.74	**Yes**
	10/17/23	0.54 ± 0.30	1.99 ± 1.09	No	23.10 ± 1.12	85.47 ± 4.14	**Yes**
	10/24/23	1.26 ± 0.36	4.66 ± 1.33	**Yes**	34.20 ± 1.30	126.54 ± 4.81	**Yes**
	10/31/23	1.43 ± 0.39	5.29 ± 1.45	**Yes**	30.20 ± 1.24	111.74 ± 4.59	**Yes**
	11/07/23	1.23 ± 0.37	4.55 ± 1.37	**Yes**	33.70 ± 1.29	124.69 ± 4.77	**Yes**
	11/14/23	1.21 ± 0.36	4.48 ± 1.33	**Yes**	31.40 ± 1.25	116.18 ± 4.63	**Yes**
	11/21/23	1.81 ± 0.43	6.70 ± 1.58	**Yes**	38.10 ± 1.36	140.97 ± 5.03	**Yes**
	11/28/23	1.55 ± 0.41	5.74 ± 1.50	**Yes**	31.00 ± 1.24	114.70 ± 4.59	**Yes**
	12/06/23	1.62 ± 0.38	5.99 ± 1.41	**Yes**	31.60 ± 1.16	116.92 ± 4.29	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

		GROSS ALPHA							GROSS BETA						
Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	12/13/23	0.29	±	0.17	1.06	±	0.64	No	12.50	±	0.80	46.25	±	2.97	**Yes**
	12/20/23	2.64	±	0.47	9.77	±	1.74	**Yes**	60.20	±	1.70	222.74	±	6.29	**Yes**
DUBOIS	10/03/23	0.99	±	0.34	3.66	±	1.25	No	22.20	±	1.09	82.14	±	4.03	**Yes**
	10/10/23	1.04	±	0.32	3.85	±	1.20	**Yes**	19.80	±	1.01	73.26	±	3.74	**Yes**
	10/17/23	0.37	±	0.27	1.35	±	0.98	No	21.40	±	1.07	79.18	±	3.96	**Yes**
	10/24/23	1.60	±	0.42	5.92	±	1.54	**Yes**	34.10	±	1.34	126.17	±	4.96	**Yes**
	10/31/23	1.31	±	0.37	4.85	±	1.38	**Yes**	31.20	±	1.25	115.44	±	4.63	**Yes**
	11/07/23	1.68	±	0.42	6.22	±	1.54	**Yes**	38.70	±	1.43	143.19	±	5.29	**Yes**
	11/14/23	2.06	±	0.42	7.62	±	1.57	**Yes**	41.20	±	1.46	152.44	±	5.40	**Yes**
	11/21/23	3.15	±	0.54	11.66	±	1.99	**Yes**	43.20	±	1.50	159.84	±	5.55	**Yes**
	11/28/23	1.35	±	0.36	5.00	±	1.35	**Yes**	27.20	±	1.16	100.64	±	4.29	**Yes**
	12/06/23	0.91	±	0.28	3.37	±	1.04	**Yes**	38.30	±	1.33	141.71	±	4.92	**Yes**
	12/13/23	0.95	±	0.32	3.52	±	1.17	**Yes**	13.30	±	0.83	49.21	±	3.06	**Yes**
	12/20/23	1.26	±	0.39	4.66	±	1.43	**Yes**	45.10	±	1.54	166.87	±	5.70	**Yes**
DUBOIS (QA 1)	10/03/23	1.85	±	0.47	6.85	±	1.75	**Yes**	26.30	±	1.38	97.31	±	5.11	**Yes**
	10/10/23	1.28	±	0.38	4.74	±	1.41	**Yes**	19.30	±	1.01	71.41	±	3.74	**Yes**
	10/17/23	0.55	±	0.36	2.02	±	1.32	No	22.40	±	1.08	82.88	±	4.00	**Yes**
	10/24/23	0.99	±	0.31	3.65	±	1.13	**Yes**	33.60	±	1.33	124.32	±	4.92	**Yes**
	10/31/23	1.18	±	0.32	4.37	±	1.20	**Yes**	31.90	±	1.27	118.03	±	4.70	**Yes**
	11/07/23	1.61	±	0.43	5.96	±	1.59	**Yes**	35.90	±	1.39	132.83	±	5.14	**Yes**
	11/14/23	1.60	±	0.43	5.92	±	1.57	**Yes**	33.10	±	1.31	122.47	±	4.85	**Yes**
	11/21/23	2.56	±	0.52	9.47	±	1.94	**Yes**	33.40	±	1.31	123.58	±	4.85	**Yes**
	11/28/23	0.46	±	0.25	1.72	±	0.91	No	22.80	±	1.05	84.36	±	3.89	**Yes**
	12/06/23	1.99	±	0.44	7.36	±	1.64	**Yes**	38.10	±	1.33	140.97	±	4.92	**Yes**
	12/13/23	0.86	±	0.30	3.17	±	1.11	No	13.70	±	0.84	50.69	±	3.09	**Yes**
	12/20/23	1.56	±	0.41	5.77	±	1.51	**Yes**	47.20	±	1.56	174.64	±	5.77	**Yes**
IDAHO FALLS	10/03/23	2.04	±	0.48	7.55	±	1.76	**Yes**	23.30	±	1.13	86.21	±	4.18	**Yes**
	10/10/23	1.52	±	0.39	5.62	±	1.44	**Yes**	22.60	±	1.08	83.62	±	4.00	**Yes**
	10/17/23	0.82	±	0.39	3.05	±	1.44	No	23.20	±	1.08	85.84	±	4.00	**Yes**
	10/24/23	1.91	±	0.47	7.07	±	1.75	**Yes**	37.50	±	1.43	138.75	±	5.29	**Yes**
	10/31/23	1.70	±	0.37	6.29	±	1.37	**Yes**	29.40	±	1.18	108.78	±	4.37	**Yes**
	11/07/23	2.45	±	0.49	9.07	±	1.81	**Yes**	36.50	±	1.37	135.05	±	5.07	**Yes**
	11/14/23	2.25	±	0.44	8.33	±	1.64	**Yes**	35.10	±	1.36	129.87	±	5.03	**Yes**
	11/21/23	2.49	±	0.49	9.21	±	1.83	**Yes**	41.00	±	1.49	151.70	±	5.51	**Yes**
	11/28/23	0.73	±	0.30	2.69	±	1.11	No	30.80	±	1.26	113.96	±	4.66	**Yes**
	12/06/23	2.27	±	0.46	8.40	±	1.72	**Yes**	40.80	±	1.39	150.96	±	5.14	**Yes**
	12/13/23	0.72	±	0.30	2.65	±	1.12	No	13.20	±	0.86	48.84	±	3.17	**Yes**
	12/20/23	1.45	±	0.39	5.37	±	1.45	**Yes**	47.70	±	1.52	176.49	±	5.62	**Yes**
IRC	10/03/23	0.66	±	0.27	2.44	±	1.00	No	16.80	±	0.93	62.16	±	3.46	**Yes**
	10/10/23	0.98	±	0.34	3.64	±	1.26	No	19.60	±	1.03	72.52	±	3.81	**Yes**
	10/17/23	1.37	±	0.39	5.07	±	1.45	**Yes**	23.60	±	1.12	87.32	±	4.14	**Yes**
	10/24/23	1.98	±	0.43	7.33	±	1.58	**Yes**	35.90	±	1.40	132.83	±	5.18	**Yes**
	10/31/23	1.82	±	0.45	6.73	±	1.67	**Yes**	27.10	±	1.21	100.27	±	4.48	**Yes**
	11/07/23	1.50	±	0.40	5.55	±	1.49	**Yes**	29.70	±	1.21	109.89	±	4.48	**Yes**
	11/14/23	0.94	±	0.33	3.49	±	1.21	No	32.20	±	1.28	119.14	±	4.74	**Yes**
	11/21/23	2.65	±	0.54	9.81	±	2.01	**Yes**	40.10	±	1.48	148.37	±	5.48	**Yes**
	11/28/23	1.10	±	0.36	4.07	±	1.34	**Yes**	25.20	±	1.15	93.24	±	4.26	**Yes**
	12/06/23	2.95	±	0.50	10.92	±	1.84	**Yes**	40.00	±	1.41	148.00	±	5.22	**Yes**
	12/13/23	1.18	±	0.34	4.37	±	1.26	**Yes**	16.70	±	0.90	61.79	±	3.32	**Yes**
	12/20/23	2.28	±	0.50	8.44	±	1.85	**Yes**	48.00	±	1.58	177.60	±	5.85	**Yes**
IRC NORTH	10/03/23	2.43	±	0.57	8.99	±	2.09	**Yes**	22.20	±	1.21	82.14	±	4.48	**Yes**
	10/10/23	1.42	±	0.40	5.25	±	1.49	**Yes**	24.00	±	1.19	88.80	±	4.40	**Yes**
	10/17/23	-0.15	±	0.27	-0.54	±	1.00	No	12.60	±	0.87	46.62	±	3.23	**Yes**
	10/24/23	1.47	±	0.40	5.44	±	1.48	**Yes**	36.10	±	1.51	133.57	±	5.59	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location	Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
	10/31/23	1.89 ± 0.46	6.99 ± 1.69	**Yes**	27.10 ± 1.33	100.27 ± 4.92	**Yes**
	11/07/23	0.97 ± 0.36	3.57 ± 1.34	No	40.00 ± 1.50	148.00 ± 5.55	**Yes**
	11/14/23	2.51 ± 0.55	9.29 ± 2.02	**Yes**	34.60 ± 1.41	128.02 ± 5.22	**Yes**
	11/21/23	3.91 ± 0.70	14.47 ± 2.60	**Yes**	37.60 ± 1.54	139.12 ± 5.70	**Yes**
	11/28/23	1.48 ± 0.44	5.48 ± 1.64	**Yes**	26.50 ± 1.26	98.05 ± 4.66	**Yes**
	12/06/23	2.10 ± 0.46	7.77 ± 1.68	**Yes**	43.70 ± 1.57	161.69 ± 5.81	**Yes**
	12/13/23	1.64 ± 0.44	6.07 ± 1.61	**Yes**	16.90 ± 1.00	62.53 ± 3.69	**Yes**
	12/20/23	3.05 ± 0.62	11.29 ± 2.31	**Yes**	47.40 ± 1.71	175.38 ± 6.33	**Yes**
JACKSON, WY	10/03/23	1.67 ± 0.45	6.18 ± 1.65	**Yes**	20.10 ± 1.08	74.37 ± 4.00	**Yes**
	10/10/23	0.67 ± 0.26	2.49 ± 0.97	No	18.30 ± 1.03	67.71 ± 3.81	**Yes**
	10/17/23	0.82 ± 0.33	3.05 ± 1.22	No	22.70 ± 1.11	83.99 ± 4.11	**Yes**
	10/24/23	1.41 ± 0.42	5.22 ± 1.54	**Yes**	32.20 ± 1.34	119.14 ± 4.96	**Yes**
	10/31/23	1.43 ± 0.40	5.29 ± 1.47	**Yes**	26.00 ± 1.16	96.20 ± 4.29	**Yes**
	11/07/23	1.86 ± 0.43	6.88 ± 1.59	**Yes**	30.80 ± 1.32	113.96 ± 4.88	**Yes**
	11/14/23	2.02 ± 0.45	7.47 ± 1.66	**Yes**	29.20 ± 1.22	108.04 ± 4.51	**Yes**
	11/21/23	2.40 ± 0.49	8.88 ± 1.83	**Yes**	40.00 ± 1.45	148.00 ± 5.37	**Yes**
	11/28/23	1.43 ± 0.38	5.29 ± 1.39	**Yes**	28.20 ± 1.26	104.34 ± 4.66	**Yes**
	12/05/23	1.41 ± 0.38	5.22 ± 1.42	**Yes**	31.30 ± 1.35	115.81 ± 5.00	**Yes**
	12/12/23	0.93 ± 0.34	3.43 ± 1.25	No	9.83 ± 0.76	36.37 ± 2.81	**Yes**
	12/19/23	2.34 ± 0.53	8.66 ± 1.94	**Yes**	38.90 ± 1.48	143.93 ± 5.48	**Yes**
SUGAR CITY	10/03/23	1.07 ± 0.33	3.96 ± 1.23	**Yes**	26.00 ± 1.24	96.20 ± 4.59	**Yes**
	10/10/23	1.24 ± 0.39	4.59 ± 1.43	**Yes**	20.20 ± 1.05	74.74 ± 3.89	**Yes**
	10/17/23	0.88 ± 0.33	3.24 ± 1.21	No	22.60 ± 1.08	83.62 ± 4.00	**Yes**
	10/24/23	1.80 ± 0.42	6.66 ± 1.56	**Yes**	30.60 ± 1.24	113.22 ± 4.59	**Yes**
	10/31/23	0.99 ± 0.33	3.66 ± 1.22	**Yes**	26.80 ± 1.15	99.16 ± 4.26	**Yes**
	11/07/23	1.82 ± 0.45	6.73 ± 1.68	**Yes**	35.70 ± 1.38	132.09 ± 5.11	**Yes**
	11/14/23	1.87 ± 0.45	6.92 ± 1.67	**Yes**	29.20 ± 1.22	108.04 ± 4.51	**Yes**
	11/21/23	2.87 ± 0.55	10.62 ± 2.05	**Yes**	41.70 ± 1.46	154.29 ± 5.40	**Yes**
	11/28/23	1.49 ± 0.38	5.51 ± 1.40	**Yes**	31.70 ± 1.24	117.29 ± 4.59	**Yes**
	12/06/23	1.82 ± 0.43	6.73 ± 1.59	**Yes**	39.60 ± 1.38	146.52 ± 5.11	**Yes**
	12/13/23	0.24 ± 0.21	0.89 ± 0.76	No	13.40 ± 0.85	49.58 ± 3.15	**Yes**
	12/20/23	1.93 ± 0.46	7.14 ± 1.70	**Yes**	36.40 ± 1.41	134.68 ± 5.22	**Yes**
ONSITE							
ATR COMPLEX	10/03/23	0.79 ± 0.29	2.90 ± 1.07	No	21.00 ± 1.11	77.70 ± 4.11	**Yes**
	10/10/23	1.07 ± 0.37	3.96 ± 1.37	No	21.30 ± 1.10	78.81 ± 4.07	**Yes**
	10/17/23	0.63 ± 0.30	2.33 ± 1.11	No	22.50 ± 1.10	83.25 ± 4.07	**Yes**
	10/24/23	2.84 ± 0.54	10.51 ± 2.01	**Yes**	31.50 ± 1.31	116.55 ± 4.85	**Yes**
	10/31/23	1.27 ± 0.38	4.70 ± 1.42	**Yes**	28.90 ± 1.24	106.93 ± 4.59	**Yes**
	11/07/23	3.29 ± 0.60	12.17 ± 2.22	**Yes**	48.60 ± 1.61	179.82 ± 5.96	**Yes**
	11/14/23	2.53 ± 0.54	9.36 ± 1.99	**Yes**	37.60 ± 1.43	139.12 ± 5.29	**Yes**
	11/21/23	3.12 ± 0.60	11.54 ± 2.23	**Yes**	37.20 ± 1.44	137.64 ± 5.33	**Yes**
	11/28/23	2.18 ± 0.51	8.07 ± 1.87	**Yes**	31.10 ± 1.32	115.07 ± 4.88	**Yes**
	12/06/23	2.06 ± 0.45	7.62 ± 1.67	**Yes**	38.20 ± 1.36	141.34 ± 5.03	**Yes**
	12/13/23	0.97 ± 0.35	3.57 ± 1.30	No	14.80 ± 0.93	54.76 ± 3.44	**Yes**
	12/20/23	3.14 ± 0.58	11.62 ± 2.14	**Yes**	57.50 ± 1.71	212.75 ± 6.33	**Yes**
CFA	10/03/23	1.59 ± 0.43	5.88 ± 1.58	**Yes**	20.70 ± 1.07	76.59 ± 3.96	**Yes**
	10/10/23	1.19 ± 0.32	4.40 ± 1.20	**Yes**	22.60 ± 1.08	83.62 ± 4.00	**Yes**
	10/17/23	0.93 ± 0.43	3.42 ± 1.61	No	25.30 ± 1.18	93.61 ± 4.37	**Yes**
	10/24/23	0.99 ± 0.33	3.67 ± 1.23	No	30.40 ± 1.27	112.48 ± 4.70	**Yes**
	10/31/23	2.23 ± 0.45	8.25 ± 1.68	**Yes**	26.10 ± 1.13	96.57 ± 4.18	**Yes**
	11/07/23	1.66 ± 0.40	6.14 ± 1.47	**Yes**	49.50 ± 1.60	183.15 ± 5.92	**Yes**
	11/14/23	2.62 ± 0.50	9.69 ± 1.86	**Yes**	37.10 ± 1.36	137.27 ± 5.03	**Yes**
	11/21/23	1.79 ± 0.43	6.62 ± 1.57	**Yes**	33.50 ± 1.31	123.95 ± 4.85	**Yes**
	11/28/23	1.15 ± 0.36	4.26 ± 1.34	**Yes**	35.40 ± 1.32	130.98 ± 4.88	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location		Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			GROSS BETA Result > 3s
		12/06/23	2.09	±	0.42	7.73	±	1.54	**Yes**	44.50	±	1.46	164.65	±	5.40	**Yes**
		12/13/23	0.78	±	0.29	2.90	±	1.08	No	14.30	±	0.87	52.91	±	3.21	**Yes**
		12/20/23	2.03	±	0.46	7.51	±	1.70	**Yes**	59.40	±	1.70	219.78	±	6.29	**Yes**
EBR-I		10/03/23	1.61	±	0.41	5.96	±	1.50	**Yes**	20.00	±	1.04	74.00	±	3.85	**Yes**
		10/10/23	0.75	±	0.30	2.78	±	1.10	No	21.00	±	1.04	77.70	±	3.85	**Yes**
		10/17/23	0.66	±	0.36	2.43	±	1.33	No	25.20	±	1.29	93.24	±	4.77	**Yes**
		10/24/23	0.67	±	0.26	2.47	±	0.97	No	39.90	±	1.47	147.63	±	5.44	**Yes**
		10/31/23	1.72	±	0.43	6.36	±	1.58	**Yes**	29.50	±	1.22	109.15	±	4.51	**Yes**
		11/07/23	2.12	±	0.47	7.84	±	1.72	**Yes**	46.70	±	1.49	172.79	±	5.51	**Yes**
		11/14/23	1.84	±	0.43	6.81	±	1.60	**Yes**	35.40	±	1.31	130.98	±	4.85	**Yes**
		11/21/23	1.89	±	0.45	6.99	±	1.65	**Yes**	34.60	±	1.33	128.02	±	4.92	**Yes**
		11/28/23	0.86	±	0.28	3.20	±	1.04	**Yes**	35.60	±	1.31	131.72	±	4.85	**Yes**
		12/06/23	2.39	±	0.46	8.84	±	1.70	**Yes**	43.30	±	1.35	160.21	±	5.00	**Yes**
		12/13/23	1.27	±	0.32	4.70	±	1.20	**Yes**	14.60	±	0.86	54.02	±	3.17	**Yes**
		12/20/23	2.94	±	0.49	10.88	±	1.82	**Yes**	64.40	±	1.76	238.28	±	6.51	**Yes**
EFS	a	10/03/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
	a	10/10/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
	a	10/17/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
		10/24/23	1.54	±	0.39	5.70	±	1.45	**Yes**	33.30	±	1.29	123.21	±	4.77	**Yes**
	a	10/31/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
		11/07/23	3.08	±	0.58	11.40	±	2.16	**Yes**	48.80	±	1.61	180.56	±	5.96	**Yes**
		11/14/23	1.74	±	0.43	6.44	±	1.60	**Yes**	35.60	±	1.33	131.72	±	4.92	**Yes**
		11/21/23	3.49	±	0.61	12.91	±	2.26	**Yes**	45.60	±	1.53	168.72	±	5.66	**Yes**
		11/28/23	1.32	±	0.39	4.88	±	1.44	**Yes**	33.70	±	1.32	124.69	±	4.88	**Yes**
		12/06/23	2.41	±	0.47	8.92	±	1.72	**Yes**	46.30	±	1.45	171.31	±	5.37	**Yes**
		12/13/23	2.17	±	0.48	8.03	±	1.78	**Yes**	17.30	±	0.96	64.01	±	3.54	**Yes**
		12/20/23	1.73	±	0.43	6.40	±	1.58	**Yes**	62.10	±	1.73	229.77	±	6.40	**Yes**
GATE 4		10/03/23	0.39	±	0.24	1.43	±	0.87	No	23.80	±	1.14	88.06	±	4.22	**Yes**
		10/10/23	1.06	±	0.33	3.92	±	1.21	**Yes**	20.40	±	1.03	75.48	±	3.81	**Yes**
		10/17/23	0.73	±	0.33	2.70	±	1.21	No	25.80	±	1.20	95.46	±	4.44	**Yes**
		10/24/23	2.45	±	0.51	9.07	±	1.90	**Yes**	36.10	±	1.39	133.57	±	5.14	**Yes**
		10/31/23	1.62	±	0.43	5.99	±	1.58	**Yes**	28.10	±	1.23	103.97	±	4.55	**Yes**
		11/07/23	4.41	±	0.65	16.32	±	2.41	**Yes**	53.70	±	1.66	198.69	±	6.14	**Yes**
		11/14/23	1.72	±	0.40	6.36	±	1.48	**Yes**	41.10	±	1.49	152.07	±	5.51	**Yes**
		11/21/23	2.79	±	0.52	10.32	±	1.94	**Yes**	52.80	±	1.70	195.36	±	6.29	**Yes**
		11/28/23	1.55	±	0.39	5.74	±	1.45	**Yes**	33.70	±	1.30	124.69	±	4.81	**Yes**
		12/06/23	2.11	±	0.42	7.81	±	1.55	**Yes**	64.70	±	1.76	239.39	±	6.51	**Yes**
		12/13/23	0.22	±	0.21	0.83	±	0.78	No	14.90	±	0.93	55.13	±	3.43	**Yes**
		12/20/23	2.22	±	0.50	8.21	±	1.86	**Yes**	64.90	±	1.86	240.13	±	6.88	**Yes**
HIGHWAY 26 REST AREA		10/03/23	1.78	±	0.45	6.59	±	1.68	**Yes**	20.70	±	1.09	76.59	±	4.03	**Yes**
		10/10/23	0.82	±	0.30	3.03	±	1.11	No	22.60	±	1.10	83.62	±	4.07	**Yes**
		10/17/23	0.17	±	0.32	0.61	±	1.19	No	23.80	±	1.15	88.06	±	4.26	**Yes**
		10/24/23	1.62	±	0.44	5.99	±	1.64	**Yes**	37.30	±	1.44	138.01	±	5.33	**Yes**
		10/31/23	1.16	±	0.33	4.29	±	1.24	**Yes**	30.00	±	1.27	111.00	±	4.70	**Yes**
		11/07/23	2.14	±	0.46	7.92	±	1.69	**Yes**	50.90	±	1.60	188.33	±	5.92	**Yes**
		11/14/23	1.52	±	0.37	5.62	±	1.38	**Yes**	34.20	±	1.35	126.54	±	5.00	**Yes**
		11/21/23	2.80	±	0.85	10.36	±	3.14	**Yes**	71.40	±	3.04	264.18	±	11.25	**Yes**
		11/28/23	1.63	±	0.39	6.03	±	1.45	**Yes**	35.60	±	1.38	131.72	±	5.11	**Yes**
		12/06/23	2.07	±	0.44	7.66	±	1.62	**Yes**	34.60	±	1.24	128.02	±	4.59	**Yes**
		12/13/23	0.79	±	0.27	2.92	±	1.00	No	15.90	±	0.92	58.83	±	3.42	**Yes**
		12/20/23	1.79	±	0.40	6.62	±	1.49	**Yes**	49.80	±	1.59	184.26	±	5.88	**Yes**
INTEC (NE CORNER)		10/03/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
	a	10/10/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No
	a	10/17/23		±		0.00	±	0.00	No		±		0.00	±	0.00	No

