WOLF CREEK
NUCLEAR OPERATING CORPORATION

Cynthia R. Hafenstine
Manager Nuclear and Regulatory Affairs

April 25, 2018

RA 18-0047

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Docket No. 50-482: 2017 Annual Radiological Environmental Operating Report

To Whom It May Concern:

The purpose of this letter is to submit the enclosed Annual Radiological Environmental Operating Report, which is being submitted pursuant to Wolf Creek Generating Station (WCGS) Technical Specification 5.6.2. This report covers radiological environmental monitoring for WCGS for the period of January 1, 2017, through December 31, 2017.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4204.

Sincerely,

Cynthia R. Hafenstine

Cynthia R. Hafenstine

CRH/rlt

Enclosure

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IE25
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Enclosure to RA 18-0047

Wolf Creek Generating Station
2017 Annual Radiological Environmental Operating Report

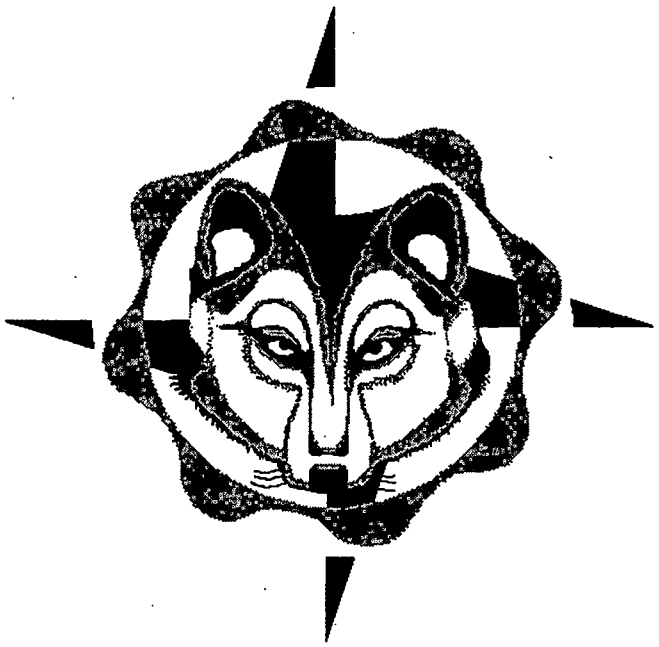
(184 pages including this page)

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

2017 ANNUAL RADIOLOGICAL

ENVIRONMENTAL OPERATING REPORT



April 20, 2018

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EXECUTIVE SUMMARY

Plant-related activation, corrosion, or fission products were not detected during 2017 in air particulate filters, radioiodine canisters, ground water, drinking water, broadleaf vegetation, shoreline sediment, crops, bottom sediment, aquatic vegetation, terrestrial vegetation or soil samples. Activation, corrosion or fission products attributable to plant operation were detected during 2017 in surface water, fish, and deer samples.

Nuclides detected in Radiological Environmental Monitoring Program (REMP) samples were below applicable Nuclear Regulatory Commission (NRC) reporting levels.

Based upon the REMP results, it was concluded station operations had no significant radiological impact on the health and safety of the public or the environment.

INTRODUCTION

The 2017 Annual Radiological Environmental Operating Report for Wolf Creek Generating Station (WCGS) covers the period from January 1 through December 31, 2017. WCGS is located in Coffey County, Kansas, approximately five miles northeast of Burlington, Kansas.

Fuel loading commenced at WCGS on March 12, 1985. The operational phase of the REMP began with initial criticality on May 22, 1985, and the first detectable quantities of radioactivity were reported in plant effluents in June 1985.

This report contains a description of the REMP conducted by Wolf Creek Nuclear Operating Corporation (WCNOC), a discussion of monitoring program results, the revisions or changes to the program, program deviations, the Interlaboratory Comparison Program and a comparison to the Radioactive Effluent Release Program. The Interlaboratory Comparison Program results, a summary of results in the NRC Branch Technical Position specified format, the individual sample results, and the Land Use Census Report are included as appendices.

I. PROGRAM DESCRIPTION

Radiological environmental monitoring samples were collected according to the schedule in WCGS procedure AP 07B-004, *Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)*. Radiological environmental monitoring program samples were collected by the WCGS Environmental Management group and were analyzed by Environmental, Inc. Landauer, Inc. processed the environmental optically stimulated luminescence (OSL) dosimeters. Table 1 identifies the exposure pathway/sample type, number of samples and sample locations, sample collection frequency, and the type and frequency of analysis. Table 2 lists the sample location identifiers, distances and directions from the plant. Samples in addition to those required by AP 07B-004 were also obtained and analyzed.

The following is a description of the sampling and analysis program by individual pathways.

A. Airborne Pathway

Low volume air sampling pumps with digital flow meters continuously sampled air through 47 mm glass fiber particulate filters and radioiodine canisters, respectively. The air particulate filters and radioiodine canisters were collected weekly. Gross beta analysis was performed weekly on the air particulate filters. Gamma isotopic analysis was also performed quarterly on

the air particulate filters. Radioiodine canisters were analyzed weekly for I-131.

Air samples were collected from six locations. The indicator locations sampled included 2, 18, 32, 37 and 49. A control location near the intersection of 20th Road and Yearling Road (location 53) was also sampled. Indicator sample locations are shown in Figure 1 and the control sample location is shown in Figure 5.

B. Direct Radiation Pathway

Optically stimulated luminescence (OSL) dosimeters were used continuously at 42 locations during the sample year to measure direct radiation. The OSLs were typically positioned roughly 3 to 4 feet above the ground in plastic thermostat boxes. Three OSLs were placed at each designated location. The OSLs were changed out quarterly and analyzed quarterly for gamma dose. Transit dose was measured and subtracted from the ambient dose. Indicator OSL sample locations are illustrated in Figure 2 and control sample locations are shown in Figure 5. Control sample locations were 39 (Beto Junction) and 53 (near the intersection of 20th Road and Yearling Road).

C. Waterborne Pathway

Gamma isotopic analysis was performed on the water samples. In addition to gamma isotopic analysis, analysis for I-131 was performed monthly on drinking water and quarterly on ground water samples. Gross beta analysis was performed monthly on drinking water samples. Tritium analysis was performed monthly for surface water and quarterly for drinking water. Tritium analysis was also performed quarterly on ground water samples. Four surface water samples from the Coffey County Lake Spillway (SP) location and four surface water samples from the John Redmond Reservoir (JRR) location were also analyzed for Fe-55. The waterborne pathway sample locations are shown in Figures 3 and 5.

Monthly grab samples of surface water were collected from the John Redmond Reservoir (JRR) control location and from the Coffey County Lake Spillway (SP) indicator location.

Quarterly grab samples of ground water were collected from seven wells. Six locations (C-10, C-49, F-1, G-2, J-1 and J-2) located hydrologically down gradient from the site were used as indicator sample locations. Location B-12 located hydrologically up gradient from the site was used as a control location.

Drinking water was sampled at the water treatment facilities in the towns of Iola (indicator sample location IO-DW) and Burlington (control sample location BW-15). The Iola facility is located downstream of the Neosho River-Wolf Creek confluence and the Burlington facility is located upstream of the Neosho River-Wolf Creek confluence. Composite samples were obtained monthly from automatic samplers at each location. The automatic drinking water samplers collected approximately 27 milliliters of water every two hours.

Shoreline sediments were sampled semiannually. Gamma isotopic analyses were performed on the shoreline sediment samples. Shoreline sediment sample locations were the Coffey County Lake discharge cove (DC) indicator location and the John Redmond Reservoir (JRR) control location.

D. Ingestion Pathway

Milk was not collected during the sample year. The Land Use Census did not identify any locations producing milk for human consumption within five miles of the plant.

Fish were sampled semiannually from the indicator sample location Coffey County Lake (CCL) and from the tail waters of John Redmond Reservoir (JRR) control sample location. These sample locations are identified in Figure 4. Gamma isotopic analyses were performed on the boneless meat portions of the fish. Several species of game fish and rough fish were sampled. Fish were also analyzed for tritium.

Broadleaf vegetation samples were collected monthly when available during the growing season. Indicator (A-3, B-1, H-2 and Q-6) location gardens (Figure 4) and a control (D-2) location garden (Figure 5) were sampled. Gamma isotopic analyses were performed on these samples.

Irrigated crop samples were obtained from indicator locations (NR-D1) and (NR-D2) downstream of the confluence of Wolf Creek and the Neosho River. Irrigated crops were also sampled from control location NR-U1. Gamma isotopic analysis was performed on each sample. Crop sample locations are identified on Figure 5.

E. Additional Samples Collected (not required by AP 07B-004)

Duplicate ground water grab samples were obtained quarterly from indicator location C-49 and were labeled L-49. These duplicate samples served as laboratory quality checks. Gamma isotopic analysis, I-131 analysis and tritium analysis were performed on the ground water samples.

Bottom sediment samples were collected semiannually from indicator sample locations at the Discharge Cove (DC), Essential Service Water (ESW) channel, Ultimate Heat Sink (UHS), and the control sample location at John Redmond Reservoir (JRR). Gamma isotopic analyses were performed on the bottom sediment samples. Fourteen samples collected from indicator locations were also analyzed for Fe-55. Two samples collected from UHS indicator locations were also analyzed for Ni-63, Sr-89 and Sr-90 activity. Four bottom sediment samples were collected from indicator sample locations at the Environmental Education Area (EEA) and the Makeup Discharge Structure (MUDS) as part of a cooperative sampling effort with the Kansas Department of Health and Environment (KDHE). The sample locations are identified on Figure 3.