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location		Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
	a	10/24/23	±	0.00 ± 0.00	No	±	0.00 ± 0.00	No
	a	10/31/23	±	0.00 ± 0.00	No	±	0.00 ± 0.00	No
	a	11/07/23	±	0.00 ± 0.00	No	±	0.00 ± 0.00	No
	a	11/14/23	±	0.00 ± 0.00	No	±	0.00 ± 0.00	No
	a	11/21/23	±	0.00 ± 0.00	No	±	0.00 ± 0.00	No
		11/28/23	1.75 ± 0.45	6.48 ± 1.65	**Yes**	36.20 ± 1.53	133.94 ± 5.66	**Yes**
		12/06/23	3.09 ± 0.61	11.43 ± 2.24	**Yes**	47.20 ± 1.64	174.64 ± 6.07	**Yes**
		12/13/23	0.38 ± 0.20	1.39 ± 0.73	No	15.20 ± 0.90	56.24 ± 3.31	**Yes**
		12/20/23	2.12 ± 0.42	7.84 ± 1.55	**Yes**	61.10 ± 1.69	226.07 ± 6.25	**Yes**
INTEC (QA 2)		10/03/23	1.28 ± 0.39	4.74 ± 1.44	**Yes**	23.10 ± 1.12	85.47 ± 4.14	**Yes**
		10/10/23	1.06 ± 0.31	3.92 ± 1.16	**Yes**	23.40 ± 1.12	86.58 ± 4.14	**Yes**
		10/17/23	0.68 ± 0.29	2.50 ± 1.09	No	22.50 ± 1.06	83.25 ± 3.92	**Yes**
		10/24/23	1.92 ± 0.46	7.10 ± 1.71	**Yes**	34.10 ± 1.33	126.17 ± 4.92	**Yes**
		10/31/23	1.48 ± 0.40	5.48 ± 1.47	**Yes**	30.40 ± 1.23	112.48 ± 4.55	**Yes**
		11/07/23	2.04 ± 0.43	7.55 ± 1.59	**Yes**	49.20 ± 1.59	182.04 ± 5.88	**Yes**
		11/14/23	1.00 ± 0.33	3.70 ± 1.21	**Yes**	37.00 ± 1.36	136.90 ± 5.03	**Yes**
		11/21/23	3.75 ± 0.59	13.88 ± 2.18	**Yes**	48.40 ± 1.54	179.08 ± 5.70	**Yes**
		11/28/23	1.07 ± 0.32	3.96 ± 1.18	**Yes**	34.10 ± 1.32	126.17 ± 4.88	**Yes**
		12/06/23	2.04 ± 0.43	7.55 ± 1.58	**Yes**	47.60 ± 1.45	176.12 ± 5.37	**Yes**
		12/13/23	1.08 ± 0.35	4.00 ± 1.30	**Yes**	16.60 ± 0.93	61.42 ± 3.46	**Yes**
		12/20/23	2.06 ± 0.45	7.62 ± 1.68	**Yes**	56.50 ± 1.63	209.05 ± 6.03	**Yes**
INTEC (WEST SIDE)		10/03/23	1.43 ± 0.39	5.29 ± 1.44	**Yes**	19.60 ± 1.01	72.52 ± 3.74	**Yes**
		10/10/23	1.13 ± 0.34	4.18 ± 1.24	**Yes**	23.00 ± 1.08	85.10 ± 4.00	**Yes**
		10/17/23	0.06 ± 0.29	0.22 ± 1.08	No	23.30 ± 1.11	86.21 ± 4.11	**Yes**
		10/24/23	2.33 ± 0.52	8.62 ± 1.91	**Yes**	36.70 ± 1.42	135.79 ± 5.25	**Yes**
		10/31/23	1.61 ± 0.38	5.96 ± 1.40	**Yes**	28.60 ± 1.22	105.82 ± 4.51	**Yes**
		11/07/23	2.99 ± 0.55	11.06 ± 2.05	**Yes**	47.60 ± 1.60	176.12 ± 5.92	**Yes**
		11/14/23	1.86 ± 0.40	6.88 ± 1.48	**Yes**	35.30 ± 1.34	130.61 ± 4.96	**Yes**
		11/21/23	2.90 ± 0.52	10.73 ± 1.91	**Yes**	47.40 ± 1.57	175.38 ± 5.81	**Yes**
		11/28/23	1.42 ± 0.35	5.25 ± 1.31	**Yes**	34.00 ± 1.29	125.80 ± 4.77	**Yes**
		12/06/23	2.84 ± 0.54	10.51 ± 1.98	**Yes**	44.50 ± 1.47	164.65 ± 5.44	**Yes**
		12/13/23	0.47 ± 0.22	1.73 ± 0.81	No	15.70 ± 0.92	58.09 ± 3.41	**Yes**
		12/20/23	1.89 ± 0.41	6.99 ± 1.50	**Yes**	60.20 ± 1.72	222.74 ± 6.36	**Yes**
MAIN GATE		10/03/23	1.59 ± 0.38	5.88 ± 1.41	**Yes**	23.50 ± 1.13	86.95 ± 4.18	**Yes**
		10/10/23	1.22 ± 0.36	4.51 ± 1.34	**Yes**	19.70 ± 0.99	72.89 ± 3.66	**Yes**
		10/17/23	0.56 ± 0.36	2.05 ± 1.35	No	22.90 ± 1.10	84.73 ± 4.07	**Yes**
		10/24/23	1.53 ± 0.38	5.66 ± 1.39	**Yes**	38.90 ± 1.45	143.93 ± 5.37	**Yes**
		10/31/23	1.01 ± 0.30	3.74 ± 1.12	**Yes**	33.60 ± 1.30	124.32 ± 4.81	**Yes**
		11/07/23	3.21 ± 0.59	11.88 ± 2.17	**Yes**	46.90 ± 1.56	173.53 ± 5.77	**Yes**
		11/14/23	1.48 ± 0.41	5.48 ± 1.51	**Yes**	38.30 ± 1.39	141.71 ± 5.14	**Yes**
		11/21/23	2.02 ± 0.47	7.47 ± 1.72	**Yes**	29.10 ± 1.21	107.67 ± 4.48	**Yes**
		11/28/23	1.88 ± 0.46	6.96 ± 1.68	**Yes**	32.00 ± 1.28	118.40 ± 4.74	**Yes**
		12/06/23	1.97 ± 0.40	7.29 ± 1.48	**Yes**	52.50 ± 1.56	194.25 ± 5.77	**Yes**
		12/13/23	0.79 ± 0.31	2.90 ± 1.14	No	16.00 ± 0.92	59.20 ± 3.39	**Yes**
		12/20/23	2.39 ± 0.48	8.84 ± 1.76	**Yes**	61.40 ± 1.71	227.18 ± 6.33	**Yes**
MFC NORTH		10/03/23	1.26 ± 0.38	4.66 ± 1.40	**Yes**	18.90 ± 1.01	69.93 ± 3.74	**Yes**
		10/10/23	0.58 ± 0.25	2.16 ± 0.92	No	20.60 ± 1.08	76.22 ± 4.00	**Yes**
		10/17/23	0.80 ± 0.41	2.94 ± 1.51	No	23.20 ± 1.12	85.84 ± 4.14	**Yes**
		10/24/23	2.54 ± 0.53	9.40 ± 1.96	**Yes**	33.90 ± 1.38	125.43 ± 5.11	**Yes**
		10/31/23	1.65 ± 0.40	6.11 ± 1.47	**Yes**	30.60 ± 1.23	113.22 ± 4.55	**Yes**
		11/07/23	1.37 ± 0.36	5.07 ± 1.32	**Yes**	34.10 ± 1.32	126.17 ± 4.88	**Yes**
		11/14/23	1.87 ± 0.44	6.92 ± 1.62	**Yes**	38.00 ± 1.40	140.60 ± 5.18	**Yes**
		11/21/23	1.71 ± 0.42	6.33 ± 1.55	**Yes**	31.20 ± 1.27	115.44 ± 4.70	**Yes**
		11/28/23	1.79 ± 0.42	6.62 ± 1.54	**Yes**	26.90 ± 1.15	99.53 ± 4.26	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location	Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
	12/06/23	1.78 ± 0.41	6.59 ± 1.51	Yes	36.60 ± 1.28	135.42 ± 4.74	Yes
	12/13/23	1.40 ± 0.38	5.18 ± 1.41	Yes	15.50 ± 0.90	57.35 ± 3.33	Yes
	12/20/23	2.69 ± 0.51	9.95 ± 1.87	Yes	53.40 ± 1.60	197.58 ± 5.92	Yes
MFC SOUTH	10/03/23	1.13 ± 0.32	4.18 ± 1.19	Yes	21.50 ± 1.07	79.55 ± 3.96	Yes
	10/10/23	1.74 ± 0.45	6.44 ± 1.65	Yes	21.60 ± 1.08	79.92 ± 4.00	Yes
	10/17/23	1.12 ± 0.36	4.14 ± 1.32	Yes	24.60 ± 1.11	91.02 ± 4.11	Yes
	10/24/23	1.17 ± 0.36	4.33 ± 1.34	Yes	32.40 ± 1.32	119.88 ± 4.88	Yes
	10/31/23	1.10 ± 0.35	4.07 ± 1.29	Yes	28.30 ± 1.19	104.71 ± 4.40	Yes
	11/07/23	2.49 ± 0.52	9.21 ± 1.92	Yes	38.70 ± 1.42	143.19 ± 5.25	Yes
	11/14/23	1.81 ± 0.45	6.70 ± 1.67	Yes	33.90 ± 1.33	125.43 ± 4.92	Yes
	11/21/23	3.92 ± 0.65	14.50 ± 2.39	Yes	43.90 ± 1.51	162.43 ± 5.59	Yes
	11/28/23	1.39 ± 0.37	5.14 ± 1.35	Yes	29.90 ± 1.19	110.63 ± 4.40	Yes
	12/06/23	1.69 ± 0.41	6.25 ± 1.51	Yes	36.60 ± 1.31	135.42 ± 4.85	Yes
	12/13/23	0.24 ± 0.21	0.90 ± 0.77	No	14.90 ± 0.90	55.13 ± 3.32	Yes
	12/20/23	2.40 ± 0.48	8.88 ± 1.79	Yes	51.10 ± 1.59	189.07 ± 5.88	Yes
NRF	10/03/23	1.23 ± 0.36	4.55 ± 1.32	Yes	22.20 ± 1.08	82.14 ± 4.00	Yes
	10/10/23	1.06 ± 0.35	3.92 ± 1.28	Yes	22.90 ± 1.09	84.73 ± 4.03	Yes
	10/17/23	0.94 ± 0.34	3.49 ± 1.27	No	27.20 ± 1.20	100.64 ± 4.44	Yes
	10/24/23	1.22 ± 0.33	4.51 ± 1.23	Yes	39.40 ± 1.42	145.78 ± 5.25	Yes
	10/31/23	2.29 ± 0.49	8.47 ± 1.80	Yes	29.40 ± 1.22	108.78 ± 4.51	Yes
	11/07/23	1.92 ± 0.46	7.10 ± 1.69	Yes	50.70 ± 1.58	187.59 ± 5.85	Yes
	11/14/23	1.80 ± 0.44	6.66 ± 1.61	Yes	38.10 ± 1.38	140.97 ± 5.11	Yes
	11/21/23	2.65 ± 0.52	9.81 ± 1.93	Yes	49.70 ± 1.58	183.89 ± 5.85	Yes
	11/28/23	1.39 ± 0.39	5.14 ± 1.42	Yes	36.10 ± 1.31	133.57 ± 4.85	Yes
	12/06/23	2.02 ± 0.41	7.47 ± 1.52	Yes	48.10 ± 1.52	177.97 ± 5.62	Yes
	12/13/23	0.69 ± 0.28	2.55 ± 1.02	No	14.40 ± 0.87	53.28 ± 3.22	Yes
	12/20/23	2.82 ± 0.53	3.89 ± 1.27	Yes	56.90 ± 1.64	210.53 ± 6.07	Yes
PBF	10/03/23	1.42 ± 0.44	5.25 ± 1.62	Yes	20.40 ± 1.16	75.48 ± 4.29	Yes
	10/10/23	1.59 ± 0.39	5.88 ± 1.46	Yes	22.30 ± 1.07	82.51 ± 3.96	Yes
	10/17/23	0.70 ± 0.31	2.57 ± 1.16	No	23.60 ± 1.12	87.32 ± 4.14	Yes
	10/24/23	2.22 ± 0.49	8.21 ± 1.81	Yes	39.80 ± 1.45	147.26 ± 5.37	Yes
	10/31/23	0.81 ± 0.30	3.01 ± 1.11	No	31.00 ± 1.23	114.70 ± 4.55	Yes
	11/07/23	2.07 ± 0.45	7.66 ± 1.67	Yes	48.60 ± 1.57	179.82 ± 5.81	Yes
	11/14/23	1.12 ± 0.31	4.14 ± 1.16	Yes	33.10 ± 1.29	122.47 ± 4.77	Yes
	11/21/23	1.25 ± 0.37	4.63 ± 1.35	Yes	41.60 ± 1.49	153.92 ± 5.51	Yes
	11/28/23	1.80 ± 0.42	6.66 ± 1.55	Yes	29.70 ± 1.21	109.89 ± 4.48	Yes
	12/06/23	2.81 ± 0.52	10.40 ± 1.94	Yes	44.30 ± 1.45	163.91 ± 5.37	Yes
	12/13/23	0.46 ± 0.22	1.72 ± 0.80	No	15.90 ± 0.92	58.83 ± 3.41	Yes
	12/20/23	2.19 ± 0.48	8.10 ± 1.79	Yes	59.20 ± 1.72	219.04 ± 6.36	Yes
RHLLW	10/03/23	1.43 ± 0.36	5.29 ± 1.31	Yes	22.90 ± 1.09	84.73 ± 4.03	Yes
	10/10/23	0.78 ± 0.31	2.90 ± 1.15	No	21.30 ± 1.05	78.81 ± 3.89	Yes
	10/17/23	1.01 ± 0.34	3.74 ± 1.25	No	25.10 ± 1.11	92.87 ± 4.11	Yes
	10/24/23	1.88 ± 0.45	6.96 ± 1.67	Yes	39.10 ± 1.41	144.67 ± 5.22	Yes
	10/31/23	1.20 ± 0.37	4.44 ± 1.35	Yes	47.30 ± 1.53	175.01 ± 5.66	Yes
	11/07/23	2.20 ± 0.46	8.14 ± 1.69	Yes	50.20 ± 1.57	185.74 ± 5.81	Yes
	11/14/23	1.64 ± 0.38	6.07 ± 1.41	Yes	37.60 ± 1.39	139.12 ± 5.14	Yes
	11/21/23	2.12 ± 0.46	7.84 ± 1.69	Yes	39.60 ± 1.46	146.52 ± 5.40	Yes
	11/28/23	1.53 ± 0.37	5.66 ± 1.37	Yes	34.00 ± 1.31	125.80 ± 4.85	Yes
	12/06/23	1.94 ± 0.43	7.18 ± 1.60	Yes	35.70 ± 1.27	132.09 ± 4.70	Yes
	12/13/23	0.98 ± 0.30	3.64 ± 1.12	Yes	15.20 ± 0.92	56.24 ± 3.40	Yes
	12/20/23	1.74 ± 0.39	6.44 ± 1.45	Yes	63.80 ± 1.77	236.06 ± 6.55	Yes
RWMC	10/03/23	1.76 ± 0.39	6.51 ± 1.45	Yes	18.20 ± 0.99	67.34 ± 3.65	Yes
	10/10/23	49.40 ± 2.25	182.78 ± 8.33	Yes	23.10 ± 1.18	85.47 ± 4.37	Yes
	10/17/23	1.45 ± 0.40	5.37 ± 1.49	Yes	23.80 ± 1.12	88.06 ± 4.14	Yes

Table C-1. Weekly gross alpha and gross beta concentrations in air.

Sampling Group and Location	Sampling Date	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS ALPHA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS ALPHA Result > 3s	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)	GROSS BETA Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)	GROSS BETA Result > 3s
	10/24/23	1.38 ± 0.38	5.11 ± 1.41	**Yes**	40.20 ± 1.43	148.74 ± 5.29	**Yes**
	10/31/23	2.18 ± 0.48	8.07 ± 1.76	**Yes**	24.60 ± 1.12	91.02 ± 4.14	**Yes**
	11/07/23	3.28 ± 0.56	12.14 ± 2.09	**Yes**	48.20 ± 1.51	178.34 ± 5.59	**Yes**
	11/14/23	2.10 ± 0.48	7.77 ± 1.78	**Yes**	34.60 ± 1.34	128.02 ± 4.96	**Yes**
	11/21/23	1.73 ± 0.45	6.40 ± 1.65	**Yes**	32.20 ± 1.31	119.14 ± 4.85	**Yes**
	11/28/23	0.95 ± 0.34	3.51 ± 1.26	No	31.80 ± 1.30	117.66 ± 4.81	**Yes**
	12/06/23	2.58 ± 0.47	9.55 ± 1.75	**Yes**	45.40 ± 1.41	167.98 ± 5.22	**Yes**
	12/13/23	0.89 ± 0.32	3.29 ± 1.20	No	15.70 ± 0.91	58.09 ± 3.37	**Yes**
	12/20/23	2.23 ± 0.49	8.25 ± 1.82	**Yes**	58.40 ± 1.73	216.08 ± 6.40	**Yes**
RWMC (QA 3)	10/03/23	3.30 ± 0.56	12.21 ± 2.07	**Yes**	19.40 ± 1.01	71.78 ± 3.74	**Yes**
	10/10/23	2.47 ± 0.52	9.14 ± 1.94	**Yes**	23.70 ± 1.14	87.69 ± 4.22	**Yes**
	10/17/23	1.32 ± 0.47	4.88 ± 1.75	No	23.60 ± 1.14	87.32 ± 4.22	**Yes**
	10/24/23	2.91 ± 0.55	10.77 ± 2.03	**Yes**	35.50 ± 1.39	131.35 ± 5.14	**Yes**
	10/31/23	1.49 ± 0.40	5.51 ± 1.46	**Yes**	30.20 ± 1.27	111.74 ± 4.70	**Yes**
	11/07/23	2.64 ± 0.54	9.77 ± 2.00	**Yes**	47.00 ± 1.57	173.90 ± 5.81	**Yes**
	11/14/23	1.09 ± 0.36	4.03 ± 1.32	**Yes**	33.50 ± 1.33	123.95 ± 4.92	**Yes**
	11/21/23	1.95 ± 0.45	7.22 ± 1.66	**Yes**	35.40 ± 1.33	130.98 ± 4.92	**Yes**
	11/28/23	1.55 ± 0.42	5.74 ± 1.55	**Yes**	32.30 ± 1.30	119.51 ± 4.81	**Yes**
	12/06/23	2.27 ± 0.46	8.40 ± 1.69	**Yes**	43.50 ± 1.38	160.95 ± 5.11	**Yes**
	12/13/23	0.49 ± 0.25	1.81 ± 0.92	No	16.90 ± 0.92	62.53 ± 3.40	**Yes**
	12/20/23	2.49 ± 0.47	9.21 ± 1.72	**Yes**	60.90 ± 1.74	225.33 ± 6.44	**Yes**
RWMC SOUTH	10/03/23	1.11 ± 0.35	4.11 ± 1.31	**Yes**	20.10 ± 1.02	74.37 ± 3.77	**Yes**
	10/10/23	1.22 ± 0.33	4.51 ± 1.24	**Yes**	25.50 ± 1.17	94.35 ± 4.33	**Yes**
	10/17/23	1.58 ± 0.49	5.85 ± 1.82	**Yes**	23.00 ± 1.11	85.10 ± 4.11	**Yes**
	10/24/23	1.94 ± 0.45	7.18 ± 1.65	**Yes**	37.70 ± 1.38	139.49 ± 5.11	**Yes**
	10/31/23	1.43 ± 0.37	5.29 ± 1.36	**Yes**	29.60 ± 1.19	109.52 ± 4.40	**Yes**
	11/07/23	2.04 ± 0.41	7.55 ± 1.53	**Yes**	49.70 ± 1.53	183.89 ± 5.66	**Yes**
	11/14/23	1.26 ± 0.36	4.66 ± 1.33	**Yes**	36.20 ± 1.34	133.94 ± 4.96	**Yes**
	11/21/23	1.82 ± 0.41	6.73 ± 1.52	**Yes**	38.00 ± 1.34	140.60 ± 4.96	**Yes**
	11/28/23	1.41 ± 0.37	5.22 ± 1.37	**Yes**	33.70 ± 1.28	124.69 ± 4.74	**Yes**
	12/06/23	2.96 ± 0.50	10.95 ± 1.86	**Yes**	43.70 ± 1.35	161.69 ± 5.00	**Yes**
	12/13/23	0.88 ± 0.30	3.27 ± 1.12	No	16.40 ± 0.89	60.68 ± 3.29	**Yes**
	12/20/23	1.73 ± 0.40	6.40 ± 1.49	**Yes**	64.40 ± 1.72	238.28 ± 6.36	**Yes**
SMC	10/03/23	1.72 ± 0.44	6.36 ± 1.62	**Yes**	23.20 ± 1.12	85.84 ± 4.14	**Yes**
	10/10/23	0.72 ± 0.28	2.65 ± 1.04	No	21.00 ± 1.06	77.70 ± 3.92	**Yes**
	10/17/23	0.27 ± 0.34	1.01 ± 1.26	No	22.30 ± 1.12	82.51 ± 4.14	**Yes**
	10/24/23	1.58 ± 0.43	5.85 ± 1.60	**Yes**	30.80 ± 1.30	113.96 ± 4.81	**Yes**
	10/31/23	0.70 ± 0.26	2.59 ± 0.96	No	28.00 ± 1.20	103.60 ± 4.44	**Yes**
	11/07/23	1.73 ± 0.42	6.40 ± 1.54	**Yes**	48.40 ± 1.57	179.08 ± 5.81	**Yes**
	11/14/23	1.79 ± 0.40	6.62 ± 1.49	**Yes**	38.30 ± 1.43	141.71 ± 5.29	**Yes**
	11/21/23	2.07 ± 0.46	7.66 ± 1.69	**Yes**	50.50 ± 1.66	186.85 ± 6.14	**Yes**
	11/28/23	1.39 ± 0.39	5.14 ± 1.44	**Yes**	31.20 ± 1.25	115.44 ± 4.63	**Yes**
	12/06/23	2.73 ± 0.49	10.10 ± 1.82	**Yes**	58.90 ± 1.63	217.93 ± 6.03	**Yes**
	12/13/23	0.80 ± 0.31	2.96 ± 1.16	No	14.10 ± 0.87	52.17 ± 3.23	**Yes**
	12/20/23	2.69 ± 0.54	9.95 ± 2.01	**Yes**	58.60 ± 1.75	216.82 ± 6.48	**Yes**
VAN BUREN	10/03/23	0.91 ± 0.30	3.38 ± 1.11	**Yes**	22.60 ± 1.12	83.62 ± 4.14	**Yes**
	10/10/23	1.67 ± 0.44	6.18 ± 1.64	**Yes**	23.20 ± 1.13	85.84 ± 4.18	**Yes**
	10/17/23	0.06 ± 0.30	0.23 ± 1.11	No	22.50 ± 1.11	83.25 ± 4.11	**Yes**
	10/24/23	1.32 ± 0.36	4.88 ± 1.33	**Yes**	35.50 ± 1.41	131.35 ± 5.22	**Yes**
	10/31/23	1.25 ± 0.34	4.63 ± 1.27	**Yes**	30.90 ± 1.29	114.33 ± 4.77	**Yes**
	11/07/23	2.45 ± 0.51	9.07 ± 1.89	**Yes**	45.20 ± 1.52	167.24 ± 5.62	**Yes**
	11/14/23	2.28 ± 0.51	8.44 ± 1.88	**Yes**	33.30 ± 1.34	123.21 ± 4.96	**Yes**
	11/21/23	2.72 ± 0.56	10.06 ± 2.06	**Yes**	35.10 ± 1.38	129.87 ± 5.11	**Yes**
	11/28/23	1.09 ± 0.36	4.03 ± 1.32	**Yes**	31.40 ± 1.27	116.18 ± 4.70	**Yes**

Table C-1. Weekly gross alpha and gross beta concentrations in air.

		GROSS ALPHA							GROSS BETA						
Sampling Group and Location	**Sampling Date**	**Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)**			**Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)**			**Result > 3s**	**Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)**			**Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)**			**Result > 3s**
	12/06/23	3.24	±	0.55	11.99	±	2.03	**Yes**	48.50	±	1.47	179.45	±	5.44	**Yes**
	12/13/23	0.85	±	0.31	3.16	±	1.14	No	15.10	±	0.89	55.87	±	3.27	**Yes**
	12/20/23	2.58	±	0.50	9.55	±	1.85	**Yes**	53.90	±	1.63	199.43	±	6.03	**Yes**
VAN BUREN (QA 4)	10/03/23	1.07	±	0.35	3.96	±	1.28	**Yes**	21.30	±	1.06	78.81	±	3.92	**Yes**
	10/10/23	0.61	±	0.26	2.27	±	0.97	No	21.90	±	1.07	81.03	±	3.96	**Yes**
	10/17/23	0.95	±	0.35	3.51	±	1.28	No	24.10	±	1.13	89.17	±	4.18	**Yes**
	10/24/23	1.53	±	0.41	5.66	±	1.52	**Yes**	37.20	±	1.41	137.64	±	5.22	**Yes**
	10/31/23	1.03	±	0.34	3.81	±	1.25	**Yes**	27.60	±	1.18	102.12	±	4.37	**Yes**
	11/07/23	2.05	±	0.44	7.59	±	1.62	**Yes**	50.10	±	1.55	185.37	±	5.74	**Yes**
	11/14/23	1.16	±	0.33	4.29	±	1.20	**Yes**	37.80	±	1.41	139.86	±	5.22	**Yes**
	11/21/23	1.41	±	0.38	5.22	±	1.41	**Yes**	28.20	±	1.23	104.34	±	4.55	**Yes**
	11/28/23	1.64	±	0.39	6.07	±	1.45	**Yes**	34.00	±	1.27	125.80	±	4.70	**Yes**
	12/06/23	2.62	±	0.48	9.69	±	1.78	**Yes**	44.10	±	1.37	163.17	±	5.07	**Yes**
	12/13/23	0.89	±	0.28	3.30	±	1.02	**Yes**	15.60	±	0.88	57.72	±	3.27	**Yes**
	12/20/23	1.85	±	0.44	6.85	±	1.64	**Yes**	60.10	±	1.71	222.37	±	6.33	**Yes**