Aquatic vegetation was collected from indicator locations Environmental Education Area (EEA), Makeup Discharge Structure (MUDS), Discharge Cove (DC ALT) and Stringtown Cemetery (SC). Gamma isotopic analyses were performed on the aquatic vegetation samples. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 3.

Terrestrial vegetation (grass) was sampled from the Environmental Education Area (EEA) and the Makeup Discharge Structure (MUDS) indicator sample locations. Gamma isotopic analysis was performed on the grass samples. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 4.

Soil was sampled from the Environmental Education Area (EEA) and the Makeup Discharge Structure (MUDS) indicator sample locations. Gamma isotopic analysis was performed on the soil samples. These samples were collected as part of a cooperative sampling effort with the KDHE. The sample locations are identified on Figure 4.

A deer was sampled from indicator sample location P2.0. Gamma isotopic analysis and tritium analysis was performed on the deer sample. This sample was collected as part of a cooperative sampling effort with the KDHE. The sample location is identified on Figure 4.

Blue Catfish bones were sampled from the Coffey County Lake (CCL) and from the John Redmond Reservoir (JRR) control sample location. These samples were analyzed for Sr-89/90. The sample from the CCL was collected as part of a cooperative sampling effort with the United States Food and Drug Administration.

II. DISCUSSION OF RESULTS

Analysis results for pathways are summarized in Appendix B using the format described in Radiological Assessment Branch Technical Position, Revision 1, November 1979 (NRC Generic Letter 79-065). Results for individual samples are listed in Appendix C.

A. Airborne Pathway

Chart 1 graphically illustrates weekly gross beta results for the sample year. Chart 2 represents the gross beta historical airborne smoothed averages of indicator sample locations and control sample locations. Charts 1 and 2 demonstrate how closely the indicator and control sample locations tracked together. Chart 2 reveals a seasonal cyclic trend; the gross beta values peak in the winter months (December or January) and decrease to a low point in the spring months (May or June). This trend is expected and is attributed to seasonal meteorological changes, i.e., changes in prevailing winds and precipitation.

The gross beta results of 2017 were compared to pre-operational monitoring results of 1983 and 1984. The weekly gross beta analyses range for 1983 and 1984 was 0.0064 to 0.084 pCi/m^3. The 2017 weekly gross beta analyses range for indicator locations was 0.006 to 0.053 pCi/m^3. The 2017 weekly gross beta analyses range was within the 1983 and 1984 pre-operational range. Additionally, the annual mean for indicator locations for 2017 (0.026 pCi/m^3) was lower than the annual mean for 1983 (0.032 pCi/m^3).

The gross beta results for the indicator locations were also compared to the control location. The annual mean for indicator locations for 2017 (0.026 pCi/m^3) was the same as the annual mean of the control location (0.026 pCi/m^3). The indicator location with the highest gross beta annual mean was location 37 (0.026 pCi/m^3) and was the same as the annual mean of the control location (0.026 pCi/m^3).

Naturally occurring Be-7 activity was detected, as was the case during pre-operational monitoring. In 1984, the range for Be-7 detected activity was 0.024 to 0.211 pCi/m^3 for indicator locations and the annual mean for indicator locations was 0.069 pCi/m^3. In 2017, the range for Be-7 detected activity was 0.061 to 0.122 pCi/m^3 for indicator locations and the annual mean for indicator locations was 0.087 pCi/m^3. The control location annual mean for Be-7 detected activity (0.086 pCi/m^3) was slightly lower than the annual mean of the indicator locations (0.087 pCi/m^3). The indicator location with the highest annual mean of detected Be-7 activity (0.089 pCi/ m^3) was location 18.

I-131 activity was not detected in the weekly analysis of radioiodine canisters at any location.

The AP 07B-004 required lower limits of detection were met. Plant-related activation, corrosion, or fission products were not detected during 2017 in air particulate filters and radioiodine canisters. No unusual trends were noted.

B. Direct Radiation Pathway

Quarterly OSL dosimeter results for each location are shown in Table 3. Measured values have been converted to a standardized 90-day quarter.

The annual mean of indicator sample locations in 2017 was 18.5 mR per standardized 90-day quarter. The annual mean of the control sample locations in 2017 was 18.7 mR per standardized 90-day quarter.

For pre-operational comparison, in 1981, the annual mean of indicator sample locations was 18.9 mR per standardized 90-day quarter and the annual mean for the control sample locations was 17.1 mR per standardized 90-day quarter. It should be noted WCGS changed from thermoluminescence dosimeters (TLD) to optically stimulated luminescence (OSL) dosimeters in 2008.

The indicator sample location with the highest annual mean was location 52 (20.5 mR per standardized 90-day quarter) which is slightly higher than the annual mean of the control sample locations (18.7 mR per standardized 90-day quarter).

Based upon Condition Report 00027489, improvements were made in measuring and subtracting transit dose in 2010. As expected, the OSL results have increased since 2010. Chart 3 visibly displays the increase of the OSL results since 2010. Chart 3 also displays how closely the indicator and control location OSL dosimeter results are for 2017.

Chart 4 displays the TLD nearsite sample locations (1, 2, 7-9, 11-14, 18, 26, 27, 29, 30, 37 and 38) and the control sample locations (locations 39 and 48) for the preoperational years through 2007.

C. Waterborne Pathway

(1) Surface Water

Tritium, attributable to WCGS operation, was detected in surface water samples collected from the Coffey County Lake spillway (SP) indicator sample location. The annual mean for detected tritium activity at the SP location was 9,342 pCi/L and the range was 7,382 to 11,221 pCi/L. The detected tritium activity was below the 30,000 pCi/L AP 07B-004 reporting level. Chart 5 illustrates the yearly averages of surface water tritium data for the SP location. Chart 5 indicates the average tritium concentration of the SP location has declined the last three years. Tritium activity was not detected in samples obtained from the John Redmond Reservoir (JRR) control sample location.

During pre-operational radiological environmental monitoring, measured radiological activity was not detected in surface water samples.

The AP 07B-004 required lower limits of detection were met. Radionuclides were not detected by the gamma isotopic analyses or by Fe-55 analyses.

Tritium was the only activity detected during 2017 in surface water samples and no unusual trends were noted.

(2) Ground Water

The AP 07B-004 required lower limits of detection were met for I-131, tritium and gamma isotopic analyses. Radioactivity was not detected in any ground water samples. No unusual trends were noted. Plant-related activation, corrosion or fission products were not detected during 2017 in ground water samples.

(3) Drinking Water

Gross beta activity was detected in drinking water samples collected from the indicator sample location and in samples collected from the control sample location. The annual mean of the indicator sample location gross beta activity (2.8 pCi/L) was slightly higher when compared to the annual mean of the control sample location gross beta activity (2.4 pCi/L). The 2017 annual means of gross beta activity for both the indicator and control sample locations were lower than those of the pre-operational monitoring year of 1984. In 1984, the annual mean of the indicator sample location gross beta activity was 7.5 pCi/L and the annual mean of the control sample location gross beta activity was 6.4 pCi/L.

Chart 6 illustrates the drinking water gross beta results for the last five years and how closely the gross beta results compared for the indicator and control sample locations.

Radionuclides were not detected by the I-131; gamma isotopic analyses or tritium analyses of the indicator or control location samples.

The AP 07B-004 required lower limits of detection were met. Plant-related activation, corrosion, or fission products were not detected during 2017 in drinking water samples and no unusual trends were noted.

(4) Shoreline Sediment

Naturally occurring K-40 was detected in shoreline sediment samples collected from the DC (indicator sample location) and JRR (control sample location). K-40 was also detected during pre-operational shoreline sediment monitoring.

Cs-137 activity was not detected in the two shoreline sediment samples collected from the DC indicator location. Cs-137 activity (137.8 pCi/kg) was detected in one of the shoreline sediment samples collected from the JRR control sample location.

No other radionuclides were detected in the DC or JRR shoreline sediment samples during 2017. The AP 07B-004 required lower limits of detection were met. Plant-related activation, corrosion, or fission products were not detected during 2017 in shoreline sediment samples and no unusual trends were noted.

D. Ingestion Pathway

(1) Milk

Milk was not collected during the sample year since no indicator locations within five miles of the plant were identified during the Land Use Census.

(2) Fish

Naturally occurring K-40 activity was detected in fish samples obtained from the Coffey County Lake (CCL) indicator sample location and in fish samples obtained from the JRR control sample location. K-40 activity was also detected during pre-operational fish monitoring.

Fish samples were also analyzed for tritium. Fish samples collected from Coffey County Lake had tritium activity detected (6,090 pCi/kg annual mean). The detected tritium activity was attributable to plant operation. An adult consuming 21 kilograms of fish, at the maximum measured tritium concentration (7,724 pCi/kg), would receive a committed effective dose equivalent of 0.010 mRem.

Tritium activity was not detected in the control location samples collected from JRR.

No other radionuclides were detected in fish samples during 2017. The AP 07B-004 required lower limits of detection were met and no unusual trends were noted.

(3) Broadleaf Vegetation

Gamma analyses of broadleaf vegetation samples obtained from indicator and control sample locations detected naturally occurring Be-7 and K-40. Be-7 and K-40 activity were also detected pre-operationally.