a. Invalid sample identified in red

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
BOUNDARY								
ARCO	10/03/23	-206.51	±	232.84	-764.09	±	861.51	No
	10/10/23	-154.54	±	215.85	-571.80	±	798.65	No
	10/17/23	-129.28	±	232.77	-478.34	±	861.25	No
	10/24/23	22.41	±	492.71	82.90	±	1823.03	No
	10/31/23	-242.18	±	212.28	-896.07	±	785.44	No
	11/07/23	-65.66	±	514.31	-242.93	±	1902.95	No
	11/14/23	36.54	±	276.36	135.21	±	1022.53	No
	11/21/23	19.73	±	200.85	73.00	±	743.15	No
	11/28/23	345.56	±	203.73	1278.57	±	753.80	No
	12/06/23	-166.66	±	177.91	-616.64	±	658.27	No
	12/13/23	-212.82	±	278.31	-787.43	±	1029.75	No
	12/20/23	-45.84	±	126.59	-169.60	±	468.38	No
ATOMIC CITY	10/03/23	-286.22	±	283.69	-1059.01	±	1049.65	No
	10/10/23	-79.88	±	227.94	-295.54	±	843.38	No
	10/17/23	94.59	±	220.59	350.00	±	816.18	No
	10/24/23	-119.34	±	222.08	-441.56	±	821.70	No
	10/31/23	-269.15	±	258.80	-995.86	±	957.56	No
	11/07/23	-254.75	±	226.48	-942.58	±	837.98	No
	11/14/23	396.46	±	274.66	1466.90	±	1016.24	No
	11/21/23	-134.57	±	203.67	-497.91	±	753.58	No
	11/28/23	-256.39	±	229.38	-948.64	±	848.71	No
	12/06/23	17.55	±	172.33	64.93	±	637.62	No
	12/13/23	-107.81	±	206.03	-398.90	±	762.31	No
	12/20/23	-171.84	±	162.63	-635.81	±	601.73	No
BLUE DOME	10/03/23	158.48	±	211.51	586.38	±	782.59	No
	10/10/23	168.00	±	201.75	621.60	±	746.48	No
	10/17/23	-298.13	±	282.54	-1103.08	±	1045.40	No
	10/24/23	-428.07	±	397.08	-1583.86	±	1469.20	No
	10/31/23	206.00	±	180.30	762.20	±	667.11	No
	11/07/23	-257.66	±	231.40	-953.34	±	856.18	No
	11/14/23	-160.53	±	236.30	-593.96	±	874.31	No
	11/21/23	-153.03	±	245.86	-566.21	±	909.68	No
	11/28/23	44.60	±	180.93	165.03	±	669.44	No
	12/06/23	-251.12	±	237.78	-929.14	±	879.79	No
	12/13/23	26.64	±	209.81	98.58	±	776.30	No
	12/20/23	10.69	±	117.37	39.55	±	434.27	No
FAA TOWER	10/03/23	3.40	±	245.70	12.59	±	909.09	No
	10/10/23	-292.06	±	271.05	-1080.62	±	1002.89	No
	10/17/23	-266.92	±	251.47	-987.60	±	930.44	No
	10/24/23	-732.13	±	598.21	-2708.88	±	2213.38	No
	10/31/23	-166.55	±	188.80	-616.24	±	698.56	No
	11/07/23	-260.95	±	289.23	-965.52	±	1070.15	No
	11/14/23	-6.26	±	215.24	-23.15	±	796.39	No
	11/21/23	-15.93	±	203.08	-58.96	±	751.40	No
	11/28/23	-98.84	±	206.84	-365.70	±	765.31	No
	12/06/23	68.52	±	169.86	253.52	±	628.48	No
	12/13/23	335.11	±	197.07	1239.91	±	729.16	No
	12/20/23	-159.00	±	121.95	-588.30	±	451.22	No
HOWE	10/03/23	-244.53	±	245.25	-904.76	±	907.43	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	10/10/23	-157.07	±	220.29	-581.16	±	815.07	No
	10/17/23	-245.44	±	228.29	-908.13	±	844.67	No
	10/24/23	181.14	±	244.81	670.22	±	905.80	No
	10/31/23	-236.54	±	210.00	-875.20	±	777.00	No
	11/07/23	79.80	±	208.11	295.26	±	770.01	No
	11/14/23	-228.09	±	276.73	-843.93	±	1023.90	No
	11/21/23	-206.55	±	228.75	-764.24	±	846.38	No
	11/28/23	-180.91	±	189.42	-669.37	±	700.85	No
	12/06/23	68.43	±	174.07	253.18	±	644.06	No
	12/13/23	-151.33	±	210.67	-559.92	±	779.48	No
	12/20/23	-52.46	±	115.93	-194.11	±	428.94	No
MONTEVIEW	10/03/23	44.44	±	226.85	164.43	±	839.35	No
	10/10/23	159.75	±	191.91	591.08	±	710.07	No
	10/17/23	-254.59	±	222.47	-941.98	±	823.14	No
	10/24/23	-168.61	±	197.97	-623.86	±	732.49	No
	10/31/23	36.79	±	199.12	136.12	±	736.74	No
	11/07/23	-214.52	±	275.08	-793.72	±	1017.80	No
	11/14/23	-9.83	±	337.07	-36.35	±	1247.16	No
	11/21/23	-109.93	±	205.80	-406.74	±	761.46	No
	11/28/23	-101.48	±	246.06	-375.48	±	910.42	No
	12/06/23	-115.32	±	210.66	-426.68	±	779.44	No
	12/13/23	-84.48	±	206.42	-312.58	±	763.75	No
	12/20/23	113.55	±	115.53	420.14	±	427.46	No
TERRETON	10/03/23	-147.23	±	217.29	-544.75	±	803.97	No
	10/10/23	-266.91	±	237.36	-987.57	±	878.23	No
	10/17/23	-10.24	±	221.98	-37.88	±	821.33	No
	10/24/23	-268.38	±	252.96	-993.01	±	935.95	No
	10/31/23	106.60	±	187.95	394.42	±	695.42	No
	11/07/23	198.75	±	222.80	735.38	±	824.36	No
	11/14/23	-252.49	±	236.75	-934.21	±	875.98	No
	11/21/23	-86.50	±	85.34	-320.04	±	315.74	No
	11/28/23	270.10	±	180.99	999.37	±	669.66	No
	12/06/23	124.04	±	180.51	458.95	±	667.89	No
	12/13/23	103.29	±	203.39	382.17	±	752.54	No
	12/20/23	-139.49	±	123.04	-516.11	±	455.25	No
OFFSITE								
BLACKFOOT	10/03/23	12.99	±	215.02	48.04	±	795.57	No
	10/10/23	142.81	±	212.76	528.40	±	787.21	No
	10/17/23	-271.04	±	232.93	-1002.85	±	861.84	No
	10/24/23	-284.76	±	285.49	-1053.61	±	1056.31	No
	10/31/23	-237.50	±	212.72	-878.75	±	787.06	No
	11/07/23	-235.03	±	210.69	-869.61	±	779.55	No
	11/14/23	-177.30	±	226.26	-656.01	±	837.16	No
	11/21/23	-286.06	±	265.50	-1058.42	±	982.35	No
	11/28/23	-102.82	±	88.06	-380.43	±	325.83	No
	12/06/23	32.32	±	250.84	119.57	±	928.11	No
	12/13/23	-162.07	±	190.03	-599.66	±	703.11	No
	12/20/23	-148.52	±	130.11	-549.52	±	481.41	No
CRATERS OF THE MOON	10/03/23	12.84	±	188.66	47.52	±	698.04	No
	10/10/23	-240.72	±	226.32	-890.66	±	837.38	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	10/17/23	54.75	±	205.49	202.56	±	760.31	No
	10/24/23	-39.97	±	366.24	-147.90	±	1355.09	No
	10/31/23	85.15	±	191.47	315.07	±	708.44	No
	11/07/23	-79.63	±	199.23	-294.62	±	737.15	No
	11/14/23	-69.20	±	224.84	-256.03	±	831.91	No
	11/21/23	280.54	±	301.73	1038.00	±	1116.40	No
	11/28/23	-280.00	±	262.75	-1036.00	±	972.18	No
	12/06/23	75.39	±	178.58	278.92	±	660.75	No
	12/13/23	-255.17	±	243.34	-944.13	±	900.36	No
	12/20/23	12.37	±	45.32	45.77	±	167.67	No
DUBOIS	10/03/23	-251.29	±	232.18	-929.77	±	859.07	No
	10/10/23	84.30	±	217.48	311.91	±	804.68	No
	10/17/23	-205.89	±	271.63	-761.79	±	1005.03	No
	10/24/23	-246.10	±	217.86	-910.57	±	806.08	No
	10/31/23	157.57	±	197.98	583.01	±	732.53	No
	11/07/23	-129.73	±	287.59	-480.00	±	1064.08	No
	11/14/23	-31.69	±	327.39	-117.23	±	1211.34	No
	11/21/23	155.52	±	200.95	575.42	±	743.52	No
	11/28/23	45.05	±	74.15	166.68	±	274.35	No
	12/06/23	-204.67	±	187.34	-757.28	±	693.16	No
	12/13/23	199.94	±	203.56	739.78	±	753.17	No
	12/20/23	-140.58	±	122.06	-520.15	±	451.62	No
DUBOS (QA-1)	10/03/23	-342.84	±	296.56	-1268.51	±	1097.27	No
	10/10/23	-123.99	±	229.53	-458.76	±	849.26	No
	10/17/23	196.49	±	215.35	727.01	±	796.80	No
	10/24/23	385.25	±	438.08	1425.43	±	1620.90	No
	10/31/23	-226.80	±	205.54	-839.16	±	760.50	No
	11/07/23	-253.13	±	226.61	-936.58	±	838.46	No
	11/14/23	-100.92	±	254.98	-373.40	±	943.43	No
	11/21/23	117.34	±	181.34	434.16	±	670.96	No
	11/28/23	14.74	±	193.62	54.53	±	716.39	No
	12/06/23	343.27	±	221.41	1270.10	±	819.22	No
	12/13/23	-266.79	±	256.65	-987.12	±	949.61	No
	12/20/23	57.25	±	46.15	211.83	±	170.74	No
IDAHO FALLS	10/03/23	171.10	±	209.62	633.07	±	775.59	No
	10/10/23	-285.30	±	272.08	-1055.61	±	1006.70	No
	10/17/23	0.92	±	194.92	3.41	±	721.20	No
	10/24/23	118.13	±	234.09	437.08	±	866.13	No
	10/31/23	-224.26	±	193.44	-829.76	±	715.73	No
	11/07/23	-282.57	±	271.78	-1045.51	±	1005.59	No
	11/14/23	99.56	±	250.79	368.36	±	927.92	No
	11/21/23	-249.17	±	223.15	-921.93	±	825.66	No
	11/28/23	-194.98	±	214.11	-721.43	±	792.21	No
	12/06/23	-225.84	±	204.50	-835.61	±	756.65	No
	12/13/23	-108.34	±	303.58	-400.86	±	1123.25	No
	12/20/23	-74.31	±	137.67	-274.94	±	509.38	No
IRC	10/03/23	-138.02	±	193.45	-510.67	±	715.77	No
	10/10/23	-299.94	±	281.99	-1109.78	±	1043.36	No
	10/17/23	-226.55	±	266.83	-838.24	±	987.27	No
	10/24/23	38.02	±	394.00	140.69	±	1457.80	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	10/31/23	-89.74	±	221.78	-332.04	±	820.59	No
	11/07/23	-17.56	±	352.31	-64.97	±	1303.55	No
	11/14/23	241.76	±	299.19	894.51	±	1107.00	No
	11/21/23	-277.16	±	307.07	-1025.49	±	1136.16	No
	11/28/23	276.42	±	210.61	1022.75	±	779.26	No
	12/06/23	78.95	±	195.21	292.10	±	722.28	No
	12/13/23	216.51	±	184.54	801.09	±	682.80	No
	12/20/23	-5.88	±	131.03	-21.77	±	484.81	No
IRC NORTH	10/03/23	-309.42	±	276.41	-1144.85	±	1022.72	No
	10/10/23	-274.65	±	255.43	-1016.21	±	945.09	No
	10/17/23	-307.10	±	301.43	-1136.27	±	1115.29	No
	10/24/23	-293.36	±	260.27	-1085.43	±	963.00	No
	10/31/23	465.72	±	350.82	1723.16	±	1298.03	No
	11/07/23	-291.66	±	280.68	-1079.14	±	1038.52	No
	11/14/23	122.40	±	254.40	452.88	±	941.28	No
	11/21/23	-99.02	±	382.12	-366.39	±	1413.84	No
	11/28/23	-250.40	±	317.54	-926.48	±	1174.90	No
	12/06/23	201.53	±	317.45	745.66	±	1174.57	No
	12/13/23	-252.35	±	229.42	-933.70	±	848.85	No
	12/20/23	-137.81	±	152.32	-509.90	±	563.58	No
JACKSON, WY	10/03/23	-271.62	±	248.48	-1004.99	±	919.38	No
	10/10/23	-94.49	±	229.85	-349.61	±	850.45	No
	10/17/23	43.84	±	284.41	162.20	±	1052.32	No
	10/24/23	-287.11	±	244.06	-1062.31	±	903.02	No
	10/31/23	-49.92	±	232.52	-184.70	±	860.32	No
	11/07/23	272.78	±	246.73	1009.29	±	912.90	No
	11/14/23	-48.97	±	151.14	-181.17	±	559.22	No
	11/21/23	-2.99	±	330.43	-11.07	±	1222.59	No
	11/28/23	-26.46	±	233.29	-97.92	±	863.17	No
	12/05/23	-284.81	±	253.20	-1053.80	±	936.84	No
	12/12/23	-236.72	±	291.21	-875.86	±	1077.48	No
	12/19/23	-162.42	±	188.68	-600.95	±	698.12	No
SUGAR CITY	10/03/23	-246.49	±	233.56	-912.01	±	864.17	No
	10/10/23	-210.65	±	231.32	-779.41	±	855.88	No
	10/17/23	30.26	±	217.89	111.95	±	806.19	No
	10/24/23	-104.87	±	199.05	-388.02	±	736.49	No
	10/31/23	169.43	±	193.50	626.89	±	715.95	No
	11/07/23	-310.78	±	297.27	-1149.89	±	1099.90	No
	11/14/23	176.35	±	266.75	652.50	±	986.98	No
	11/21/23	-23.43	±	210.47	-86.68	±	778.74	No
	11/28/23	-132.87	±	193.17	-491.62	±	714.73	No
	12/06/23	-237.49	±	259.55	-878.71	±	960.34	No
	12/13/23	-200.51	±	270.80	-741.89	±	1001.96	No
	12/20/23	-145.86	±	131.88	-539.68	±	487.96	No
ONSITE								
ATR COMPLEX	10/03/23	-220.52	±	243.43	-815.92	±	900.69	No
	10/10/23	100.60	±	232.07	372.22	±	858.66	No
	10/17/23	-293.05	±	272.58	-1084.29	±	1008.55	No
	10/24/23	-243.38	±	243.09	-900.51	±	899.43	No
	10/31/23	-35.84	±	213.26	-132.59	±	789.06	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location		Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
		11/07/23	388.89	±	321.52	1438.89	±	1189.62	No
		11/14/23	219.67	±	323.91	812.78	±	1198.47	No
		11/21/23	-18.62	±	219.37	-68.88	±	811.67	No
		11/28/23	-22.71	±	85.99	-84.01	±	318.18	No
		12/06/23	186.18	±	236.05	688.87	±	873.39	No
		12/13/23	-66.75	±	84.06	-246.99	±	311.02	No
		12/20/23	-34.04	±	122.01	-125.93	±	451.44	No
CFA		10/03/23	-246.49	±	235.03	-912.01	±	869.61	No
		10/10/23	-277.65	±	266.70	-1027.31	±	986.79	No
		10/17/23	-93.31	±	231.60	-345.25	±	856.92	No
		10/24/23	342.28	±	360.80	1266.44	±	1334.96	No
		10/31/23	152.94	±	279.08	565.88	±	1032.60	No
		11/07/23	37.96	±	224.32	140.44	±	829.98	No
		11/14/23	-118.68	±	288.55	-439.12	±	1067.64	No
		11/21/23	48.27	±	79.67	178.59	±	294.76	No
		11/28/23	-279.63	±	271.93	-1034.63	±	1006.14	No
		12/06/23	-213.43	±	196.36	-789.69	±	726.53	No
		12/13/23	-230.27	±	206.59	-852.00	±	764.38	No
		12/20/23	25.90	±	46.33	95.83	±	171.42	No
EBR-I		10/03/23	-248.94	±	227.55	-921.08	±	841.94	No
		10/10/23	-23.09	±	209.85	-85.42	±	776.45	No
		10/17/23	-352.21	±	344.67	-1303.18	±	1275.28	No
		10/24/23	138.39	±	218.24	512.04	±	807.49	No
		10/31/23	-379.40	±	305.41	-1403.78	±	1130.02	No
		11/07/23	171.75	±	179.44	635.48	±	663.93	No
		11/14/23	-164.30	±	211.51	-607.91	±	782.59	No
		11/21/23	-11.19	±	83.98	-41.42	±	310.73	No
		11/28/23	-213.09	±	202.63	-788.43	±	749.73	No
		12/06/23	-196.97	±	169.92	-728.79	±	628.70	No
		12/13/23	145.68	±	213.10	539.02	±	788.47	No
		12/20/23	-133.29	±	116.62	-493.17	±	431.49	No
EFS	a	10/03/23		±		0.00	±	0.00	No
	a	10/10/23		±		0.00	±	0.00	No
	a	10/17/23		±		0.00	±	0.00	No
		10/24/23	-245.95	±	218.54	-910.02	±	808.60	No
	a	10/31/23		±		0.00	±	0.00	No
		11/07/23	80.00	±	225.28	295.99	±	833.54	No
		11/14/23	63.56	±	218.13	235.16	±	807.08	No
		11/21/23	-238.78	±	208.41	-883.49	±	771.12	No
		11/28/23	375.38	±	212.88	1388.91	±	787.66	No
		12/06/23	371.98	±	256.15	1376.33	±	947.76	No
		12/13/23	-57.83	±	204.69	-213.97	±	757.35	No
		12/20/23	47.01	±	117.44	173.93	±	434.53	No
GATE 4		10/03/23	-233.55	±	210.67	-864.14	±	779.48	No
		10/10/23	229.59	±	256.14	849.48	±	947.72	No
		10/17/23	-308.30	±	294.99	-1140.71	±	1091.46	No
		10/24/23	101.05	±	490.06	373.89	±	1813.22	No
		10/31/23	-275.75	±	269.60	-1020.28	±	997.52	No
		11/07/23	-160.35	±	218.56	-593.30	±	808.67	No
		11/14/23	36.79	±	243.94	136.10	±	902.58	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	11/21/23	-258.01	±	219.34	-954.64	±	811.56	No
	11/28/23	-97.36	±	86.69	-360.22	±	320.76	No
	12/06/23	1.30	±	73.67	4.82	±	272.58	No
	12/13/23	293.09	±	312.14	1084.43	±	1154.92	No
	12/20/23	-93.49	±	121.37	-345.92	±	449.07	No
HIGHWAY 26 REST AREA	10/03/23	-233.46	±	224.85	-863.80	±	831.95	No
	10/10/23	198.52	±	222.42	734.52	±	822.95	No
	10/17/23	-249.89	±	223.39	-924.59	±	826.54	No
	10/24/23	98.56	±	233.98	364.65	±	865.73	No
	10/31/23	-249.03	±	222.86	-921.41	±	824.58	No
	11/07/23	-237.71	±	215.43	-879.53	±	797.09	No
	11/14/23	20.28	±	223.32	75.04	±	826.28	No
	11/21/23	-216.67	±	215.86	-801.68	±	798.68	No
	11/28/23	-296.19	±	279.47	-1095.90	±	1034.04	No
	12/06/23	89.29	±	215.63	330.37	±	797.83	No
	12/13/23	-171.52	±	216.63	-634.62	±	801.53	No
	12/20/23	-138.34	±	120.99	-511.86	±	447.66	No
INTEC (NE CORNER) a	10/03/23		±		0.00	±	0.00	No
a	10/10/23		±		0.00	±	0.00	No
a	10/17/23		±		0.00	±	0.00	No
a	10/24/23		±		0.00	±	0.00	No
a	10/31/23		±		0.00	±	0.00	No
a	11/07/23		±		0.00	±	0.00	No
a	11/14/23		±		0.00	±	0.00	No
a	11/21/23		±		0.00	±	0.00	No
	11/28/23	-234.40	±	271.05	-867.28	±	1002.89	No
	12/06/23	-396.60	±	332.88	-1467.42	±	1231.66	No
	12/13/23	-270.69	±	255.62	-1001.55	±	945.79	No
	12/20/23	-93.96	±	106.72	-347.66	±	394.86	No
INTEC (QA-2)	10/03/23	-249.52	±	230.41	-923.22	±	852.52	No
	10/10/23	-288.64	±	288.27	-1067.97	±	1066.60	No
	10/17/23	-52.87	±	187.20	-195.63	±	692.64	No
	10/24/23	-42.68	±	384.84	-157.91	±	1423.91	No
	10/31/23	-75.08	±	199.57	-277.80	±	738.41	No
	11/07/23	-254.93	±	268.94	-943.24	±	995.08	No
	11/14/23	52.09	±	229.21	192.75	±	848.08	No
	11/21/23	106.81	±	236.88	395.20	±	876.46	No
	11/28/23	-214.69	±	252.65	-794.35	±	934.81	No
	12/06/23	45.86	±	172.49	169.68	±	638.21	No
	12/13/23	-60.75	±	191.64	-224.76	±	709.07	No
	12/20/23	-53.07	±	126.86	-196.37	±	469.38	No
INTEC (WEST SIDE)	10/03/23	-161.24	±	220.29	-596.59	±	815.07	No
	10/10/23	-154.45	±	211.31	-571.47	±	781.85	No
	10/17/23	207.20	±	190.40	766.64	±	704.48	No
	10/24/23	-34.36	±	221.53	-127.14	±	819.66	No
	10/31/23	-9.86	±	203.36	-36.50	±	752.43	No
	11/07/23	-289.59	±	249.82	-1071.48	±	924.33	No
	11/14/23	-27.88	±	208.60	-103.15	±	771.82	No
	11/21/23	216.98	±	251.06	802.83	±	928.92	No
	11/28/23	-22.26	±	81.99	-82.34	±	303.37	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	12/06/23	-9.50	±	76.69	-35.15	±	283.73	No
	12/13/23	-229.58	±	203.98	-849.45	±	754.73	No
	12/20/23	46.65	±	115.83	172.62	±	428.57	No
MAIN GATE	10/03/23	25.49	±	221.67	94.32	±	820.18	No
	10/10/23	274.35	±	194.89	1015.10	±	721.09	No
	10/17/23	-243.84	±	218.19	-902.21	±	807.30	No
	10/24/23	-464.57	±	417.63	-1718.91	±	1545.23	No
	10/31/23	-236.92	±	249.87	-876.60	±	924.52	No
	11/07/23	312.21	±	305.35	1155.18	±	1129.80	No
	11/14/23	144.87	±	231.52	536.02	±	856.62	No
	11/21/23	-149.85	±	193.98	-554.45	±	717.73	No
	11/28/23	-101.89	±	87.27	-376.99	±	322.90	No
	12/06/23	-217.15	±	198.69	-803.46	±	735.15	No
	12/13/23	0.78	±	242.50	2.87	±	897.25	No
	12/20/23	-137.60	±	120.73	-509.12	±	446.70	No
MFC NORTH	10/03/23	-63.86	±	223.04	-236.29	±	825.25	No
	10/10/23	-217.69	±	226.20	-805.45	±	836.94	No
	10/17/23	-240.57	±	224.60	-890.11	±	831.02	No
	10/24/23	-241.41	±	339.42	-893.22	±	1255.85	No
	10/31/23	116.82	±	197.02	432.23	±	728.97	No
	11/07/23	-242.10	±	209.10	-895.77	±	773.67	No
	11/14/23	-6.05	±	232.34	-22.37	±	859.66	No
	11/21/23	-283.33	±	272.98	-1048.32	±	1010.03	No
	11/28/23	-121.80	±	205.76	-450.66	±	761.31	No
	12/06/23	-189.57	±	224.01	-701.41	±	828.84	No
	12/13/23	-19.04	±	207.46	-70.46	±	767.60	No
	12/20/23	56.74	±	119.63	209.94	±	442.63	No
MFC SOUTH	10/03/23	-254.78	±	202.87	-942.69	±	750.62	No
	10/10/23	-293.89	±	283.17	-1087.39	±	1047.73	No
	10/17/23	185.23	±	211.75	685.35	±	783.48	No
	10/24/23	195.51	±	220.94	723.39	±	817.48	No
	10/31/23	-371.12	±	299.33	-1373.14	±	1107.52	No
	11/07/23	-39.27	±	212.86	-145.29	±	787.58	No
	11/14/23	-351.19	±	358.34	-1299.40	±	1325.86	No
	11/21/23	-372.81	±	300.42	-1379.40	±	1111.55	No
	11/28/23	-158.37	±	212.05	-585.97	±	784.59	No
	12/06/23	132.34	±	186.02	489.66	±	688.27	No
	12/13/23	18.19	±	218.19	67.28	±	807.30	No
	12/20/23	-10.82	±	117.08	-40.02	±	433.20	No
NRF	10/03/23	-199.00	±	214.05	-736.30	±	791.99	No
	10/10/23	-208.60	±	223.89	-771.82	±	828.39	No
	10/17/23	-97.58	±	204.54	-361.03	±	756.80	No
	10/24/23	-245.31	±	219.74	-907.65	±	813.04	No
	10/31/23	-216.46	±	202.66	-800.90	±	749.84	No
	11/07/23	-243.25	±	231.96	-900.03	±	858.25	No
	11/14/23	-140.17	±	222.38	-518.63	±	822.81	No
	11/21/23	-214.11	±	198.59	-792.21	±	734.78	No
	11/28/23	-30.10	±	198.72	-111.37	±	735.26	No
	12/06/23	-87.34	±	77.39	-323.16	±	286.34	No
	12/13/23	-117.41	±	209.25	-434.42	±	774.23	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	12/20/23	-132.27	±	120.60	-489.40	±	446.22	No
PBF	10/03/23	-324.68	±	331.98	-1201.32	±	1228.33	No
	10/10/23	-192.97	±	215.05	-713.99	±	795.69	No
	10/17/23	-293.31	±	278.27	-1085.25	±	1029.60	No
	10/24/23	-26.27	±	396.15	-97.20	±	1465.76	No
	10/31/23	130.25	±	193.68	481.93	±	716.62	No
	11/07/23	11.03	±	219.31	40.81	±	811.45	No
	11/14/23	75.04	±	259.01	277.65	±	958.34	No
	11/21/23	106.46	±	199.15	393.90	±	736.86	No
	11/28/23	80.24	±	209.20	296.88	±	774.04	No
	12/06/23	-206.35	±	191.85	-763.50	±	709.85	No
	12/13/23	177.72	±	234.39	657.56	±	867.24	No
	12/20/23	-79.80	±	150.25	-295.25	±	555.93	No
RHLLW	10/03/23	-236.67	±	213.15	-875.68	±	788.66	No
	10/10/23	-257.42	±	235.96	-952.45	±	873.05	No
	10/17/23	-39.01	±	188.85	-144.34	±	698.75	No
	10/24/23	-241.99	±	216.61	-895.36	±	801.46	No
	10/31/23	-31.60	±	192.96	-116.92	±	713.95	No
	11/07/23	-238.20	±	220.47	-881.34	±	815.74	No
	11/14/23	-16.95	±	311.32	-62.72	±	1151.88	No
	11/21/23	-101.20	±	91.74	-374.44	±	339.44	No
	11/28/23	31.43	±	80.32	116.31	±	297.18	No
	12/06/23	8.48	±	181.85	31.37	±	672.85	No
	12/13/23	-89.59	±	214.56	-331.48	±	793.87	No
	12/20/23	-225.83	±	175.02	-835.57	±	647.57	No
RWMC (QA-3)	10/03/23	-23.17	±	207.91	-85.73	±	769.27	No
	10/10/23	-258.98	±	232.01	-958.23	±	858.44	No
	10/17/23	-260.21	±	227.99	-962.78	±	843.56	No
	10/24/23	-207.31	±	242.66	-767.05	±	897.84	No
	10/31/23	351.15	±	208.39	1299.26	±	771.04	No
	11/07/23	-93.54	±	217.92	-346.10	±	806.30	No
	11/14/23	165.03	±	230.28	610.61	±	852.04	No
	11/21/23	-249.63	±	223.01	-923.63	±	825.14	No
	11/28/23	-253.82	±	220.52	-939.13	±	815.92	No
	12/06/23	-198.02	±	175.65	-732.67	±	649.91	No
	12/13/23	-124.20	±	198.33	-459.54	±	733.82	No
	12/20/23	105.27	±	122.53	389.50	±	453.36	No
RWMC	10/03/23	-17.52	±	195.50	-64.81	±	723.35	No
	10/10/23	-291.54	±	283.73	-1078.70	±	1049.80	No
	10/17/23	-250.11	±	218.47	-925.41	±	808.34	No
	10/24/23	-294.60	±	280.18	-1090.02	±	1036.67	No
	10/31/23	114.54	±	195.82	423.80	±	724.53	No
	11/07/23	-323.10	±	352.66	-1195.47	±	1304.84	No
	11/14/23	52.35	±	235.89	193.68	±	872.79	No
	11/21/23	-105.97	±	223.80	-392.09	±	828.06	No
	11/28/23	-274.02	±	239.14	-1013.87	±	884.82	No
	12/06/23	325.49	±	279.94	1204.31	±	1035.78	No
	12/13/23	-34.50	±	212.92	-127.66	±	787.80	No
	12/20/23	-106.97	±	126.01	-395.79	±	466.24	No
RWMC SOUTH	10/03/23	-24.61	±	192.12	-91.05	±	710.84	No

Table C-2. Weekly iodine-131 activity in air.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-15}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-11}$ Bq/mL)			Result > 3s
	10/10/23	-85.91	±	215.94	-317.87	±	798.98	No
	10/17/23	-24.36	±	263.40	-90.12	±	974.58	No
	10/24/23	-16.62	±	228.13	-61.48	±	844.08	No
	10/31/23	-76.08	±	199.52	-281.50	±	738.22	No
	11/07/23	25.43	±	199.18	94.09	±	736.97	No
	11/14/23	28.13	±	308.45	104.07	±	1141.27	No
	11/21/23	113.45	±	200.64	419.77	±	742.37	No
	11/28/23	-105.04	±	264.62	-388.65	±	979.09	No
	12/06/23	239.56	±	198.53	886.37	±	734.56	No
	12/13/23	-134.69	±	198.25	-498.35	±	733.53	No
	12/20/23	-80.46	±	119.12	-297.68	±	440.74	No
SMC	10/03/23	117.51	±	217.65	434.79	±	805.31	No
	10/10/23	-264.43	±	232.37	-978.39	±	859.77	No
	10/17/23	-199.36	±	221.29	-737.63	±	818.77	No
	10/24/23	-258.36	±	341.78	-955.93	±	1264.59	No
	10/31/23	-223.04	±	202.32	-825.25	±	748.58	No
	11/07/23	-258.99	±	233.46	-958.26	±	863.80	No
	11/14/23	-182.90	±	297.57	-676.73	±	1101.01	No
	11/21/23	-260.72	±	309.73	-964.66	±	1146.00	No
	11/28/23	212.05	±	184.43	784.59	±	682.39	No
	12/06/23	-207.20	±	185.01	-766.64	±	684.54	No
	12/13/23	59.51	±	218.36	220.17	±	807.93	No
	12/20/23	-106.79	±	149.57	-395.12	±	553.41	No
VAN BUREN	10/03/23	-255.84	±	222.40	-946.61	±	822.88	No
	10/10/23	305.67	±	229.61	1130.98	±	849.56	No
	10/17/23	-115.61	±	283.04	-427.76	±	1047.25	No
	10/24/23	-138.96	±	231.82	-514.15	±	857.73	No
	10/31/23	-244.66	±	215.57	-905.24	±	797.61	No
	11/07/23	73.27	±	368.98	271.09	±	1365.23	No
	11/14/23	177.02	±	213.91	654.97	±	791.47	No
	11/21/23	-93.40	±	221.63	-345.57	±	820.03	No
	11/28/23	-14.50	±	219.44	-53.66	±	811.93	No
	12/06/23	-20.64	±	69.41	-76.36	±	256.82	No
	12/13/23	34.62	±	78.95	128.11	±	292.11	No
	12/20/23	-111.30	±	177.36	-411.81	±	656.23	No
VAN BUREN (QA-4)	10/03/23	-43.47	±	246.71	-160.82	±	912.83	No
	10/10/23	273.75	±	216.03	1012.88	±	799.31	No
	10/17/23	-254.88	±	235.91	-943.06	±	872.87	No
	10/24/23	-56.78	±	235.32	-210.08	±	870.68	No
	10/31/23	275.62	±	195.90	1019.79	±	724.83	No
	11/07/23	-146.08	±	217.91	-540.50	±	806.27	No
	11/14/23	174.69	±	219.88	646.35	±	813.56	No
	11/21/23	-252.38	±	218.30	-933.81	±	807.71	No
	11/28/23	13.61	±	205.18	50.35	±	759.17	No
	12/06/23	-205.03	±	186.82	-758.61	±	691.23	No
	12/13/23	-44.37	±	191.30	-164.18	±	707.81	No
	12/20/23	-159.68	±	151.42	-590.82	±	560.25	No

a. Invalid sample identified in red

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
BOUNDARY									
ARCO	12/31/23	Americium-241	3.81	±	3.83	14.10	±	14.17	No
	12/31/23	Cesium-137	25.20	±	82.00	93.24	±	303.40	No
	12/31/23	Plutonium-238	-0.39	±	1.71	-1.44	±	6.33	No
	12/31/23	Plutonium-239/240	3.69	±	3.34	13.65	±	12.36	No
	12/31/23	Strontium-90	59.80	±	37.30	221.26	±	138.01	No
	12/31/23	Uranium-233/234	6.06	±	5.59	22.42	±	20.68	No
	12/31/23	Uranium-238	6.07	±	4.48	22.46	±	16.58	No
ATOMIC CITY	12/31/23	Americium-241	5.54	±	4.59	20.50	±	16.98	No
	12/31/23	Cesium-137	39.40	±	23.50	145.78	±	86.95	No
	12/31/23	Plutonium-238	1.43	±	2.73	5.29	±	10.10	No
	12/31/23	Plutonium-239/240	-0.45	±	1.99	-1.67	±	7.36	No
	12/31/23	Strontium-90	0.62	±	34.80	2.29	±	128.76	No
	12/31/23	Uranium-233/234	-1.62	±	4.34	-5.99	±	16.06	No
	12/31/23	Uranium-238	5.27	±	4.77	19.50	±	17.65	No
BLUE DOME	12/31/23	Americium-241	0.94	±	2.66	3.47	±	9.84	No
	12/31/23	Cesium-137	-96.60	±	62.10	-357.42	±	229.77	No
	12/31/23	Plutonium-238	-1.42	±	2.20	-5.25	±	8.14	No
	12/31/23	Plutonium-239/240	-1.42	±	2.20	-5.25	±	8.14	No
	12/31/23	Strontium-90	80.60	±	35.60	298.22	±	131.72	No
	12/31/23	Uranium-233/234	9.21	±	6.98	34.08	±	25.83	No
	12/31/23	Uranium-238	6.39	±	5.21	23.64	±	19.28	No
FAA TOWER	12/31/23	Americium-241	0.09	±	3.55	0.35	±	13.14	No
	12/31/23	Cesium-137	-15.80	±	24.30	-58.46	±	89.91	No
	12/31/23	Plutonium-238	3.78	±	3.80	13.99	±	14.06	No
	12/31/23	Plutonium-239/240	3.86	±	4.48	14.28	±	16.58	No
	12/31/23	Strontium-90	32.70	±	36.20	120.99	±	133.94	No
	12/31/23	Uranium-233/234	7.15	±	3.79	26.46	±	14.02	No
	12/31/23	Uranium-238	0.42	±	2.45	1.56	±	9.07	No
HOWE	12/31/23	Americium-241	0.11	±	4.02	0.39	±	14.87	No
	12/31/23	Cesium-137	30.60	±	31.50	113.22	±	116.55	No
	12/31/23	Plutonium-238	-0.80	±	1.80	-2.95	±	6.66	No
	12/31/23	Plutonium-239/240	1.33	±	3.04	4.92	±	11.25	No
	12/31/23	Strontium-90	-21.20	±	33.80	-78.44	±	125.06	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Uranium-233/234	10.00	±	4.18	37.00	±	15.47	No
	12/31/23	Uranium-238	4.47	±	2.97	16.54	±	10.99	No
MONTEVIEW	12/31/23	Americium-241	1.13	±	3.20	4.18	±	11.84	No
	12/31/23	Cesium-137	0.00	±	30.80	0.00	±	113.96	No
	12/31/23	Plutonium-238	0.88	±	2.33	3.26	±	8.62	No
	12/31/23	Plutonium-239/240	-2.64	±	1.97	-9.77	±	7.29	No
	12/31/23	Strontium-90	57.90	±	38.80	214.23	±	143.56	No
	12/31/23	Uranium-233/234	8.58	±	5.46	31.75	±	20.20	No
	12/31/23	Uranium-238	13.10	±	5.76	48.47	±	21.31	No
TERRETON	12/31/23	Americium-241	1.73	±	2.49	6.40	±	9.21	No
	12/31/23	Cesium-137	0.00	±	80.50	0.00	±	297.85	No
	12/31/23	Plutonium-238	-4.35	±	2.61	-16.10	±	9.66	No
	12/31/23	Plutonium-239/240	-1.74	±	2.13	-6.44	±	7.88	No
	12/31/23	Strontium-90	41.60	±	37.40	153.92	±	138.38	No
	12/31/23	Uranium-233/234	6.64	±	4.65	24.57	±	17.21	No
	12/31/23	Uranium-238	10.40	±	4.92	38.48	±	18.20	No
OFFSITE									
BLACKFOOT	12/31/23	Americium-241	3.23	±	3.80	11.95	±	14.06	No
	12/31/23	Cesium-137	-45.90	±	40.30	-169.83	±	149.11	No
	12/31/23	Plutonium-238	-1.02	±	2.31	-3.77	±	8.55	No
	12/31/23	Plutonium-239/240	1.62	±	3.10	5.99	±	11.47	No
	12/31/23	Strontium-90	56.30	±	33.40	208.31	±	123.58	No
	12/31/23	Uranium-233/234	16.50	±	7.42	61.05	±	27.45	No
	12/31/23	Uranium-238	16.00	±	7.03	59.20	±	26.01	No
CRATERS OF THE MOON	12/31/23	Americium-241	1.37	±	2.63	5.07	±	9.73	No
	12/31/23	Cesium-137	6.08	±	25.20	22.50	±	93.24	No
	12/31/23	Plutonium-238	0.07	±	2.55	0.25	±	9.44	No
	12/31/23	Plutonium-239/240	1.68	±	2.41	6.22	±	8.92	No
	12/31/23	Strontium-90	56.30	±	37.40	208.31	±	138.38	No
	12/31/23	Uranium-233/234	-1.62	±	3.59	-5.99	±	13.28	No
	12/31/23	Uranium-238	4.74	±	4.16	17.54	±	15.39	No
DUBOIS	12/31/23	Americium-241	-3.76	±	2.71	-13.91	±	10.03	No
	12/31/23	Cesium-137	-27.80	±	73.10	-102.86	±	270.47	No
	12/31/23	Plutonium-238	-0.89	±	2.01	-3.30	±	7.44	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Plutonium-239/240	2.82	±	3.31	10.43	±	12.25	No
	12/31/23	Strontium-90	53.50	±	37.80	197.95	±	139.86	No
	12/31/23	Uranium-233/234	3.37	±	4.71	12.47	±	17.43	No
	12/31/23	Uranium-238	2.67	±	4.27	9.88	±	15.80	No
DUBOIS (QA)	12/31/23	Americium-241	-1.10	±	2.48	-4.07	±	9.18	No
	12/31/23	Cesium-137	-8.47	±	25.00	-31.34	±	92.50	No
	12/31/23	Plutonium-238	1.71	±	2.09	6.33	±	7.73	No
	12/31/23	Plutonium-239/240	-8.52	±	2.95	-31.52	±	10.92	No
	12/31/23	Strontium-90	-22.70	±	34.00	-83.99	±	125.80	No
	12/31/23	Uranium-233/234	-2.64	±	3.93	-9.77	±	14.54	No
	12/31/23	Uranium-238	1.65	±	3.77	6.11	±	13.95	No
IDAHO FALLS	12/31/23	Americium-241	-1.97	±	2.33	-7.29	±	8.62	No
	12/31/23	Cesium-137	-5.50	±	27.50	-20.35	±	101.75	No
	12/31/23	Plutonium-238	-2.47	±	2.39	-9.14	±	8.84	No
	12/31/23	Plutonium-239/240	-0.99	±	2.23	-3.65	±	8.25	No
	12/31/23	Strontium-90	109.00	±	40.70	403.30	±	150.59	No
	12/31/23	Uranium-233/234	3.07	±	3.75	11.36	±	13.88	No
	12/31/23	Uranium-238	5.84	±	3.71	21.61	±	13.73	No
IRC	12/31/23	Americium-241	3.36	±	3.63	12.43	±	13.43	No
	12/31/23	Cesium-137	-33.60	±	74.50	-124.32	±	275.65	No
	12/31/23	Plutonium-238	0.47	±	2.53	1.75	±	9.36	No
	12/31/23	Plutonium-239/240	0.47	±	2.53	1.75	±	9.36	No
	12/31/23	Strontium-90	43.30	±	35.80	160.21	±	132.46	No
	12/31/23	Uranium-233/234	8.40	±	5.15	31.08	±	19.06	No
	12/31/23	Uranium-238	15.60	±	5.28	57.72	±	19.54	No
IRC NORTH	12/31/23	Americium-241	-2.60	±	3.07	-9.62	±	11.36	No
	12/31/23	Cesium-137	0.00	±	73.50	0.00	±	271.95	No
	12/31/23	Plutonium-238	2.00	±	2.87	7.40	±	10.62	No
	12/31/23	Plutonium-239/240	-0.40	±	3.06	-1.48	±	11.32	No
	12/31/23	Strontium-90	1.48	±	36.10	5.48	±	133.57	No
	12/31/23	Uranium-233/234	15.70	±	5.83	58.09	±	21.57	No
	12/31/23	Uranium-238	11.50	±	4.84	42.55	±	17.91	No
JACKSON, WY	12/31/23	Americium-241	-1.07	±	2.41	-3.96	±	8.92	No
	12/31/23	Cesium-137	52.70	±	42.70	194.99	±	157.99	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Plutonium-238	0.48	±	2.54	1.76	±	9.40	No
	12/31/23	Plutonium-239/240	1.43	±	3.63	5.29	±	13.43	No
	12/31/23	Strontium-90	-1.58	±	35.50	-5.85	±	131.35	No
	12/31/23	Uranium-233/234	-3.74	±	4.40	-13.84	±	16.28	No
	12/31/23	Uranium-238	1.12	±	4.26	4.14	±	15.76	No
SUGAR CITY	12/31/23	Americium-241	0.92	±	2.62	3.42	±	9.69	No
	12/31/23	Cesium-137	0.00	±	65.50	0.00	±	242.35	No
	12/31/23	Plutonium-238	-1.51	±	1.85	-5.59	±	6.85	No
	12/31/23	Plutonium-239/240	0.00	±	1.85	0.00	±	6.85	No
	12/31/23	Strontium-90	-44.30	±	30.50	-163.91	±	112.85	No
	12/31/23	Uranium-233/234	4.02	±	5.90	14.87	±	21.83	No
	12/31/23	Uranium-238	1.31	±	3.71	4.85	±	13.73	No
ONSITE									
ATR COMPLEX	12/31/23	Americium-241	13.60	±	3.77	50.32	±	13.95	**Yes**
	12/31/23	Cesium-137	0.00	±	39.10	0.00	±	144.67	No
	12/31/23	Plutonium-238	0.82	±	2.17	3.04	±	8.03	No
	12/31/23	Plutonium-239/240	0.00	±	2.01	0.00	±	7.44	No
	12/31/23	Strontium-90	111.00	±	40.80	410.70	±	150.96	No
	12/31/23	Uranium-233/234	13.00	±	6.04	48.10	±	22.35	No
	12/31/23	Uranium-238	6.61	±	4.72	24.46	±	17.46	No
CFA	12/31/23	Americium-241	-1.05	±	2.37	-3.89	±	8.77	No
	12/31/23	Cesium-137	-95.30	±	68.40	-352.61	±	253.08	No
	12/31/23	Plutonium-238	-1.38	±	2.12	-5.11	±	7.84	No
	12/31/23	Plutonium-239/240	-0.38	±	2.93	-1.41	±	10.84	No
	12/31/23	Strontium-90	-11.50	±	35.60	-42.55	±	131.72	No
	12/31/23	Uranium-233/234	3.32	±	4.64	12.28	±	17.17	No
	12/31/23	Uranium-238	13.00	±	6.08	48.10	±	22.50	No
EBR-I	12/31/23	Americium-241	0.07	±	2.52	0.25	±	9.32	No
	12/31/23	Cesium-137	30.80	±	26.90	113.96	±	99.53	No
	12/31/23	Plutonium-238	1.63	±	3.13	6.03	±	11.58	No
	12/31/23	Plutonium-239/240	3.26	±	3.83	12.06	±	14.17	No
	12/31/23	Strontium-90	-7.86	±	32.50	-29.08	±	120.25	No
	12/31/23	Uranium-233/234	10.10	±	6.87	37.37	±	25.42	No
	12/31/23	Uranium-238	3.64	±	4.91	13.47	±	18.17	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
EFS	12/31/23	Americium-241	1.46	±	2.97	5.40	±	10.99	No
	12/31/23	Cesium-137	48.00	±	32.70	177.60	±	120.99	No
	12/31/23	Plutonium-238	-1.65	±	1.55	-6.11	±	5.74	No
	12/31/23	Plutonium-239/240	-0.01	±	1.81	-0.04	±	6.70	No
	12/31/23	Strontium-90	89.70	±	40.40	331.89	±	149.48	No
	12/31/23	Uranium-233/234	10.60	±	6.24	39.22	±	23.09	No
	12/31/23	Uranium-238	6.70	±	5.15	24.79	±	19.06	No
GATE 4	12/31/23	Americium-241	-0.47	±	2.08	-1.75	±	7.70	No
	12/31/23	Cesium-137	35.00	±	38.00	129.50	±	140.60	No
	12/31/23	Plutonium-238	1.40	±	2.68	5.18	±	9.92	No
	12/31/23	Plutonium-239/240	0.52	±	2.75	1.91	±	10.18	No
	12/31/23	Strontium-90	61.30	±	33.00	226.81	±	122.10	No
	12/31/23	Uranium-233/234	7.02	±	3.97	25.97	±	14.69	No
	12/31/23	Uranium-238	5.56	±	3.37	20.57	±	12.47	No
HWY 26 REST AREA	12/31/23	Americium-241	1.27	±	2.44	4.70	±	9.03	No
	12/31/23	Cesium-137	0.00	±	29.70	0.00	±	109.89	No
	12/31/23	Plutonium-238	0.00	±	2.23	0.00	±	8.25	No
	12/31/23	Plutonium-239/240	-1.82	±	2.23	-6.73	±	8.25	No
	12/31/23	Strontium-90	-22.60	±	34.50	-83.62	±	127.65	No
	12/31/23	Uranium-233/234	1.10	±	4.08	4.07	±	15.10	No
	12/31/23	Uranium-238	11.70	±	5.66	43.29	±	20.94	No
INTEC (NE CORNER) [a]	12/31/23	Americium-241	10.50	±	5.42	38.85	±	20.05	No
	12/31/23	Cesium-137	-76.00	±	122.00	-281.20	±	451.40	No
	12/31/23	Plutonium-238	3.58	±	3.59	13.25	±	13.28	No
	12/31/23	Plutonium-239/240	7.16	±	4.14	26.49	±	15.32	No
	12/31/23	Strontium-90	117.00	±	41.60	432.90	±	153.92	No
	12/31/23	Uranium-233/234	6.52	±	8.16	24.12	±	30.19	No
	12/31/23	Uranium-238	14.20	±	9.21	52.54	±	34.08	No
INTEC (QA)	12/31/23	Americium-241	1.96	±	2.82	7.25	±	10.43	No
	12/31/23	Cesium-137	19.00	±	26.70	70.30	±	98.79	No
	12/31/23	Plutonium-238	6.64	±	4.32	24.57	±	15.98	No
	12/31/23	Plutonium-239/240	1.96	±	3.42	7.25	±	12.65	No
	12/31/23	Strontium-90	8.01	±	31.60	29.64	±	116.92	No
	12/31/23	Uranium-233/234	9.17	±	4.43	33.93	±	16.39	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Uranium-238	-0.27	±	2.09	-1.01	±	7.73	No
INTEC (WEST SIDE)	12/31/23	Americium-241	1.92	±	3.35	7.10	±	12.40	No
	12/31/23	Cesium-137	3.84	±	28.60	14.21	±	105.82	No
	12/31/23	Plutonium-238	2.27	±	3.19	8.40	±	11.80	No
	12/31/23	Plutonium-239/240	1.35	±	2.58	5.00	±	9.55	No
	12/31/23	Strontium-90	82.90	±	39.60	306.73	±	146.52	No
	12/31/23	Uranium-233/234	3.26	±	4.58	12.06	±	16.95	No
	12/31/23	Uranium-238	10.60	±	5.55	39.22	±	20.54	No
MAIN GATE	12/31/23	Americium-241	1.16	±	2.22	4.29	±	8.21	No
	12/31/23	Cesium-137	21.60	±	22.80	79.92	±	84.36	No
	12/31/23	Plutonium-238	-0.88	±	2.91	-3.24	±	10.77	No
	12/31/23	Plutonium-239/240	-3.51	±	3.28	-12.99	±	12.14	No
	12/31/23	Strontium-90	73.30	±	39.50	271.21	±	146.15	No
	12/31/23	Uranium-233/234	1.01	±	4.16	3.74	±	15.39	No
	12/31/23	Uranium-238	8.48	±	5.16	31.38	±	19.09	No
MFC NORTH	12/31/23	Americium-241	2.04	±	3.56	7.55	±	13.17	No
	12/31/23	Cesium-137	0.78	±	60.40	2.90	±	223.48	No
	12/31/23	Chlorine-36	3.55	±	15.10	13.14	±	55.87	No
	12/31/23	Plutonium-238	0.00	±	1.48	0.00	±	5.48	No
	12/31/23	Plutonium-239/240	0.00	±	1.81	0.00	±	6.70	No
	12/31/23	Strontium-90	117.00	±	40.40	432.90	±	149.48	No
	12/31/23	Uranium-233/234	22.80	±	8.17	84.36	±	30.23	No
	12/31/23	Uranium-238	9.86	±	5.33	36.48	±	19.72	No
MFC SOUTH	12/31/23	Americium-241	-1.59	±	2.45	-5.88	±	9.07	No
	12/31/23	Cesium-137	0.00	±	37.30	0.00	±	138.01	No
	12/31/23	Chlorine-36	10.00	±	14.00	37.00	±	51.80	No
	12/31/23	Plutonium-238	0.00	±	2.17	0.00	±	8.03	No
	12/31/23	Plutonium-239/240	-4.60	±	2.66	-17.02	±	9.84	No
	12/31/23	Strontium-90	15.40	±	33.50	56.98	±	123.95	No
	12/31/23	Uranium-233/234	1.92	±	4.10	7.10	±	15.17	No
	12/31/23	Uranium-238	5.25	±	4.04	19.43	±	14.95	No
NRF	12/31/23	Americium-241	-0.57	±	2.49	-2.09	±	9.21	No
	12/31/23	Cesium-137	0.00	±	42.70	0.00	±	157.99	No
	12/31/23	Plutonium-238	-3.70	±	2.27	-13.69	±	8.40	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Plutonium-239/240	3.70	±	3.70	13.69	±	13.69	No
	12/31/23	Strontium-90	102.00	±	41.30	377.40	±	152.81	No
	12/31/23	Uranium-233/234	-1.12	±	3.97	-4.14	±	14.69	No
	12/31/23	Uranium-238	3.74	±	3.80	13.84	±	14.06	No
PBF	12/31/23	Americium-241	0.09	±	3.37	0.33	±	12.47	No
	12/31/23	Cesium-137	0.00	±	28.10	0.00	±	103.97	No
	12/31/23	Plutonium-238	0.82	±	1.42	3.03	±	5.25	No
	12/31/23	Plutonium-239/240	0.00	±	1.64	0.00	±	6.07	No
	12/31/23	Strontium-90	12.00	±	36.00	44.40	±	133.20	No
	12/31/23	Uranium-233/234	2.23	±	4.09	8.25	±	15.13	No
	12/31/23	Uranium-238	7.89	±	4.37	29.19	±	16.17	No
RHLLW	12/31/23	Americium-241	2.69	±	2.70	9.95	±	9.99	No
	12/31/23	Cesium-137	4.12	±	26.80	15.24	±	99.16	No
	12/31/23	Plutonium-238	-0.92	±	2.76	-3.40	±	10.21	No
	12/31/23	Plutonium-239/240	5.51	±	3.44	20.39	±	12.73	No
	12/31/23	Strontium-90	68.40	±	39.10	253.08	±	144.67	No
	12/31/23	Uranium-233/234	-3.21	±	3.16	-11.88	±	11.69	No
	12/31/23	Uranium-238	2.93	±	3.40	10.84	±	12.58	No
RWMC	12/31/23	Americium-241	497.00	±	45.80	1838.90	±	169.46	**Yes**
	12/31/23	Cesium-137	0.00	±	61.20	0.00	±	226.44	No
	12/31/23	Plutonium-238	30.80	±	7.04	113.96	±	26.05	**Yes**
	12/31/23	Plutonium-239/240	1890.00	±	121.00	6993.00	±	447.70	**Yes**
	12/31/23	Strontium-90	-22.70	±	35.00	-83.99	±	129.50	No
	12/31/23	Uranium-233/234	14.60	±	7.99	54.02	±	29.56	No
	12/31/23	Uranium-238	15.50	±	7.61	57.35	±	28.16	No
RWMC (QA)	12/31/23	Americium-241	231.00	±	28.30	854.70	±	104.71	**Yes**
	12/31/23	Cesium-137	-69.70	±	32.00	-257.89	±	118.40	No
	12/31/23	Plutonium-238	0.81	±	1.82	3.01	±	6.73	No
	12/31/23	Plutonium-239/240	57.70	±	7.64	213.49	±	28.27	**Yes**
	12/31/23	Strontium-90	76.30	±	38.80	282.31	±	143.56	No
	12/31/23	Uranium-233/234	15.10	±	6.18	55.87	±	22.87	No
	12/31/23	Uranium-238	10.40	±	5.03	38.48	±	18.61	No
RWMC SOUTH	12/31/23	Americium-241	38.40	±	9.98	142.08	±	36.93	**Yes**
	12/31/23	Cesium-137	0.00	±	30.50	0.00	±	112.85	No