No other radionuclides were detected in broadleaf vegetation samples collected during the year. The AP 07B-004 required lower limits of detection were met. Plant-related activation, corrosion, or fission products were not detected during 2017 in broadleaf vegetation samples and no unusual trends were noted.

(4) Crop Samples

Gamma analysis detected naturally occurring K-40 activity to be present in the samples collected from the indicator sample locations and in the samples collected from the control sample location. K-40 activity was also detected during pre-operational crop monitoring. K-40 was the only activity detected in the crop samples.

The AP 07B-004 required lower limits of detection were met. Plant-related activation, corrosion, or fission products were not detected during 2017 in crop samples and no unusual trends were noted.

E. Additional Samples Collected (not required by AP 07B-004)

(1) Bottom Sediment

Gamma analysis detected naturally occurring K-40 activity to be present in the samples

collected from the indicator sample locations and in the samples collected from the control sample location. K-40 activity was also detected during pre-operational bottom sediment monitoring.

Cs-137 activity was detected in three samples obtained from indicator locations (range 59.9 to 104.7 pCi/kg).

Cs-137 activity was detected in pre-operational samples. The Cs-137 activity detected in 2017 indicator sample location bottom sediment samples was within the pre-operational range. (Cs-137 activity detected in 1981 and 1982 was in the range of 79 to 953 pCi/kg. The decay corrected range of pre-operational Cs-137 activity detected is approximately 35 to 417 pCi/kg.)

The detected Cs-137 activity in the samples collected from the indicator sample locations was likely due to fallout since the measured activity is within the decay corrected range of pre-operational Cs-137 detected activity.

Chart 7 plots the Cs-137 detected activity from the discharge cove indicator sample location and JRR control sample location bottom sediment samples. The detected Cs-137 activity measured from the discharge cove location reflects a decreasing trend. The Chart 7 trendline indicates Cs-137 activity detected at the JRR control location has also been decreasing. Chart 7 also displays that in recent years, the detected Cs-137 activity for the JRR and DC sample locations overlap.

Fe-55 activity was not detected in the fourteen samples obtained from indicator sample locations.

Analysis for the Hard-to-Detect radionuclides was performed on two indicator location samples. No activity was detected from this analysis.

No other radionuclides were detected in bottom sediment samples. Plant-related activation, corrosion, or fission products were not detected during 2017 in bottom sediment samples and no unusual trends were noted.

(2) Aquatic Vegetation

Gamma analyses of aquatic vegetation samples obtained from indicator sample locations detected naturally occurring Be-7 and K-40. Be-7 and K-40 activity were also detected during pre-operational monitoring.

Cs-137 activity (17.8 +/- 7.5 pCi/kg) was detected in a Water Primrose sample collected at the EEA indicator sample location. The detected Cs-137 activity was likely due to fallout since Cs-137 activity was also detected at the JRR control shoreline sample location.

No other radionuclides were detected in aquatic vegetation samples. Plant-related activation, corrosion, or fission products were not detected during 2017 in aquatic vegetation samples and no unusual trends were noted.

(3) Shoreline Sediment

Naturally occurring K-40 was detected in the shoreline sediment samples collected from the EEA and SC indicator sample locations. K-40 was also detected during pre-operational shoreline sediment monitoring.

Cs-137 activity (217.7 +/- 33.0 pCi/kg) was detected in the shoreline sediment sample collected from the EEA indicator location. Cs-137 activity (137.8 pCi/kg) was also detected in one of the shoreline sediment samples collected from the JRR control sample location.

Cs-137 activity was detected in pre-operational shoreline sediment samples. Cs-137 activity detected in shoreline sediment samples collected from the DC location from 1982 to 1984 was in the range of 224 to 437 pCi/kg. The decay corrected range of pre-operational Cs-137 activity detected is approximately 105 to 199 pCi/kg. The detected Cs-137 activity in the shoreline sediment sample collected from the EEA indicator location was likely due to fallout since Cs-137 activity was also detected at the JRR control sample location and since the detected activity was within the decay corrected range.

No other radionuclides were detected in the EEA or the SC shoreline sediment samples during 2017. Plant-related activation, corrosion, or fission products were not detected during 2017 and no unusual trends were noted.

(4) Terrestrial Vegetation

Naturally occurring Be-7 and K-40 activity were detected in the terrestrial vegetation indicator location samples. No other radionuclides were detected in terrestrial vegetation. Plant-related activation, corrosion or fission products were not detected during 2017 in terrestrial vegetation and no unusual trends were noted.

(5) Soil

Naturally occurring K-40 activity was detected in the three soil samples that were collected from the indicator locations. K-40 activity was also detected during pre-operational soil monitoring.

Cs-137 activity was also detected in the soil samples (range of 74.7 to 162.4 pCi/kg) obtained from the indicator locations. Data was reviewed for soil samples collected pre-operationally. The detected Cs-137 activity range from February of 1985 was 255 to 2,160 pCi/kg. The decay corrected range of pre-operational Cs-137 activity detected in soil is approximately 122 to 1,030 pCi/kg. The detected Cs-137 activity in soil sampled in 2017 is below the decay corrected pre-operational range and is likely due to fallout.

Plant-related activation, corrosion, or fission products were not detected during 2017 in soil samples and no unusual trends were noted.

(6) Deer

Naturally occurring K-40 activity was detected in the deer sample obtained from the indicator location.

Tritium activity (3,140 pCi/kg) was also detected in the deer sample. The detected tritium activity was attributable to plant operation.

An adult consuming 72.6 kilograms of deer meat, at the measured tritium concentration (3,140 pCi/kg), would receive a committed effective dose equivalent of 0.014 mRem.

No other radionuclides were detected in the deer sample. No unusual trends were identified.

(7) Fish – Bones

Sr-89 activity was not detected in the Blue Catfish bones collected from the CCL indicator location or the JRR control location.

Sr-90 activity (194.6 +/- 58.3 pCi/kg) was detected in the Blue Catfish bones collected from the CCL indicator location. Sr-90 activity (<160.2 pCi/kg) was not detected in the Blue Catfish bones collected from the JRR control location.

Sr-90 activity was detected in pre-operational soil samples. (Sr-90 activity detected in February 1985 soil samples was in the range of 85 to 380 pCi/kg. The decay corrected range of pre-operational Sr-90 activity detected is approximately 39 to 175 pCi/kg.) The detected Sr-90 activity in the Blue Catfish bones collected from the CCL indicator sample location is likely due to fallout since Sr-90 activity was detected pre-operationally and the detected activity was within the counting error range when compared to the control location.

III. PROGRAM REVISIONS/CHANGES

No revisions or changes were made to AP 07B-004, *Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)* during 2017.

IV. PROGRAM DEVIATIONS

Air Samples

The following air sample locations failed to meet the requirement for "continuous sampler operation." As described in footnote (1) of procedure AP 07B-004, *Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)*, Table 5-1, deviations are permitted from the required sampling schedule due to malfunction of sampling equipment and other legitimate reasons.

During the 12-11-17 to 12-18-17 sample period, five of the six air samplers were automatically shutoff due to digital flow meter programming. At two locations, the air samplers ran for approximately 20 minutes and at three locations, the air samplers ran for approximately one hour. The condition was addressed on the day of discovery and was documented on condition report 00118176. Additionally, the air sampler procedure was revised to prevent re-occurrence.

Drinking Water Samples

Drinking water was not continuously collected at the Burlington control sample location during the 09-05-17 to 10-02-17 sample period due to sampler inoperability. Insufficient water was collected for the monthly composite sample so a grab sample was also obtained. The inoperable sampler was replaced with a working sampler. Condition Report 00116297 was generated to document the condition.

Ground Water Protection

The following information is being provided in association with the Nuclear Energy Institute (NEI) Groundwater Protection Industry Initiative:

Describe offsite ground water or surface water sample results that exceeded the REMP reporting criteria that were voluntarily communicated to State/Local officials during the calendar year – None.

V. INTERLABORATORY COMPARISON PROGRAM

Environmental, Inc., Midwest Laboratory was contracted to perform radiological analysis of environmental samples for WCNOC. The laboratory participated in the intercomparison studies administered by Environmental Resource Associates, Inc. Appendix A is the Interlaboratory Comparison Program Results for Environmental, Inc., Midwest Laboratory. Intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also contained in Appendix A.

VI. COMPARISON TO THE RADIOACTIVE EFFLUENT RELEASE PROGRAM

As described in the section discussing radioisotopes found in fish from Coffey County Lake, dose that may be received as a result of tritium released from WCGS is comparable with the theoretical doses calculated by the Radioactive Effluent Release Program.

The theoretical doses calculated by the Radioactive Effluent Release Program assume a person drinks the water from Coffey County Lake and eats the fish from Coffey County Lake. Based upon these assumptions the dose to man from both pathways was calculated to be 0.127 mRem for 2017.

Using sample data obtained from the REMP, an adult drinking two liters per day of surface water from Coffey County Lake, using the average tritium activity (9,342 pCi/L), would receive a committed effective dose equivalent of 0.427 mRem per year. For an adult eating 21 kg of fish per year from Coffey County Lake, using the average tritium activity (6,090 pCi/kg), would receive a committed effective dose equivalent of 0.008 mRem per year. Based upon the REMP results, the dose from both pathways was calculated to be 0.435 mRem per year.

It should be noted Coffey County Lake is not used as a drinking water source. Calculating the dose to man for tritium detected in the Coffey County Lake surface water is for comparison purposes only.

The tritium dose values are being compared on a qualitative basis. It is not expected that the annual doses, as calculated in the Radioactive Effluent Release Report, would compare directly to those calculated from the REMP. The Radioactive Effluent Release Report provides a "snap shot" of potential dose resulting from the year's releases. The REMP data indicates the accumulated result of releasing tritium into the lake since the start of plant operation.

TABLE 1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DESCRIPTION (SAMPLE COLLECTION SPECIFIED BY AP 07B-004)

EXPOSURE PATHWAY/ SAMPLE TYPE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLE COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
AIRBORNE	**(See Figures 1 & 5)**		
Radioiodine and Particulates	Samples from six locations	Continuous sampler operation with sample collection weekly, or more frequently if required, by dust loading.	Analyze radioiodine canister weekly for I-131
	Samples from locations near the site boundary in three sectors having the highest calculated annual average D/Q and one supplemental location (Locations 2, 18, 37, or 49 on Figure 1)		Analyze particulate filter weekly for gross beta activity; perform quarterly gamma isotopic analysis composite (by location)
	Sample from the vicinity of a community having the highest calculated annual average D/Q (Location 32 on Figure 1, New Strawn)		
	Sample from a control location 9.5 to 18.5 miles distant in a low ranked D/Q sector (Location 53 on Figure 5)		

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE TYPE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLE COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
DIRECT RADIATION	**(See Figures 2 & 5)**		
	39 routine monitoring stations with two or more dosimeters measuring dose continuously, placed as follows: An inner ring of stations, one in each meteorological sector 0-3 mile range from the site (Locations 1, 7, 9, 11-13, 18, 26, 27, 29, 30, 37, 38, 46, & 49 on Figure 2). An outer ring of stations, one in each meteorological sector in the 3 to 5 mile range from the site (Locations 4, 5, 15-17, 19, 22-25, 32, 34-36, 50 & 51 on Figure 2). Four sectors [A, B, G & J] contain an additional station (Locations 2, 8, 14 & 20). The balance of the stations to be placed in special interest areas such as population centers (Locations 23, 32 & 52), nearby residences	Quarterly	Gamma dose quarterly

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE TYPE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLE COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
DIRECT RADIATION (cont.)	(many locations are near a residence), schools (Locations 23 & 52), Wilson Cadman Wildlife Education Area (44), CCL Public Fishing Area (46) and in two areas to serve as control stations 10-20 miles distant from the site (Locations 39 and 53 on Figure 5).		
WATERBORNE	(See Figure 3)		
Surface	One sample upstream (Location JRR on Figure 3) and one sample downstream (Location SP on Figure 3).	Monthly grab sample	Monthly gamma isotopic analysis and composite for tritium analysis quarterly
Ground	Samples from one or two sources only if likely to be affected. Indicator samples at locations hydrologically down-gradient of the site (Locations C-10, C-49, F-1, G-2, J-1 and J-2 on Figure 3); control sample at a location hydrologically upgradient of the site (Location B-12 on Figure 3).	Quarterly grab sample	Quarterly gamma isotopic analysis and tritium analysis

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE TYPE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLE COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
WATERBORNE (cont.)			
Drinking	Sample of municipal water supply at an indicator location downstream of the Neosho River-Wolf Creek confluence (Location IO-DW on Figure 5); control sample from location upstream of the Neosho River-Wolf Creek confluence (Location BW-15 on Figure 3).	Monthly Composite	Monthly gamma isotopic analysis and gross beta analysis of composite sample. Quarterly tritium analysis of composites.
Shoreline Sediment	One sample from the vicinity of Coffey County Lake discharge cove (Location DC on Figure 3); control sample from John Redmond Reservoir (Location JRR on Figure 3).	Semiannually	Semiannual gamma isotopic analysis
INGESTION	(See Figures 4 & 5)		
Milk	Samples from milking animals at three indicator locations within 5 miles of the site having the highest dose potential (currently there are no locations producing milk for human consumption within 5 miles of the site); one sample from a control location greater than 10 miles from the site if indicator locations are sampled.	Semimonthly April to November; monthly December-March	Gamma isotopic analysis and I-131 analysis of each sample

TABLE 1 (Cont.)

EXPOSURE PATHWAY/ SAMPLE TYPE	NUMBER OF SAMPLES AND SAMPLE LOCATIONS	SAMPLE COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
INGESTION (cont.)			
Fish	Indicator samples of 1 to 3 recreationally important species from Coffey County Lake; control samples of similar species from John Redmond Reservoir spillway (Figure 4).	Semiannually	Gamma isotopic analysis on edible portions
Broadleaf Vegetation	Samples of available broadleaf vegetation from two indicator locations (using the criteria from the "Land Use Census" section) with highest calculated annual average D/Q (Locations A-3 and Q-6 and alternate locations B-1, H-2, N-1 and R-2 on Figure 4); sample of similar broadleaf vegetation from a control location 9.5 to 18.5 miles distant in a low ranked D/Q sector (Location D-2 on Figure 5).	Monthly when available	Gamma isotopic analysis on edible portions
Irrigated Crops	Sample of crops irrigated with water from the Neosho River downstream of the Neosho River - Wolf Creek confluence (locations will vary from year to year, e.g., Location NR-D1 and NR-D2 on Figure 5).	At time of harvest	Gamma isotopic analysis on edible portions

TABLE 2
SAMPLE LOCATION IDENTIFIERS, DISTANCES (Miles) AND DIRECTIONS (Sectors)

Sample Type	Location Identifier	Distance from Reactor	Direction	Sector
Air Particulates and Radioiodine	2	2.7	N	A
	18	3.0	SSE	H
	32	3.1	WNW	P
	37	2.0	NNW	R
	49	0.8	NNE	B
	53	10.8	ENE	D
Dosimeters	1	1.4	N	A
	2	2.7	N	A
	4	4.0	NNE	B
	5	4.1	NE	C
	7	2.1	NE	C
	8	1.7	NNE	B
	9	2.0	ENE	D
	11	1.7	E	E
	12	1.9	ESE	F
	13	1.6	SE	G
	14	2.5	SE	G
	15	4.6	ESE	F
	16	4.3	E	E
	17	3.7	SE	G
	18	3.0	SSE	H
	19	3.9	SSE	H
	20	3.3	S	J
	22	3.9	SSW	K
	23	4.3	SW	L
	24	4.1	WSW	M
	25	3.4	W	N
	26	2.4	WSW	M
	27	2.2	SW	L
	29	2.7	SSW	K
	30	2.5	W	N
	32	3.1	WNW	P
	34	4.4	NW	Q
	35	4.6	NNW	R
	36	4.2	N	A
	37	2.0	NNW	R
	38	1.2	NW	Q
	39	13.1	N	A
	41	0.8	NNW	R
	42	0.8	SSE	H
	43	0.7	WNW	P
	44	3.0	NNW	R

TABLE 2 (Cont.)
SAMPLE LOCATION IDENTIFIERS, DISTANCES (Miles) AND DIRECTIONS (Sectors)

Sample Type	Location Identifier	Distance from Reactor	Direction	Sector
Dosimeters	46	1.6	WNW	P
	49	0.8	NNE	B
	50	3.6	ENE	D
	51	4.3	S	J
	52	3.6	SW	L
	53	10.8	ENE	D
Surface Water	JRR	3.7	W	N
	SP	3.2	SSE	H
Ground Water	B-12	1.9	NNE	B
	C-10	2.7	W	N
	C-49/L-49	2.8	SW	L
	F-1	2.5	ESE	F
	G-2	3.6	SE	G
	J-1	3.8	S	J
	J-2	4.3	S	J
Drinking Water	BW-15	3.9	SW	L
	IO-DW	26.1	SSE	H
Shoreline Sediment	DC	0.8	WNW	P
	EEA	3.0	NNW	R
	JRR	3.6	W	N
	SC	0.8	NNW	R
Fish	CCL	0.6	E to NNW	E to R
	JRR	3.7	W	N
Food/Garden	A-3	2.6	N	A
	B-1	0.8	NNE	B
	D-2	14.8	ENE	D
	H-2	3.0	SSE	H
	Q-6	2.4	NW	Q
Crops	NR-D1	8.9	S	J
	NR-D2	11.5	S	J
	NR-U1	4.0	SSW	K
Bottom Sediment	DC	0.9	WNW	P
	EEA	3.0	NNW	R
	ESW	0.5	E	E
	JRR	3.7	W	N
	MUDS	1.5	WNW	P
	UHS	0.6	E	E
Aquatic Vegetation	DC ALT	1.5	NW	Q
	EEA	3.0	NNW	R
	MUDS	1.5	WNW	P
	SC	0.8	NNW	R

TABLE 2 (Cont.)
SAMPLE LOCATION IDENTIFIERS, DISTANCES (Miles) AND DIRECTIONS (Sectors)

Sample Type	Location Identifier	Distance from Reactor	Direction	Sector
Terrestrial Vegetation	EEA	3.0	NNW	R
	MUDS	1.5	WNW	P
Soil	EEA	3.0	NNW	R
	MUDS	1.5	WNW	P
Meat (Deer)	P2.0	2.0	WNW	P