Table C-3. Quarterly cesium-137, strontium-90, and actinide concentrations in composite air filters.

Sampling Group and Location	Sampling Date	Analyte	Result ± 1s Uncertainty ($\times 10^{-18}$ µCi/mL)			Result ± 1s Uncertainty ($\times 10^{-14}$ Bq/mL)			Result > 3s
	12/31/23	Plutonium-238	0.88	±	1.52	3.25	±	5.62	No
	12/31/23	Plutonium-239/240	16.70	±	4.26	61.79	±	15.76	**Yes**
	12/31/23	Strontium-90	-56.30	±	30.60	-208.31	±	113.22	No
	12/31/23	Uranium-233/234	2.95	±	3.86	10.92	±	14.28	No
	12/31/23	Uranium-238	6.33	±	4.22	23.42	±	15.61	No
SMC	12/31/23	Americium-241	-0.49	±	2.17	-1.82	±	8.03	No
	12/31/23	Cesium-137	0.00	±	30.70	0.00	±	113.59	No
	12/31/23	Plutonium-238	0.00	±	1.76	0.00	±	6.51	No
	12/31/23	Plutonium-239/240	1.76	±	2.15	6.51	±	7.96	No
	12/31/23	Strontium-90	-61.90	±	26.80	-229.03	±	99.16	No
	12/31/23	Uranium-233/234	2.99	±	5.13	11.06	±	18.98	No
	12/31/23	Uranium-238	0.95	±	2.70	3.52	±	9.99	No
VAN BUREN GATE	12/31/23	Americium-241	4.79	±	4.33	17.72	±	16.02	No
	12/31/23	Cesium-137	-88.00	±	57.90	-325.60	±	214.23	No
	12/31/23	Plutonium-238	0.00	±	2.14	0.00	±	7.92	No
	12/31/23	Plutonium-239/240	-0.76	±	1.69	-2.80	±	6.25	No
	12/31/23	Strontium-90	116.00	±	42.20	429.20	±	156.14	No
	12/31/23	Uranium-233/234	9.98	±	5.70	36.93	±	21.09	No
	12/31/23	Uranium-238	7.36	±	4.46	27.23	±	16.50	No
VAN BUREN (QA)	12/31/23	Americium-241	1.10	±	3.12	4.07	±	11.54	No
	12/31/23	Cesium-137	0.00	±	27.20	0.00	±	100.64	No
	12/31/23	Plutonium-238	0.00	±	2.22	0.00	±	8.21	No
	12/31/23	Plutonium-239/240	-3.61	±	2.86	-13.36	±	10.58	No
	12/31/23	Strontium-90	-30.20	±	33.40	-111.74	±	123.58	No
	12/31/23	Uranium-233/234	13.20	±	6.65	48.84	±	24.61	No
	12/31/23	Uranium-238	8.82	±	5.02	32.63	±	18.57	No

a. The sampler located at INTEC (NE Corner) was inoperable for several weeks due to a power outage.

Table C-4. Tritium concentrations in atmospheric moisture.

Sampling Group and Location	Sampling Date	Result ± 1s Uncertainty ($\times 10^{-13}$ µCi/mL$_{air}$)			Result ± 1s Uncertainty ($\times 10^{-9}$ Bq/mL$_{air}$)			Result > 3s
BOUNDARY								
ATOMIC CITY	10/17/23	-0.28	±	1.81	-1.04	±	6.70	No
	11/21/23	1.84	±	1.83	6.81	±	6.77	No
HOWE	10/10/23	0.75	±	2.03	2.79	±	7.51	No
	11/14/23	-1.03	±	1.67	-3.81	±	6.18	No
OFFSITE								
CRATERS OF THE MOON	10/31/23	0.62	±	1.48	2.30	±	5.48	No
IDAHO FALLS	10/17/23	2.79	±	1.21	10.32	±	4.48	No
	10/18/23	2.47	±	2.41	9.14	±	8.92	No
	11/21/23	2.12	±	1.91	7.84	±	7.07	No
	11/28/23	1.20	±	1.75	4.44	±	6.48	No
ONSITE								
EFS	10/31/23	4.82	±	2.06	17.83	±	7.62	No
	12/20/23	0.57	±	1.24	2.12	±	4.59	No
RHLLW	10/10/23	2.51	±	2.30	9.29	±	8.51	No
	11/14/23	11.80	±	2.31	43.66	±	8.55	**Yes**
VAN BUREN	10/10/23	-1.99	±	1.48	-7.36	±	5.48	No
	11/21/23	4.09	±	1.90	15.13	±	7.03	No

Table C-5. Monthly and weekly tritium concentrations in precipitation.

Location	Start Date	End Date	Result ± 1s Uncertainty (pCi/L)			Result ± 1s Uncertainty (Bq/L)			Result > 3s
BOUNDARY									
ATOMIC CITY	10/31/23	11/07/23	-32.70	±	26.20	-1.21	±	0.97	No
	11/28/23	12/05/23	-4.01	±	27.10	-0.15	±	1.00	No
HOWE	09/26/23	10/03/23	-20.30	±	26.90	-0.75	±	1.00	No
	10/24/23	10/31/23	-3.55	±	27.50	-0.13	±	1.02	No
	10/31/23	11/07/23	-9.79	±	27.20	-0.36	±	1.01	No
	11/14/23	11/21/23	-6.31	±	27.00	-0.23	±	1.00	No
OFFSITE									
IDAHO FALLS	10/01/23	10/31/23	-22.80	±	26.40	-0.84	±	0.98	No
	11/01/23	11/30/23	45.60	±	29.50	1.69	±	1.09	No
	12/01/23	12/31/23	20.50	±	27.70	0.76	±	1.02	No
ONSITE									
EFS	09/26/23	10/03/23	19.90	±	28.70	0.74	±	1.06	No
	10/17/23	10/24/23	7.72	±	28.40	0.29	±	1.05	No
	10/24/23	10/31/23	28.40	±	29.10	1.05	±	1.08	No
	10/31/23	11/07/23	8.40	±	27.80	0.31	±	1.03	No

Table C-6. Gross alpha, gross beta, and tritium concentrations in surface water and drinking water.

Location	Sampling Date	Analyte	Result ± 1s Uncertainty (pCi/L)			Result ± 1s Uncertainty (Bq/L)			Result > 3s
SURFACE WATER									
ALPHEUS SPRINGS	11/27/23	GROSS ALPHA	1.55	±	0.87	0.06	±	0.03	No
	11/27/23	GROSS BETA	6.78	±	0.74	0.25	±	0.03	**Yes**
	11/27/23	TRITIUM	6.22	±	30.00	0.23	±	1.11	No
BILL JONES, JR. TROUT FARM	11/27/23	GROSS ALPHA	2.23	±	0.88	0.08	±	0.03	No
	11/27/23	GROSS BETA	4.60	±	0.56	0.17	±	0.02	**Yes**
	11/27/23	TRITIUM	13.00	±	30.90	0.48	±	1.14	No
CLEAR SPRINGS	11/27/23	GROSS ALPHA	1.96	±	0.87	0.07	±	0.03	No
	11/27/23	GROSS BETA	6.25	±	0.62	0.23	±	0.02	**Yes**
	11/27/23	TRITIUM	11.30	±	29.70	0.42	±	1.10	No
CLEAR SPRINGS (QA)	11/27/23	GROSS ALPHA	1.08	±	0.76	0.04	±	0.03	No
	11/27/23	GROSS BETA	3.71	±	0.63	0.14	±	0.02	**Yes**
	11/27/23	TRITIUM	-32.10	±	28.10	-1.19	±	1.04	No
DRINKING WATER									
ATOMIC CITY	11/30/23	GROSS ALPHA	2.86	±	0.99	0.11	±	0.04	No
	11/30/23	GROSS BETA	3.78	±	0.56	0.14	±	0.02	**Yes**
	11/30/23	TRITIUM	23.20	±	31.10	0.86	±	1.15	No
CRATERS OF THE MOON [a]		GROSS ALPHA		±		0.00	±	0.00	No
		GROSS BETA		±		0.00	±	0.00	No
		TRITIUM		±		0.00	±	0.00	No
HOWE	11/22/23	GROSS ALPHA	2.97	±	0.93	0.11	±	0.03	**Yes**
	11/22/23	GROSS BETA	2.48	±	0.47	0.09	±	0.02	**Yes**
	11/22/23	TRITIUM	23.50	±	31.30	0.87	±	1.16	No
IDAHO FALLS	11/22/23	GROSS ALPHA	0.61	±	0.66	0.02	±	0.02	No
	11/22/23	GROSS BETA	3.12	±	0.58	0.12	±	0.02	**Yes**
	11/22/23	TRITIUM	62.30	±	34.10	2.31	±	1.26	No
MINIDOKA	11/27/23	GROSS ALPHA	2.83	±	0.90	0.10	±	0.03	**Yes**
	11/27/23	GROSS BETA	4.37	±	0.58	0.16	±	0.02	**Yes**
	11/27/23	TRITIUM	10.80	±	31.00	0.40	±	1.15	No
MUD LAKE	11/28/23	GROSS ALPHA	0.27	±	0.47	0.01	±	0.02	No
	11/28/23	GROSS BETA	5.24	±	0.56	0.19	±	0.02	**Yes**
	11/28/23	TRITIUM	8.39	±	30.10	0.31	±	1.11	No
REST AREA	11/30/23	GROSS ALPHA	1.68	±	0.89	0.06	±	0.03	No
	11/30/23	GROSS BETA	3.22	±	0.49	0.12	±	0.02	**Yes**
	11/30/23	TRITIUM	-10.60	±	29.40	-0.39	±	1.09	No
SHOSHONE	11/27/23	GROSS ALPHA	1.98	±	0.83	0.07	±	0.03	No
	11/27/23	GROSS BETA	2.34	±	0.51	0.09	±	0.02	**Yes**
	11/27/23	TRITIUM	10.50	±	29.50	0.39	±	1.09	No

a. Was not able to collect a drinking water sample at Craters of the Moon location due to water shut off.

Table C-7. Weekly and monthly iodine-131 and cesium-137 concentrations in milk.