TABLE 3
OSL Dosimeter Results
(mR/Standardized 90-day Quarter)

Location	Qtr. 1 (mR)	Qtr. 2 (mR)	Qtr. 3 (mR)	Qtr. 4 (mR)	Total Annual Exposure (mR)
1	18.4	22.2	18.2	19.4	78.2
2	17.0	17.6	17.5	20.7	72.8
4	19.4	22.7	20.1	19.2	81.4
5	16.0	19.1	21.6	15.2	71.9
7	18.0	20.1	18.5	15.4	72.0
8	17.5	21.7	20.4	17.4	77.0
9	14.6	15.0	17.4	16.5	63.5
11	19.7	20.7	19.5	18.9	78.8
12	17.5	21.2	21.4	17.4	77.5
13	19.4	21.7	20.0	18.5	79.6
14	16.5	20.3	21.9	19.2	77.9
15	19.4	20.1	20.6	18.7	78.8
16	16.1	16.0	18.8	16.2	67.1
17	18.1	20.7	19.9	15.9	74.6
18	17.0	18.6	19.3	17.4	72.3
19	18.8	19.7	22.3	20.4	81.2
20	19.1	19.1	18.4	19.4	76.0
22	19.0	19.6	23.3	19.9	81.8
23	18.5	20.1	20.6	20.4	79.6
24	20.9	17.9	21.9	18.4	79.1
25	14.6	16.5	16.1	16.9	64.1
26	15.3	20.1	20.0	14.9	70.3
27	17.5	22.6	20.0	16.4	76.5
29	15.6	16.0	15.6	12.4	59.6
30	19.5	19.6	20.9	17.2	77.2
32	15.6	20.1	20.1	17.4	73.2
34	18.5	20.1	19.8	18.4	76.8
35	18.0	20.1	20.6	17.8	76.5
36	15.6	19.6	20.4	19.8	75.4
37	18.5	16.6	18.5	18.2	71.8
38	22.8	19.2	21.5	18.2	81.7
39	17.5	17.6	20.1	15.7	70.9
41	18.8	20.6	19.5	18.4	77.3
42	12.7	16.0	12.1	12.2	53.0
43	11.2	15.0	13.7	10.7	50.6
44	19.4	17.1	22.4	17.4	76.3
46	20.0	21.6	17.7	18.4	77.7
49	16.1	16.6	17.5	15.9	66.1
50	19.9	21.0	22.0	18.2	81.1
51	17.5	21.3	20.0	16.9	75.7
52	18.0	22.6	21.4	19.9	81.9
53	19.4	20.3	20.1	18.7	78.5

FIGURE 1

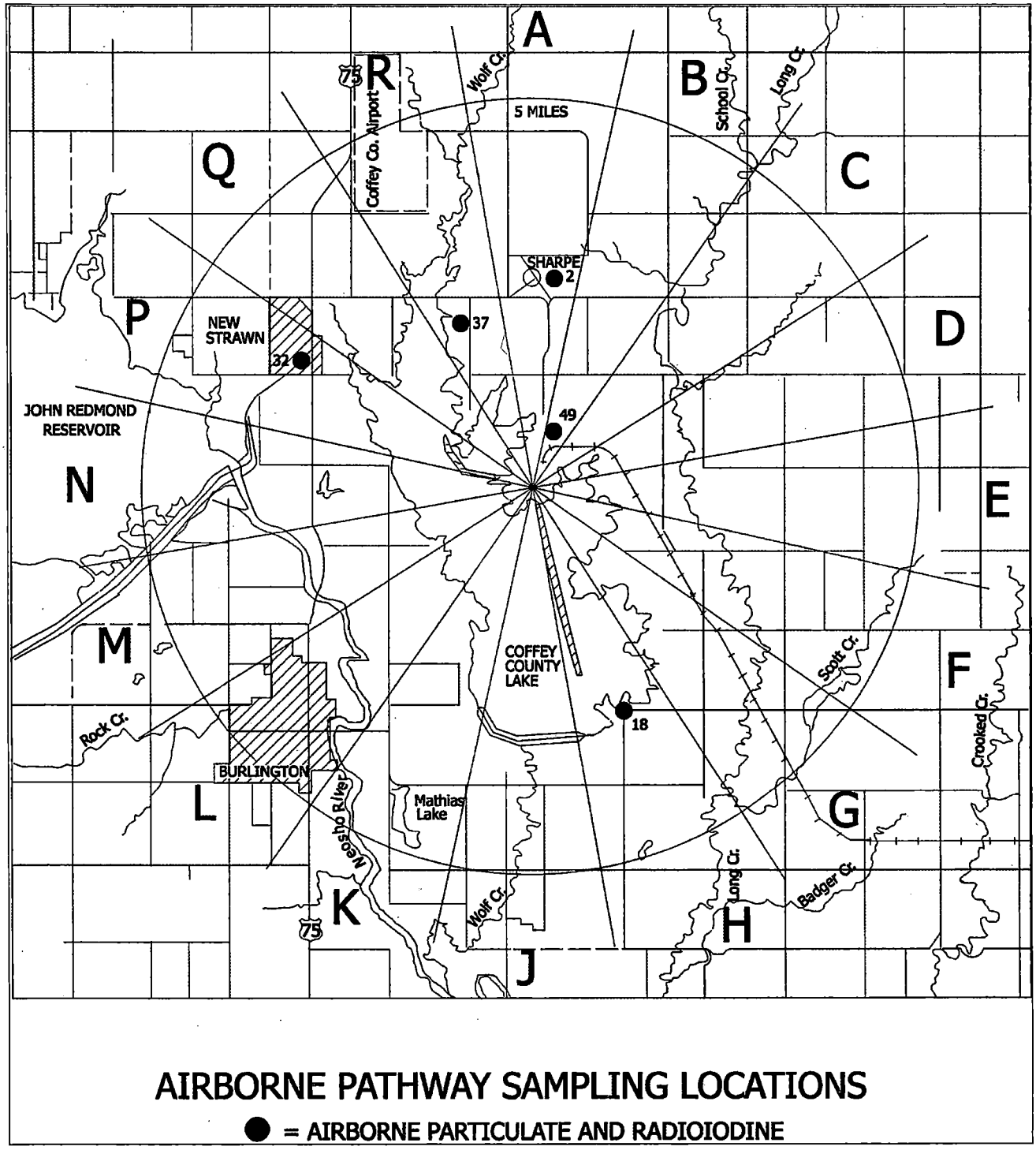
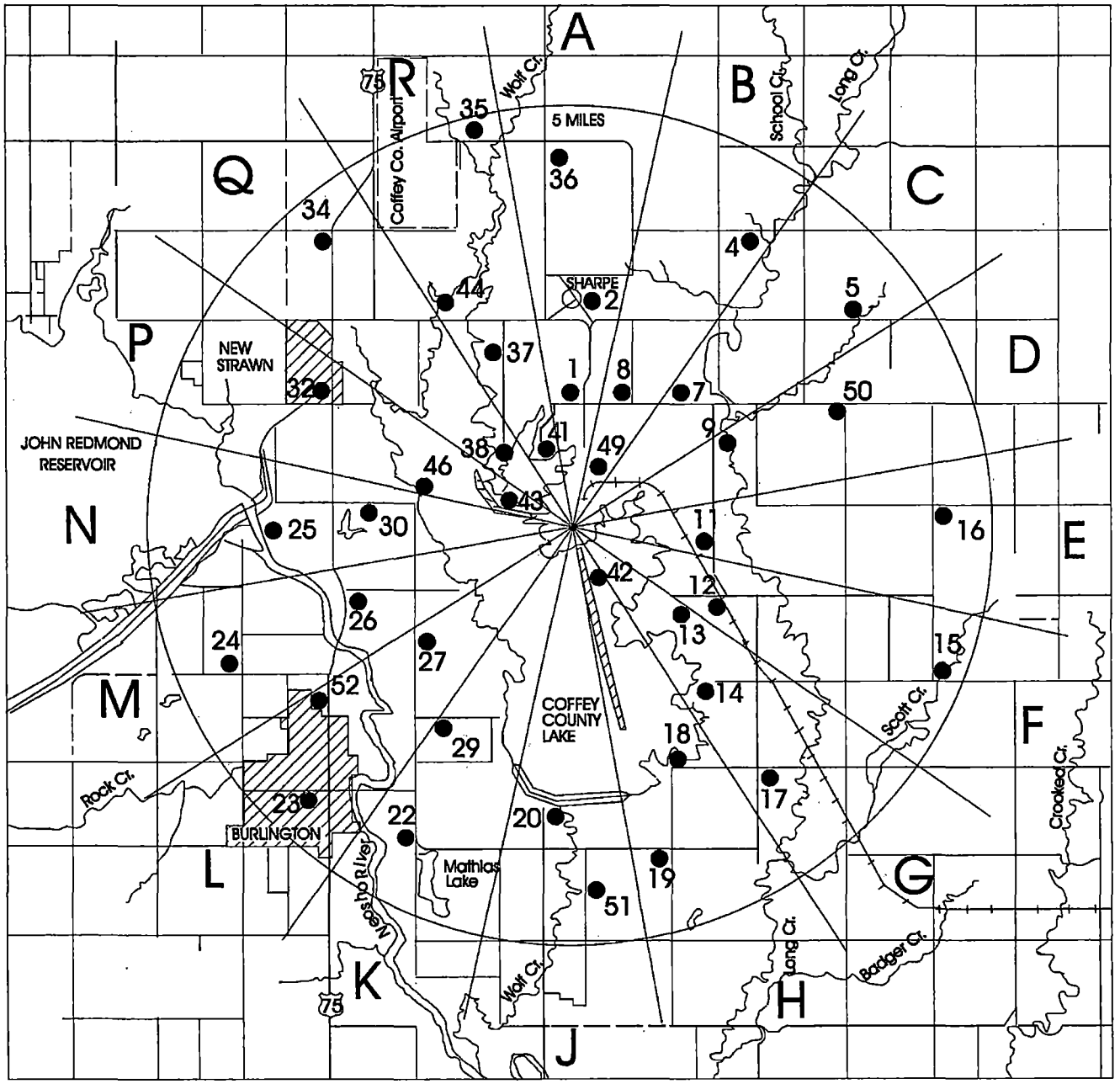

A
B
C
D
E
F
G
H
J
K
L
M
N
P
Q
R
75
Wolf Cr.
5 MILES
School Cr.
Long Cr.
Coffey Co. Airport
SHARPE
2
37
NEW STRAWN
32
JOHN REDMOND RESERVOIR
49
COFFEY COUNTY LAKE
18
Scott Cr.
Crooked Cr.
Rock Cr.
BURLINGTON
Neosho River
Mathias Lake
Long Cr.
Badger Cr.
Wolf Cr.
75
AIRBORNE PATHWAY SAMPLING LOCATIONS
● = AIRBORNE PARTICULATE AND RADIOIODINE

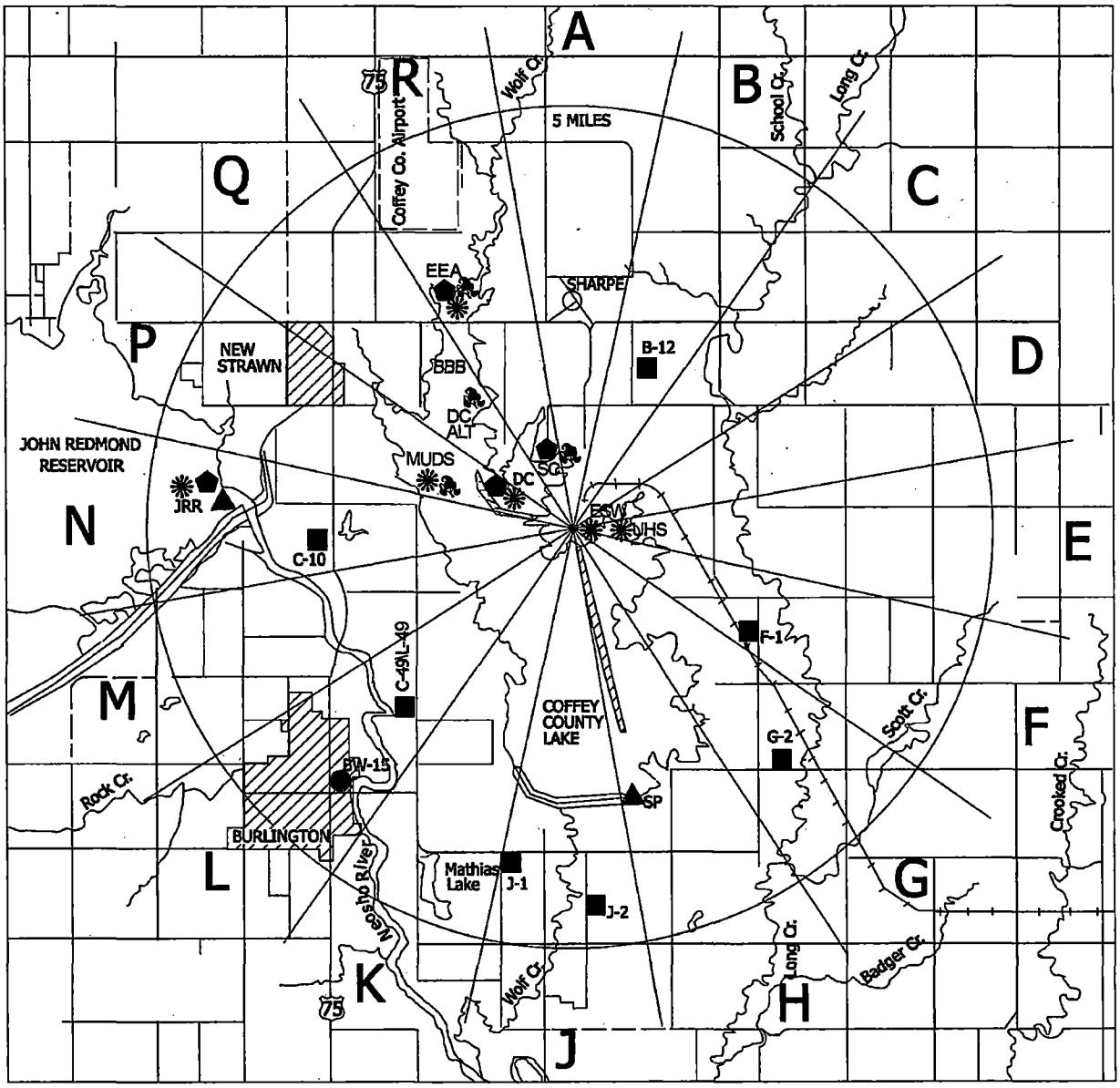
FIGURE 2



DIRECT RADIATION PATHWAY SAMPLING LOCATIONS

● = DOSIMETER LOCATIONS

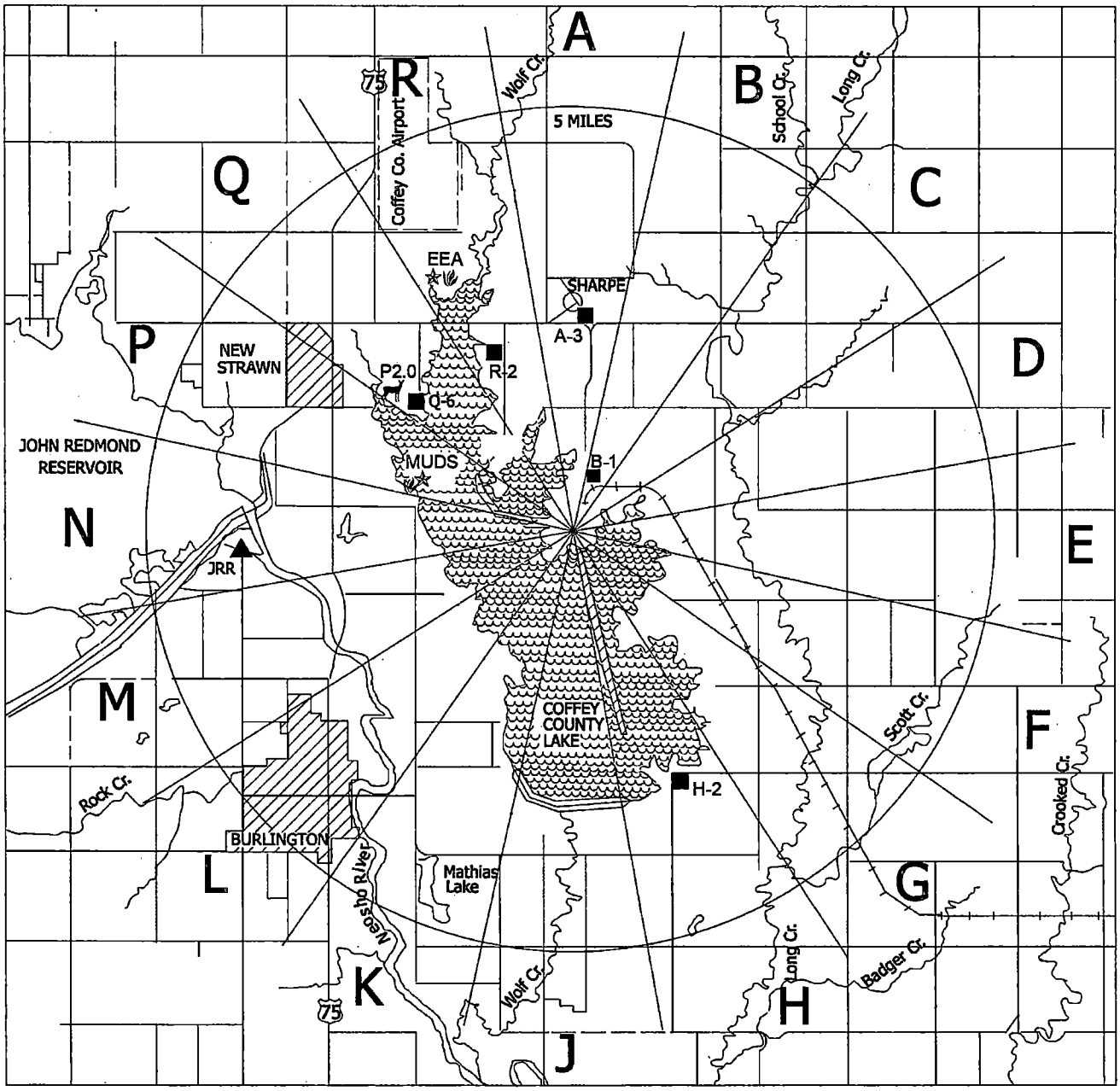
FIGURE 3



WATERBORNE PATHWAY SAMPLING LOCATIONS

- ● = DRINKING WATER
- ▲ = SURFACE WATER
- ■ = GROUND WATER
- ⬟ = SHORELINE SEDIMENT
- ✱ = BOTTOM SEDIMENT
- = AQUATIC VEGETATION