		Iodine-131							Cesium-137						
Location	Sampling Date	Result ± 1s Uncertainty (pCi/L)			Result ± 1s Uncertainty (Bq/L)			Result > 3s	Result ± 1s Uncertainty (pCi/L)			Result ± 1s Uncertainty (Bq/L)			Result > 3s
CONTROL	10/17/23	-0.06	±	0.15	0.00	±	0.01	No	-0.22	±	1.90	-0.01	±	0.07	No
	11/14/23	-0.10	±	0.17	0.00	±	0.01	No	1.00	±	1.51	0.04	±	0.06	No
	12/18/23	0.21	±	0.20	0.01	±	0.01	No	-2.27	±	1.80	-0.08	±	0.07	No
DIETRICH	10/16/23	-0.08	±	0.16	0.00	±	0.01	No	-0.78	±	2.06	-0.03	±	0.08	No
	11/13/23	-0.02	±	0.15	0.00	±	0.01	No	2.26	±	2.32	0.08	±	0.09	No
	12/19/23	-0.35	±	0.23	-0.01	±	0.01	No	0.00	±	5.52	0.00	±	0.20	No
duplicate	12/19/23	0.01	±	0.23	0.00	±	0.01	No	1.84	±	2.02	0.07	±	0.07	No
HOWE	10/16/23	0.38	±	0.20	0.01	±	0.01	No	0.39	±	2.26	0.01	±	0.08	No
	11/13/23	-0.56	±	0.22	-0.02	±	0.01	No	1.03	±	1.79	0.04	±	0.07	No
	12/19/23	0.25	±	0.21	0.01	±	0.01	No	-1.15	±	1.95	-0.04	±	0.07	No
MINIDOKA	10/16/23	0.11	±	0.18	0.00	±	0.01	No	-0.43	±	2.23	-0.02	±	0.08	No
	11/13/23	0.51	±	0.25	0.02	±	0.01	No	2.89	±	1.94	0.11	±	0.07	No
	12/19/23	-0.05	±	0.19	0.00	±	0.01	No	-1.23	±	2.02	-0.05	±	0.07	No
MONTEVIEW	10/17/23	-0.08	±	0.16	0.00	±	0.01	No	4.05	±	2.34	0.15	±	0.09	No
	11/15/23	-0.05	±	0.12	0.00	±	0.00	No	4.46	±	2.25	0.17	±	0.08	No
	12/18/23	0.00	±	0.35	0.00	±	0.01	No	-1.79	±	2.18	-0.07	±	0.08	No
RIGBY	10/03/23	0.16	±	0.18	0.01	±	0.01	No	2.94	±	2.10	0.11	±	0.08	No
	10/09/23	0.22	±	0.20	0.01	±	0.01	No	0.94	±	1.77	0.03	±	0.07	No
	10/17/23	-0.05	±	0.12	0.00	±	0.00	No	2.42	±	2.87	0.09	±	0.11	No
	10/23/23	0.10	±	0.11	0.00	±	0.00	No	1.19	±	1.68	0.04	±	0.06	No
	10/31/23	0.11	±	0.19	0.00	±	0.01	No	-2.37	±	1.98	-0.09	±	0.07	No
	11/06/23	0.43	±	0.26	0.02	±	0.01	No	2.18	±	1.94	0.08	±	0.07	No
	11/14/23	0.31	±	0.17	0.01	±	0.01	No	2.16	±	4.78	0.08	±	0.18	No
	11/20/23	0.23	±	0.14	0.01	±	0.01	No	0.00	±	0.00	0.00	±	0.00	No
	11/28/23	0.14	±	0.17	0.01	±	0.01	No	3.86	±	2.42	0.14	±	0.09	No
	12/06/23	-0.06	±	0.21	0.00	±	0.01	No	-0.97	±	1.79	-0.04	±	0.07	No
	12/12/23	-0.11	±	0.11	0.00	±	0.00	No	-1.86	±	2.45	-0.07	±	0.09	No
	12/18/23	-0.09	±	0.24	0.00	±	0.01	No	2.18	±	2.48	0.08	±	0.09	No
TERRETON	10/03/23	-0.03	±	0.19	0.00	±	0.01	No	4.55	±	2.36	0.17	±	0.09	No
	10/09/23	-0.30	±	0.22	-0.01	±	0.01	No	2.92	±	2.36	0.11	±	0.09	No
	10/17/23	-0.11	±	0.12	0.00	±	0.00	No	-0.94	±	2.10	-0.03	±	0.08	No
duplicate	10/17/23	-0.38	±	0.17	-0.01	±	0.01	No	-0.67	±	1.53	-0.02	±	0.06	No
	10/23/23	-0.07	±	0.23	0.00	±	0.01	No	1.64	±	2.46	0.06	±	0.09	No
	10/31/23	0.34	±	0.24	0.01	±	0.01	No	0.34	±	1.76	0.01	±	0.07	No
	11/06/23	-0.11	±	0.20	0.00	±	0.01	No	7.82	±	3.23	0.29	±	0.12	No
	11/14/23	-0.01	±	0.17	0.00	±	0.01	No	1.67	±	3.10	0.06	±	0.11	No
	11/20/23	0.09	±	0.13	0.00	±	0.00	No	-0.05	±	2.16	0.00	±	0.08	No
	11/28/23	0.16	±	0.18	0.01	±	0.01	No	0.25	±	2.81	0.01	±	0.10	No
	12/06/23	0.27	±	0.23	0.01	±	0.01	No	2.92	±	1.80	0.11	±	0.07	No
	12/12/23	0.07	±	0.12	0.00	±	0.00	No	0.85	±	1.76	0.03	±	0.07	No
	12/18/23	-0.43	±	0.23	-0.02	±	0.01	No	2.55	±	2.15	0.09	±	0.08	No

Table C-8. Strontium-90 and tritium concentrations in milk.

Location	Sampling Date	Result ± 1s Uncertainty			Result ± 1s Uncertainty			Result > 3s
STRONTIUM-90								
CONTROL	11/14/23	0.26	±	0.15	0.01	±	0.01	No
DIETRICH	11/13/23	0.08	±	0.12	0.00	±	0.00	No
HOWE	11/13/23	0.27	±	0.11	0.01	±	0.00	No
MINIKOKA	11/13/23	0.13	±	0.07	0.00	±	0.00	No
MONTEVIEW	11/15/23	0.22	±	0.12	0.01	±	0.00	No
RIGBY	11/14/23	0.47	±	0.18	0.02	±	0.01	No
TERRETON	11/14/23	0.17	±	0.09	0.01	±	0.00	No
TRITIUM								
CONTROL (BROOMFIELD)	11/14/23	-2.63	±	24.30	-0.10	±	0.90	No
DIETRICH	11/13/23	-37.70	±	21.30	-1.40	±	0.79	No
HOWE	11/13/23	-51.30	±	21.20	-1.90	±	0.79	No
MINIDOKA	11/13/23	-43.50	±	22.00	-1.61	±	0.81	No
MONTEVIEW	11/15/23	77.30	±	29.10	2.86	±	1.08	No
RIGBY	11/14/23	-1.86	±	23.40	-0.07	±	0.87	No
TERRETON	11/14/23	-4.46	±	24.00	-0.17	±	0.89	No

Table C-9. Actinide, gamma-emitting radionuclide, and strontium-90 concentrations in edible tissues in waterfowl.

Location	Sampling Date	Species	Sub-sample	Analyte	Result ± Uncertainty(1s) pCi/kg			Result ± Uncertainty(1s) (x 10^{-2}) Bq/kg			Result > 3s
ATR COMPLEX	10/06/23	Green-winged Teal	Edible	AMERICIUM-241	1.45	±	2.18	5.37	±	8.07	No
				CESIUM-137	1650.00	±	77.10	6111.11	±	285.56	**Yes**
				COBALT-60	370.00	±	30.30	1370.37	±	112.22	**Yes**
				PLUTONIUM-238	2.59	±	1.62	9.59	±	6.00	No
				PLUTONIUM-239/240	2.15	±	1.30	7.96	±	4.81	No
				STRONTIUM-90	161.00	±	31.70	596.30	±	117.41	**Yes**
				ZINC-65	820.00	±	72.60	3037.04	±	268.89	**Yes**
			Exterior	AMERICIUM-241	2.95	±	2.38	10.93	±	8.81	No
				CESIUM-137	1190.00	±	69.80	4407.41	±	258.52	**Yes**
				COBALT-60	613.00	±	40.60	2270.37	±	150.37	**Yes**
				PLUTONIUM-238	2.00	±	1.58	7.41	±	5.85	No
				PLUTONIUM-239/240	2.49	±	1.93	9.22	±	7.15	No
				STRONTIUM-90	393.00	±	71.30	1455.56	±	264.07	**Yes**
				ZINC-65	754.00	±	60.40	2792.59	±	223.70	**Yes**
			Remainder	AMERICIUM-241	0.43	±	1.39	1.61	±	5.15	No
				CESIUM-137	1610.00	±	97.30	5962.96	±	360.37	**Yes**
				COBALT-60	662.00	±	41.30	2451.85	±	152.96	**Yes**
				PLUTONIUM-238	0.00	±	1.76	0.00	±	6.52	No
				PLUTONIUM-239/240	4.44	±	2.72	16.44	±	10.07	No
				STRONTIUM-90	559.00	±	102.00	2070.37	±	377.78	**Yes**
				ZINC-65	1090.00	±	82.60	4037.04	±	305.93	**Yes**
ATR COMPLEX	10/13/23	Mallard	Edible	AMERICIUM-241	2.58	±	2.07	9.56	±	7.67	No
				CESIUM-137	-0.63	±	2.66	-2.32	±	9.85	No
				PLUTONIUM-238	1.39	±	1.23	5.15	±	4.56	No
				PLUTONIUM-239/240	0.00	±	1.31	0.00	±	4.85	No
				STRONTIUM-90	-2.13	±	7.05	-7.89	±	26.11	No
			Exterior	AMERICIUM-241	0.49	±	1.56	1.80	±	5.78	No
				CESIUM-137	15.70	±	6.85	58.15	±	25.37	No
				PLUTONIUM-238	1.61	±	1.61	5.96	±	5.96	No
				PLUTONIUM-239/240	2.14	±	1.70	7.93	±	6.30	No
				STRONTIUM-90	19.10	±	7.30	70.74	±	27.04	No
				AMERICIUM-241	1.83	±	1.56	6.78	±	5.78	No

Table C-9. Actinide, gamma-emitting radionuclide, and strontium-90 concentrations in edible tissues in waterfowl.

Location	Sampling Date	Species	Sub-sample	Analyte	Result ± Uncertainty(1s) pCi/kg			Result ± Uncertainty(1s) ($\times 10^{-2}$) Bq/kg			Result > 3s
			Remainder	CESIUM-137	7.12	±	4.37	26.37	±	16.19	No
				PLUTONIUM-238	-0.33	±	1.46	-1.23	±	5.41	No
				PLUTONIUM-239/240	1.76	±	2.47	6.52	±	9.15	No
				STRONTIUM-90	-5.62	±	6.09	-20.81	±	22.56	No
ATR COMPLEX	10/13/23	Mallard	Edible	AMERICIUM-241	-0.86	±	1.82	-3.17	±	6.74	No
				CESIUM-137	5.88	±	3.91	21.78	±	14.48	No
				PLUTONIUM-238	0.00	±	1.17	0.00	±	4.33	No
				PLUTONIUM-239/240	-0.95	±	1.51	-3.53	±	5.59	No
				STRONTIUM-90	10.30	±	7.22	38.15	±	26.74	No
			Exterior	AMERICIUM-241	4.85	±	2.72	17.96	±	10.07	No
				CESIUM-137	9.95	±	8.80	36.85	±	32.59	No
				PLUTONIUM-238	-0.41	±	1.80	-1.51	±	6.67	No
				PLUTONIUM-239/240	-0.41	±	1.80	-1.51	±	6.67	No
				STRONTIUM-90	2.46	±	11.60	9.11	±	42.96	No
			Remainder	AMERICIUM-241	-0.47	±	1.58	-1.74	±	5.85	No
				CESIUM-137	3.33	±	4.95	12.33	±	18.33	No
				PLUTONIUM-238	1.39	±	1.23	5.15	±	4.56	No
				PLUTONIUM-239/240	0.00	±	1.14	0.00	±	4.22	No
				STRONTIUM-90	10.00	±	6.96	37.04	±	25.78	No
CONTROL (South Fork of the Snake River)	12/15/23	Mallard	Edible	AMERICIUM-241	2.95	±	2.25	10.93	±	8.33	No
				CESIUM-137	4.22	±	3.63	15.63	±	13.44	No
				PLUTONIUM-238	-0.91	±	2.07	-3.39	±	7.67	No
				PLUTONIUM-239/240	5.25	±	3.88	19.44	±	14.37	No
				STRONTIUM-90	8.52	±	7.55	31.56	±	27.96	No
			Exterior	AMERICIUM-241	-0.49	±	1.67	-1.83	±	6.19	No
				CESIUM-137	7.69	±	17.00	28.48	±	62.96	No
				PLUTONIUM-238	0.00	±	2.16	0.00	±	8.00	No
				PLUTONIUM-239/240	0.00	±	1.53	0.00	±	5.67	No
				STRONTIUM-90	15.90	±	9.19	58.89	±	34.04	No

Table C-9. Actinide, gamma-emitting radionuclide, and strontium-90 concentrations in edible tissues in waterfowl.

Location	Sampling Date	Species	Sub-sample	Analyte	Result ± Uncertainty(1s) pCi/kg			Result ± Uncertainty(1s) (x 10^{-2}) Bq/kg			Result > 3s
			Remainder	AMERICIUM-241	-0.02	±	1.69	-0.06	±	6.26	No
				CESIUM-137	0.40	±	5.30	1.49	±	19.63	No
				PLUTONIUM-238	0.46	±	2.44	1.69	±	9.04	No
				PLUTONIUM-239/240	0.46	±	2.44	1.69	±	9.04	No
				STRONTIUM-90	13.40	±	8.30	49.63	±	30.74	No
CONTROL (South Fork of the Snake River)	12/15/23	Mallard	Edible	AMERICIUM-241	-0.02	±	1.98	-0.09	±	7.33	No
				CESIUM-137	13.10	±	4.32	48.52	±	16.00	**Yes**
				PLUTONIUM-238	1.49	±	1.31	5.52	±	4.85	No
				PLUTONIUM-239/240	0.50	±	1.79	1.83	±	6.63	No
				STRONTIUM-90	-1.58	±	7.96	-5.85	±	29.48	No
			Exterior	AMERICIUM-241	2.61	±	2.58	9.67	±	9.56	No
				CESIUM-137	11.10	±	5.08	41.11	±	18.81	No
				PLUTONIUM-238	-1.40	±	2.15	-5.19	±	7.96	No
				PLUTONIUM-239/240	-0.47	±	2.05	-1.72	±	7.59	No
				STRONTIUM-90	6.40	±	8.66	23.70	±	32.07	No
			Remainder	AMERICIUM-241	1.15	±	1.44	4.26	±	5.33	No
				CESIUM-137	-9.26	±	5.93	-34.30	±	21.96	No
				PLUTONIUM-238	-1.71	±	2.03	-6.33	±	7.52	No
				PLUTONIUM-239/240	3.56	±	3.12	13.19	±	11.56	No
				STRONTIUM-90	-6.88	±	4.79	-25.48	±	17.74	No
CONTROL (Swan Valley)	10/13/23	Mallard	Edible	AMERICIUM-241	1.40	±	1.76	5.19	±	6.52	No
				CESIUM-137	2.53	±	2.47	9.37	±	9.15	No
				PLUTONIUM-238	0.00	±	2.29	0.00	±	8.48	No
				PLUTONIUM-239/240	4.00	±	2.75	14.81	±	10.19	No
				STRONTIUM-90	26.20	±	10.40	97.04	±	38.52	No
			Exterior	AMERICIUM-241	-0.01	±	1.65	-0.04	±	6.11	No
				CESIUM-137	-17.5	±	19.2	-64.81	±	71.11	No
				PLUTONIUM-238	0.97	±	1.95	3.60	±	7.22	No
				PLUTONIUM-239/240	0.00	±	2.17	-2.7E-06	±	8.04	No
				STRONTIUM-90	11.3	±	7.8	41.85	±	28.89	No

Table C-9. Actinide, gamma-emitting radionuclide, and strontium-90 concentrations in edible tissues in waterfowl.

Location	Sampling Date	Species	Sub-sample	Analyte	Result ± Uncertainty(1s) pCi/kg			Result ± Uncertainty(1s) ($\times 10^{-2}$) Bq/kg			Result > 3s
			Remainder	AMERICIUM-241	0.46	±	1.46	1.69	±	5.41	No
				CESIUM-137	0.19	±	5.52	0.71	±	20.44	No
				PLUTONIUM-238	2.49	±	1.8	9.22	±	6.67	No
				PLUTONIUM-239/240	3.48	±	1.93	12.89	±	7.15	No
				STRONTIUM-90	-5.27	±	4.86	-19.52	±	18.00	No

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
BOUNDARY							
Arco	Arco O-1	05/01/23	11/01/23	55.60	±	2.78	0.30
Atomic City	Atomic City E-1	05/01/23	11/01/23	61.70	±	3.09	0.33
	Atomic City O-2	05/01/23	11/01/23	61.40	±	3.07	0.33
Blue Dome	Blue Dome E-1	05/01/23	11/01/23	55.30	±	2.77	0.30
East Butte	RRL5 O-1	05/08/23	11/02/23	84.90	±	4.25	0.48
Frenchmans Cabin	RRL3 O-1	05/01/23	11/01/23	70.80	±	3.54	0.38
Howe	Howe O-3	05/01/23	11/01/23	57.40	±	2.87	0.31
	RRL24 O-1	05/01/23	11/01/23	51.50	±	2.58	0.28
Monteview	Monteview O-4	05/01/23	11/01/23	57.10	±	2.86	0.31
	RRL17 O-1	05/01/23	11/01/23	61.30	±	3.07	0.33
Mud Lake	Mud Lake O-5	05/01/23	11/01/23	71.40	±	3.57	0.39
Reno Ranch	Reno Ranch O-6	05/01/23	11/01/23	57.40	±	2.87	0.31
	Boundary Average			**62.15**			**0.34**
OFFSITE							
Aberdeen	Aberdeen E-1	05/01/23	11/01/23	55.50	±	2.78	0.30
Blackfoot	Blackfoot O-9	05/01/23	11/01/23	56.30	±	2.82	0.31
Craters of the Moon	Craters of Moon O-7	05/01/23	11/01/23	61.80	±	3.09	0.34
Dubois	Dubois E-1	05/01/23	11/01/23	56.50	±	2.83	0.31
Idaho Falls	Idaho Falls O-10	05/02/23	11/02/23	60.50	±	3.03	0.33
	IF-603E O-2	05/03/23	11/01/23	46.70	±	2.34	0.26
	IF-603N O-1	05/03/23	11/01/23	53.80	±	2.69	0.29
	IF-603S O-3	05/03/23	11/01/23	47.80	±	2.39	0.26
	IF-603W O-4	05/03/23	11/01/23	62.30	±	3.12	0.34
	IF-616N O-36	05/03/23	11/01/23	48.10	±	2.41	0.26
	IF-627 O-30	05/03/23	11/01/23	54.30	±	2.72	0.30
	IF-638E O-2	05/03/23	11/01/23	52.60	±	2.63	0.29
	IF-638N O-1	05/03/23	11/01/23	60.30	±	3.02	0.33
	IF-638S O-3	05/03/23	11/01/23	56.60	±	2.83	0.31
	IF-638W O-4	05/03/23	11/02/23	55.10	±	2.76	0.30
	IF-652A O-1	05/02/23	11/02/23	61.40	±	3.07	0.33
	IF-652A O-2	05/02/23	11/02/23	64.70	±	3.24	0.35
	IF-652A O-3	05/02/23	11/02/23	74.90	±	3.75	0.41
	IF-652A O-4	05/02/23	11/02/23	76.80	±	3.84	0.42
	IF-665 O-1	05/02/23	11/01/23	56.40	±	2.82	0.31
	IF-665 O-2	05/02/23	11/01/23	57.10	±	2.86	0.31
	IF-665 O-3	05/02/23	11/01/23	57.20	±	2.86	0.31