FIGURE 4



INGESTION PATHWAY SAMPLING LOCATIONS

▲ = FISH (JRR)
= FISH (CCL)
■ = BROADLEAF VEGETATION
= TERRESTRIAL VEGETATION
☆ = SOIL
= DEER

FIGURE 5

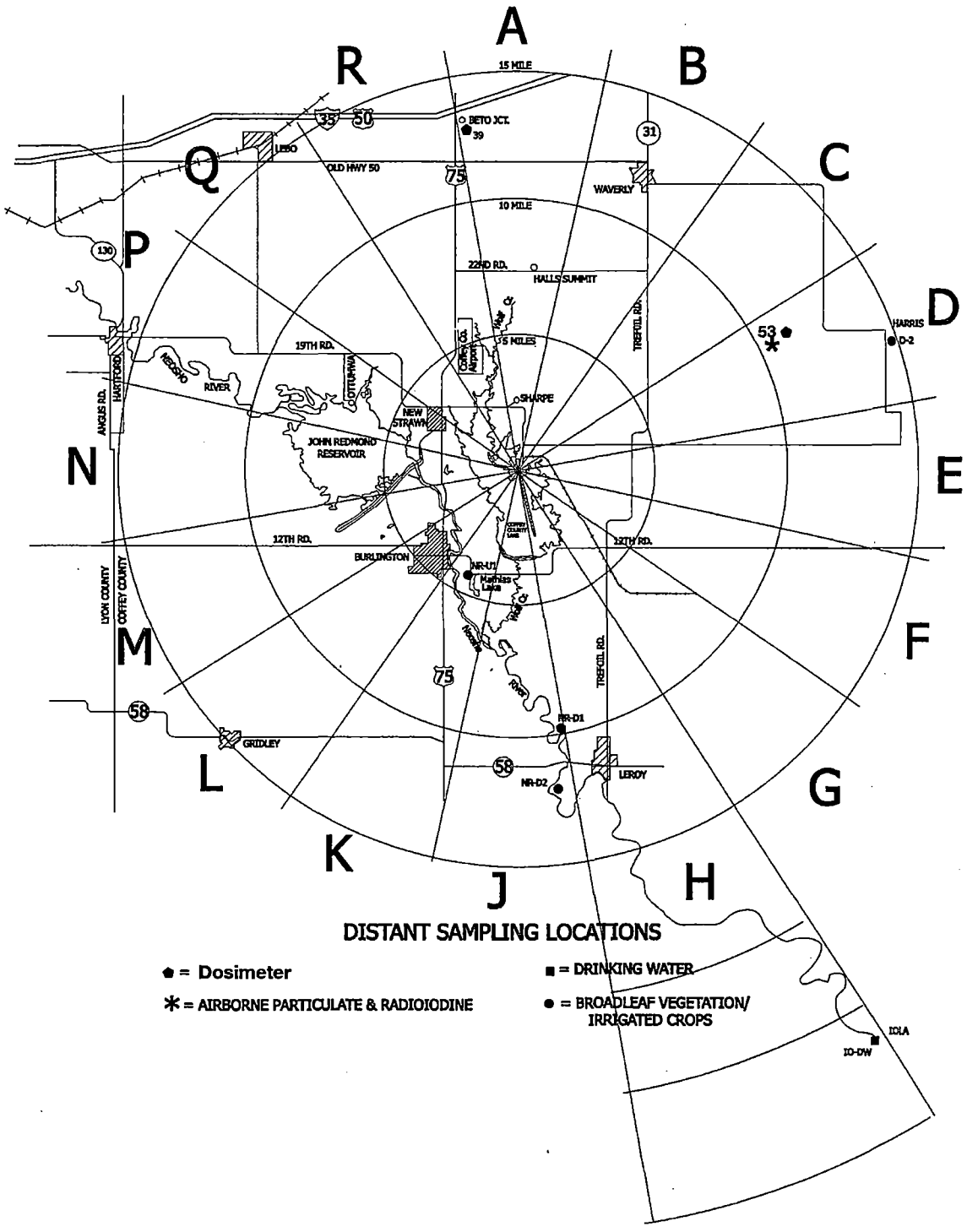

A
B
C
D
E
F
G
H
J
K
L
M
N
P
Q
R
15 MILE
10 MILE
5 MILES
BETO JCT.
LEBO
OLD HWY 50
WAVERLY
HALLS SUMMIT
22ND RD.
19TH RD.
12TH RD.
HARRIS
D-2
SHARPE
NEW STRAWN
JOHN REDMOND RESERVOIR
NEOSHO RIVER
OTTUMWA
HARTFORD
ANGUS RD.
BURLINGTON
GRIDLEY
LEROY
TREFOIL RD.
LYON COUNTY
COFFEY COUNTY
NR-U1
NR-D1
NR-D2
IO-DW
IOLA
DISTANT SAMPLING LOCATIONS
● = Dosimeter
✱ = AIRBORNE PARTICULATE & RADIOIODINE
■ = DRINKING WATER
● = BROADLEAF VEGETATION/ IRRIGATED CROPS

CHART 1

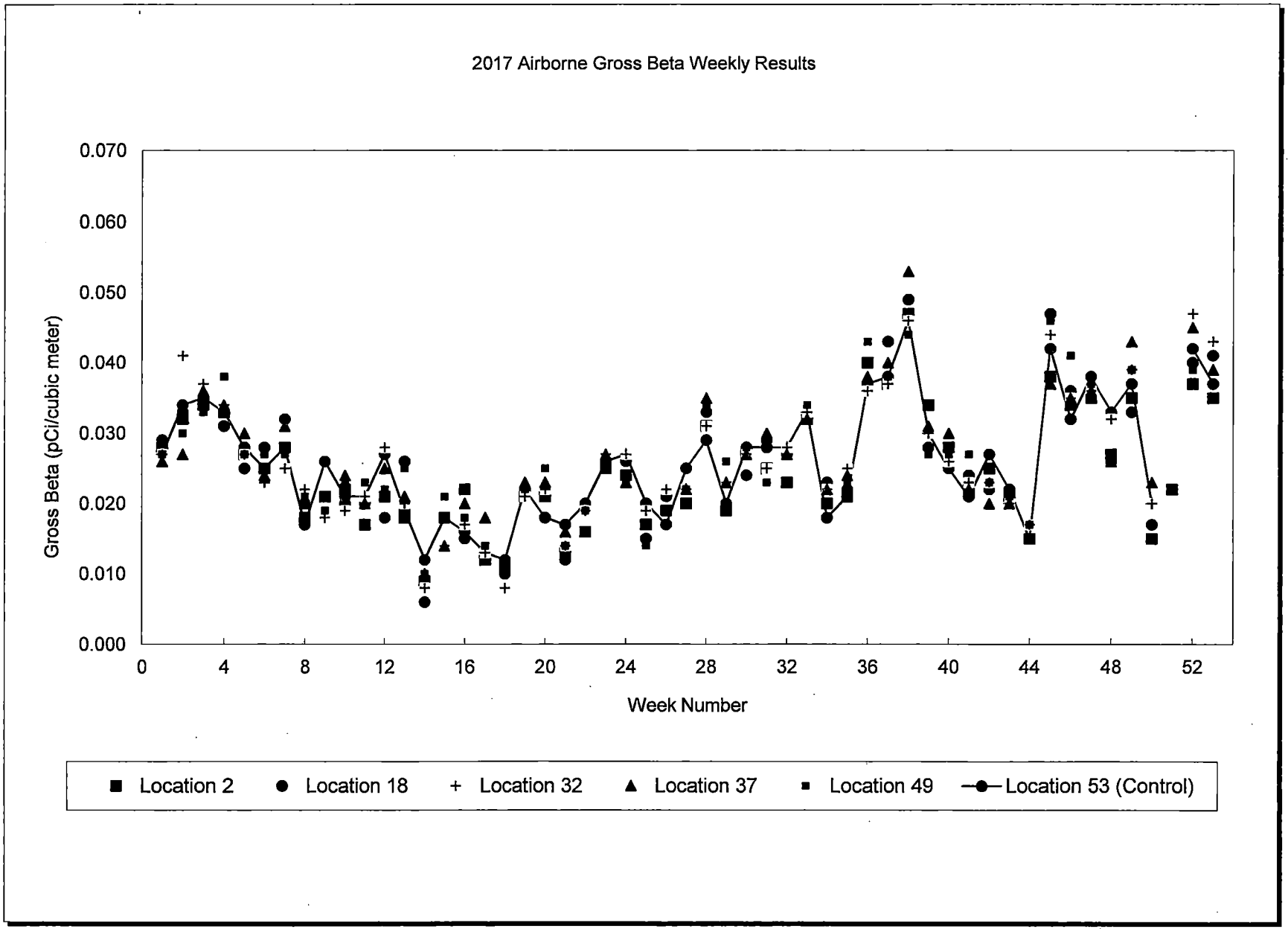

2017 Airborne Gross Beta Weekly Results
Gross Beta (pCi/cubic meter)
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
0
4
8
12
16
20
24
28
32
36
40
44
48
52
Week Number
Location 2
Location 18
Location 32
Location 37
Location 49
Location 53 (Control)