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
	IF-665 O-4	05/02/23	11/01/23	53.70	±	2.69	0.29
	IF-665 O-5	05/02/23	11/01/23	58.10	±	2.91	0.32
	IF-665W O-37	05/02/23	11/01/23	53.80	±	2.69	0.29
	IF-670D O-34	05/02/23	10/02/23	54.30	±	2.72	0.35
	IF-670E O-32	05/02/23	10/02/23	48.40	±	2.42	0.32
	IF-670N O-31	05/02/23	10/02/23	55.70	±	2.79	0.36
	IF-670S O-33	05/02/23	10/02/23	54.60	±	2.73	0.36
	IF-670W O-35	05/02/23	10/02/23	53.30	±	2.67	0.35
	IF-675D O-33	05/02/23	11/02/23	53.60	±	2.68	0.29
	IF-675E O-31	05/02/23	11/02/23	50.50	±	2.53	0.27
	[a] IF-675S O-34				±		
	IF-675W O-35	05/02/23	11/02/23	44.60	±	2.23	0.24
	IF-688B O-1	05/02/23	11/01/23	53.60	±	2.68	0.29
	IF-688B O-2	05/02/23	11/01/23	44.50	±	2.23	0.24
	IF-689 O-7	05/03/23	11/01/23	61.20	±	3.06	0.34
	IF-689 O-8	05/03/23	11/01/23	50.90	±	2.55	0.28
	IF-IDA O-38	05/02/23	11/01/23	47.10	±	2.36	0.26
	IF-IRC O-39	05/03/23	11/02/23	52.60	±	2.63	0.29
Jackson WY	Jackson E-1	05/01/23	11/05/23	56.00	±	2.80	0.30
Minidoka	Minidoka E-1	05/04/23	11/01/23	61.90	±	3.10	0.34
Roberts	RobNOAA	05/01/23	11/01/23	60.10	±	3.01	0.33
Sugar City	Sugar E-1	05/01/23	11/02/23	86.70	±	4.34	0.47
	Offsite Average			**56.56**			**0.31**
		ONSITE					
ARA	ARA I&II O-1	05/01/23	11/01/23	72.80	±	3.64	0.39
ATR Complex	LincolnBlvd O-5	05/01/23	11/01/23	71.70	±	3.59	0.39
	TRA O-1	05/01/23	11/02/23	75.00	±	3.75	0.40
	TRA O-10	05/01/23	11/02/23	139.20	±	6.96	0.75
	TRA O-11	05/01/23	11/02/23	123.40	±	6.17	0.67
	TRA O-12	05/01/23	11/02/23	72.30	±	3.62	0.39
	TRA O-13	05/01/23	11/02/23	80.00	±	4.00	0.43
	TRA O-14	05/01/23	11/02/23	69.10	±	3.46	0.37
	TRA O-15	05/01/23	11/02/23	70.10	±	3.51	0.38
	TRA O-16	05/01/23	11/02/23	73.30	±	3.67	0.40
	TRA O-17	05/01/23	11/02/23	71.60	±	3.58	0.39
	TRA O-18	05/01/23	11/02/23	75.10	±	3.76	0.40
	TRA O-19	05/01/23	11/02/23	77.30	±	3.87	0.42

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
	TRA O-20	05/01/23	11/02/23	76.50	±	3.83	0.41
	TRA O-21	05/01/23	11/02/23	62.10	±	3.11	0.33
	TRA O-22	05/01/23	11/02/23	64.00	±	3.20	0.35
	TRA O-23	05/01/23	11/02/23	75.50	±	3.78	0.41
	TRA O-24	05/01/23	11/02/23	70.00	±	3.50	0.38
	TRA O-25	05/01/23	11/02/23	69.60	±	3.48	0.38
	TRA O-26	05/01/23	11/02/23	78.20	±	3.91	0.42
	TRA O-27	05/01/23	11/02/23	65.60	±	3.28	0.35
	TRA O-28	05/01/23	11/02/23	72.70	±	3.64	0.39
	TRA O-6	05/01/23	11/02/23	73.80	±	3.69	0.40
	TRA O-7	05/01/23	11/02/23	79.10	±	3.96	0.43
	TRA O-8	05/01/23	11/02/23	83.80	±	4.19	0.45
	TRA O-9	05/01/23	11/02/23	91.20	±	4.56	0.49
CFA	CFA O-1	05/01/23	11/01/23	73.20	±	3.66	0.40
	LincolnBlvd O-1	05/01/23	11/01/23	60.50	±	3.03	0.33
EBR-I	EBR I O-1	05/01/23	11/01/23	56.90	±	2.85	0.31
	EBR I O-2	05/01/23	11/01/23	81.20	±	4.06	0.44
	EBR I O-3	05/01/23	11/01/23	265.10	±	13.26	1.44
EFS	EFS O-1	05/01/23	11/01/23	68.80	±	3.44	0.37
Gate 4	Gate4 O-1	05/01/23	11/01/23	53.90	±	2.70	0.29
Highway	Hwy20 Mile O-266	05/01/23	11/01/23	59.30	±	2.97	0.32
	Hwy20 Mile O-270	05/01/23	11/01/23	75.20	±	3.76	0.41
	Hwy20 Mile O-276	05/01/23	11/01/23	67.90	±	3.40	0.37
	Hwy22 T28 O-1	05/01/23	11/01/23	51.40	±	2.57	0.28
	Hwy28 N2300 O-2	05/01/23	11/01/23	57.20	±	2.86	0.31
	Hwy33 T17 O-3	05/01/23	11/01/23	61.00	±	3.05	0.33
Highway 26 Rest Area	REST O-1	05/01/23	11/01/23	58.30	±	2.92	0.32
INTEC	ICPP O-14	05/01/23	11/01/23	126.00	±	6.30	0.68
	ICPP O-15	05/01/23	11/01/23	165.30	±	8.27	0.90
	ICPP O-17	05/01/23	11/01/23	73.30	±	3.67	0.40
	ICPP O-19	05/01/23	11/01/23	96.00	±	4.80	0.52
	ICPP O-20	05/01/23	11/01/23	315.40	±	15.77	1.71
	ICPP O-21	05/01/23	11/01/23	96.30	±	4.82	0.52
	ICPP O-22	05/01/23	11/01/23	80.90	±	4.05	0.44
	ICPP O-25	05/01/23	11/01/23	105.70	±	5.29	0.57
	ICPP O-26	05/01/23	11/01/23	78.00	±	3.90	0.42
	ICPP O-27	05/01/23	11/01/23	210.30	±	10.52	1.14

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
	ICPP O-28	05/01/23	11/01/23	177.20	±	8.86	0.96
	ICPP O-30	05/01/23	11/01/23	216.50	±	10.83	1.17
	ICPP O-9	05/01/23	11/01/23	100.00	±	5.00	0.54
	ICPP TreeFarm O-1	05/01/23	11/01/23	122.00	±	6.10	0.66
	ICPP TreeFarm O-2	05/01/23	11/01/23	87.30	±	4.37	0.47
	ICPP TreeFarm O-3	05/01/23	11/01/23	96.40	±	4.82	0.52
	ICPP TreeFarm O-4	05/01/23	11/01/23	132.40	±	6.62	0.72
	LincolnBlvd O-3	05/01/23	11/01/23	68.20	±	3.41	0.37
Main Gate	Main Gate O-1	05/01/23	11/01/23	66.00	±	3.30	0.36
MFC	ANL O-12	05/01/23	11/01/23	54.40	±	2.72	0.29
	ANL O-14	05/01/23	11/01/23	58.00	±	2.90	0.31
	[a] ANL O-15				±		
	ANL O-16	05/01/23	11/01/23	65.60	±	3.28	0.36
	ANL O-18	05/01/23	11/01/23	62.90	±	3.15	0.34
	ANL O-19	05/01/23	11/01/23	59.00	±	2.95	0.32
	ANL O-20	05/01/23	11/01/23	72.90	±	3.65	0.40
	ANL O-21	05/01/23	11/01/23	69.40	±	3.47	0.38
	ANL O-22	05/01/23	11/01/23	79.60	±	3.98	0.43
	ANL O-23	05/01/23	11/01/23	88.60	±	4.43	0.48
	ANL O-24	05/01/23	11/01/23	65.90	±	3.30	0.36
	ANL O-25	05/01/23	11/01/23	81.60	±	4.08	0.44
	ANL O-26	05/01/23	11/01/23	89.10	±	4.46	0.48
	ANL O-7	05/01/23	11/01/23	61.70	±	3.09	0.33
	ANL O-8	05/01/23	11/01/23	58.60	±	2.93	0.32
	Haul E O-1	05/01/23	11/01/23	60.80	±	3.04	0.33
	RRL6 O-1	05/08/23	11/01/23	66.80	±	3.34	0.38
	TREAT O-1	05/02/23	11/02/23	55.60	±	2.78	0.30
	TREAT O-2	05/02/23	11/02/23	69.00	±	3.45	0.37
	TREAT O-3	05/02/23	11/02/23	59.80	±	2.99	0.32
	TREAT O-4	05/02/23	11/02/23	66.50	±	3.33	0.36
	TREAT O-5	05/02/23	11/02/23	63.40	±	3.17	0.34
	TREAT O-6	05/02/23	11/02/23	72.50	±	3.63	0.39
	TREAT O-7	05/02/23	11/02/23	73.70	±	3.69	0.40
	TREAT O-8	05/02/23	11/02/23	66.30	±	3.32	0.36
NRF	LincolnBlvd O-15	05/01/23	11/01/23	75.10	±	3.76	0.41
	LincolnBlvd O-9	05/01/23	11/01/23	79.50	±	3.98	0.43
	NRF O-11	05/01/23	11/01/23	76.80	±	3.84	0.42

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
	NRF O-16	05/01/23	11/01/23	69.00	±	3.45	0.37
	NRF O-18	05/01/23	11/01/23	63.90	±	3.20	0.35
	NRF O-19	05/01/23	11/01/23	74.10	±	3.71	0.40
	NRF O-20	05/01/23	11/01/23	68.40	±	3.42	0.37
	NRF O-25	05/01/23	11/01/23	77.60	±	3.88	0.42
	NRF O-26	05/01/23	11/01/23	74.90	±	3.75	0.41
	NRF O-27	05/01/23	11/01/23	60.40	±	3.02	0.33
	NRF O-28	05/01/23	11/01/23	74.60	±	3.73	0.40
	NRF O-29	05/01/23	11/01/23	61.60	±	3.08	0.33
	NRF O-30	05/01/23	11/01/23	66.00	±	3.30	0.36
	NRF O-31	05/01/23	11/01/23	75.70	±	3.79	0.41
	NRF O-32	05/01/23	11/01/23	72.50	±	3.63	0.39
PBF	Haul W O-2	05/01/23	11/01/23	58.90	±	2.95	0.32
	PBF SPERT O-1	05/01/23	11/01/23	69.60	±	3.48	0.38
RHLLW	RHLLW O-1	05/01/23	11/01/23	63.60	±	3.18	0.34
	RHLLW O-2	05/01/23	11/01/23	74.90	±	3.75	0.41
	RHLLW O-3	05/01/23	11/02/23	68.90	±	3.45	0.37
	RHLLW O-4	05/01/23	11/01/23	71.80	±	3.59	0.39
	RHLLW O-5	05/01/23	11/01/23	63.80	±	3.19	0.35
	RHLLW O-6	05/01/23	11/02/23	63.70	±	3.19	0.34
RWMC	RWMC O-11A	05/01/23	11/01/23	75.00	±	3.75	0.41
	RWMC O-13A	05/01/23	11/01/23	87.60	±	4.38	0.47
	RWMC O-19A	05/01/23	11/01/23	68.40	±	3.42	0.37
	RWMC O-21A	05/01/23	11/01/23	62.60	±	3.13	0.34
	RWMC O-23A	05/01/23	11/01/23	72.50	±	3.63	0.39
	RWMC O-25A	05/01/23	11/01/23	57.20	±	2.86	0.31
	RWMC O-27A	05/01/23	11/01/23	60.10	±	3.01	0.33
	RWMC O-29A	05/01/23	11/01/23	62.60	±	3.13	0.34
	RWMC O-39	05/01/23	11/01/23	77.60	±	3.88	0.42
	RWMC O-3A	05/01/23	11/01/23	71.20	±	3.56	0.39
	RWMC O-41	05/01/23	11/01/23	112.50	±	5.63	0.61
	RWMC O-43	05/01/23	11/01/23	61.80	±	3.09	0.33
	RWMC O-46	05/01/23	11/01/23	69.50	±	3.48	0.38
	RWMC O-47	05/01/23	11/01/23	61.30	±	3.07	0.33
	RWMC O-5A	05/01/23	11/01/23	62.50	±	3.13	0.34
	RWMC O-7A	05/01/23	11/01/23	63.90	±	3.20	0.35
	RWMC O-9A	05/01/23	11/01/23	83.20	±	4.16	0.45

Table C-10. Environmental radiation measurements using OSLDs.

Location	Dosimetry Name	Start Date	End Date	Radiation Measurement ± 1s Result		Sigma Uncertainty	Dose
				mrem			mrem/day
TAN	LincolnBlvd O-25	05/01/23	11/01/23	62.30	±	3.12	0.34
	TAN LOFT O-10	05/02/23	11/01/23	68.50	±	3.43	0.37
	TAN LOFT O-11	05/02/23	11/01/23	65.60	±	3.28	0.36
	TAN LOFT O-12	05/02/23	11/01/23	61.30	±	3.07	0.33
	TAN LOFT O-13	05/02/23	11/01/23	64.90	±	3.25	0.35
	TAN LOFT O-6	05/02/23	11/01/23	69.00	±	3.45	0.38
	TAN LOFT O-7	05/02/23	11/01/23	68.50	±	3.43	0.37
	TAN LOFT O-8	05/02/23	11/01/23	71.40	±	3.57	0.39
	TAN LOFT O-9	05/02/23	11/01/23	49.90	±	2.50	0.27
Van Buren	VANB O-1	05/01/23	11/01/23	59.80	±	2.99	0.32
	Onsite Average			**79.80**			**0.43**

a. Dosimeter lost indicated in red.

Appendix D
Statistical Analysis Results

Table D-1. Results of the Kruskal-Wallace one-way analysis of variance by ranks between onsite, boundary, and offsite sample groups by quarter and by month.

GROSS ALPHA					
Quarter	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	84	15505.00	184.5833		
Onsite	204	40871.00	200.3480	2.188019	0.3349
Offsite	96	17544.00	182.7500		
October	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	35	2853.500	81.52857		
Onsite	81	6297.000	77.74074	0.2044491	0.9028
Offsite	40	3095.500	77.38750		
November	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	28	1720.500	61.44643		
Onsite	69	4700.500	68.12319	1.035624	0.5958
Offsite	32	1964.000	61.37500		
December	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	21	938.500	44.69048		
Onsite	54	2915.500	53.99074	2.306425	0.3156
Offsite	24	1096.000	45.66667		
GROSS BETA					
Quarter	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	84	15753.00	187.5357		
Onsite	204	41867.50	205.2328	6.872813	0.0322
Offsite	96	16299.50	169.7865		
October	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	35	2576.500	73.61429		
Onsite	81	6816.000	84.14815	2.681331	0.2617
Offsite	40	2853.500	71.33750		
November	**Valid N**	**Sum of Ranks**	**Mean Ranks**	**H[a]**	**P[b]**
Boundary	28	1830.000	65.35714		
Onsite	69	5040.000	73.04348	10.33693	0.0057
Offsite	32	1515.000	47.34375		

Table D-1. continued.

December	Valid N	Sum of Ranks	Mean Ranks	H[a]	P[b]
Boundary	21	1081.500	51.50000		
Onsite	54	2938.000	54.40741	4.997463	0.0822
Offsite	24	930.500	38.77083		

a. Kruskal-Wallis test statistic calculated using mean ranks. This test assumes H is approximately distributed as χ^2.
b. A p-value (probability value) greater than 0.05 signifies no statistical difference between data groups. Any values below 0.05 are indicated in red.

Table D-2. Results of multiple comparisons of gross alpha results between locations during the fourth quarter. A 'p' value greater than 0.05 signifies no statistical difference between data groups. Any values below 0.05 are indicated in red. 'R' represents the average rank for each location.

Depend.: Coded result (x10-15)	Multiple Comparisons p values (2-tailed); Coded result (x10-15) (4th-Qtr-2023-Air_Query_with_Pu_reprep_reanalysis_results_KTC03-18-2024 in 4th-Qtr-2023-LVf) Independent (grouping) variable: Sample Location Kruskal-Wallis test: H (32, N= 384) =18.58279 p =.9717 Include condition: v7='gross alpha'																														
	Arco R:162.71	Atomic City R:157.08	ATR Complex R:230.88	Blackfoot R:187.08	Blue Dome R:194.17	CFA R:189.38	Craters of the Moon R:139.54	Dubois R:148.54	EBR 1 R:182.96	EFS R:267.56	FAA Tower R:178.50	Gate 4 R:201.54	Highway 26 Rest Area R:183.08	Howe R:185.00	Idaho Falls R:211.13	INTEC (NE corner) R:226.25	INTEC (west side) R:212.00	IRC R:187.83	IRC north R:228.13	Jackson, WY R:181.00	Main Gate R:193.13	MFC north R:192.88	MFC south R:191.38	Monteview R:195.96	NRF R:198.63	PBF R:181.00	RHLLW R:184.96	RWMC R:242.21	RWMC south R:190.67	SMC R:177.17	Sugar City R:178.75	Terreton R:218.67	Van Buren R:200.29
Arco		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Atomic City	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
ATR Complex	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Blackfoot	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Blue Dome	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
CFA	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Craters of the Moon	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Dubois	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
EBR 1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
EFS	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
FAA Tower	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Gate 4	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Highway 26 Rest Area	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Howe	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Idaho Falls	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
INTEC (NE corner)	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
INTEC (west side)	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IRC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IRC north	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Jackson, WY	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Main Gate	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
MFC north	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
MFC south	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Monteview	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
NRF	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
PBF	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
RHLLW	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
RWMC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000
RWMC south	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000
SMC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000
Sugar City	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000
Terreton	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000
Van Buren	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	

Table D-3. Results of multiple comparisons of gross beta results between locations during the fourth quarter. A 'p' value greater than 0.05 signifies no statistical difference between data groups. Any values below 0.05 are indicated in red. 'R' represents the average rank for each location.

Multiple Comparisons p values (2-tailed); Coded result (x10-15) (4th-Qtr-2023-Air_Query_with_Pu_reprep_reanalysis_results_KTC03-18-2024 in 4th-Qtr-2023-LVf)
Independent (grouping) variable: Sample Location
Kruskal-Wallis test: H (32, N= 384) =17.04893 p =.9858
Include condition: v7='gross beta'

Depend.: Coded result (x10-15)	Arco R:170.38	Atomic City R:173.92	ATR Complex R:188.58	Blackfoot R:144.96	Blue Dome R:189.63	CFA R:193.63	Craters of the Moon R:168.17	Dubois R:186.58	EBR 1 R:201.17	EFS R:256.25	FAA Tower R:155.88	Gate 4 R:225.38	Highway 26 Rest Area R:207.75	Howe R:210.38	Idaho Falls R:193.25	INTEC (NE corner) R:242.25	INTEC (west side) R:206.92	IRC R:167.63	IRC North R:181.46	Jackson WY R:147.21	Main Gate R:205.21	MFC North R:170.33	MFC South R:184.92	Monteview R:197.33	NRF R:223.67	PBF R:203.17	RHLLW R:221.17	RWMC R:194.42	RWMC South R:208.79	SMC R:205.88	Sugar City R:169.04	Terreton R:215.25	Van Buren R:196.42
Arco		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Atomic City	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
ATR Complex	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Blackfoot	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Blue Dome	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
CFA	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Craters of the Moon	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Dubois	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
EBR 1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
EFS	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
FAA Tower	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Gate 4	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Highway 26 Rest Area	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Howe	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Idaho Falls	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
INTEC (NE corner)	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
INTEC (west side)	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IRC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IRC North	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Jackson WY	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Main Gate	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
MFC North	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
MFC South	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Monteview	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
NRF	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
PBF	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
RHLLW	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
RWMC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
RWMC South	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
SMC	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000	1.000000
Sugar City	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000	1.000000
Terreton	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000	1.000000
Van Buren	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000		1.000000	1.000000