CHART 2

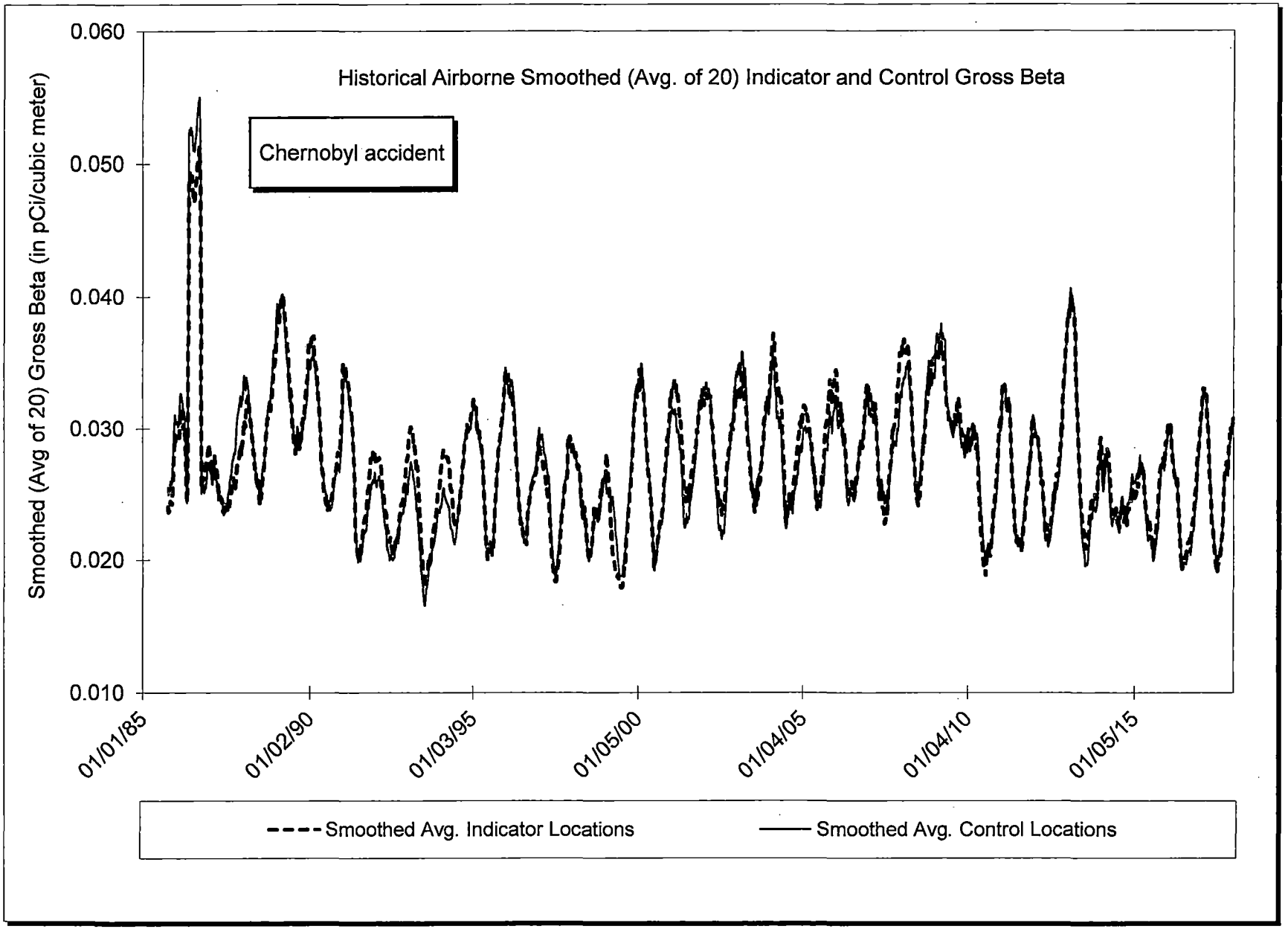

Historical Airborne Smoothed (Avg. of 20) Indicator and Control Gross Beta
Chernobyl accident
Smoothed (Avg of 20) Gross Beta (in pCi/cubic meter)
0.060
0.050
0.040
0.030
0.020
0.010
01/01/85
01/02/90
01/03/95
01/05/00
01/04/05
01/04/10
01/05/15
Smoothed Avg. Indicator Locations
Smoothed Avg. Control Locations

CHART 3

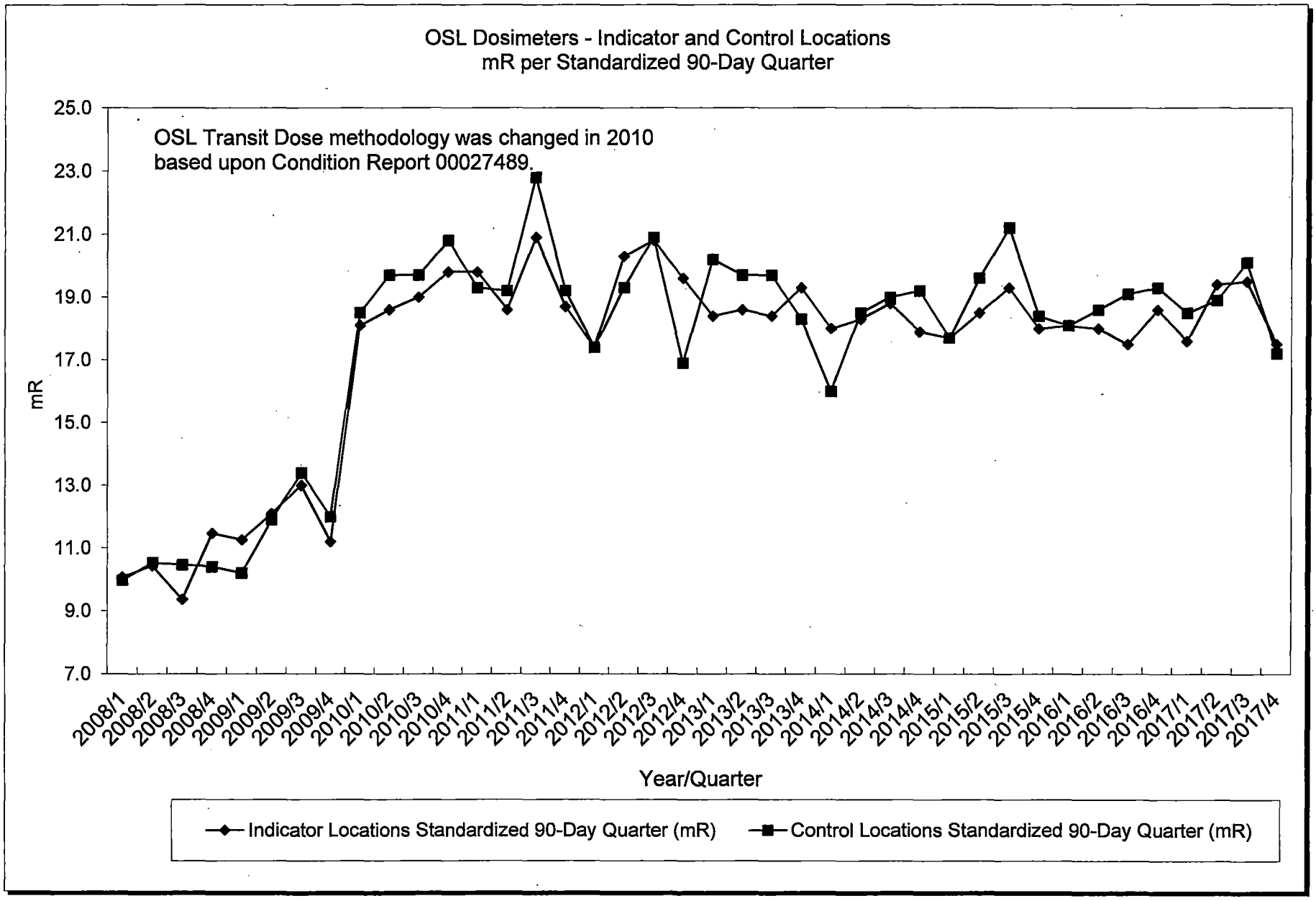

OSL Dosimeters - Indicator and Control Locations
mR per Standardized 90-Day Quarter
OSL Transit Dose methodology was changed in 2010
based upon Condition Report 00027489.
mR
25.0
23.0
21.0
19.0
17.0
15.0
13.0
11.0
9.0
7.0
2008/1
2008/2
2008/3
2008/4
2009/1
2009/2
2009/3
2009/4
2010/1
2010/2
2010/3
2010/4
2011/1
2011/2
2011/3
2011/4
2012/1
2012/2
2012/3
2012/4
2013/1
2013/2
2013/3
2013/4
2014/1
2014/2
2014/3
2014/4
2015/1
2015/2
2015/3
2015/4
2016/1
2016/2
2016/3
2016/4
2017/1
2017/2
2017/3
2017/4
Year/Quarter
Indicator Locations Standardized 90-Day Quarter (mR)
Control Locations Standardized 90-Day Quarter (mR)

CHART 4

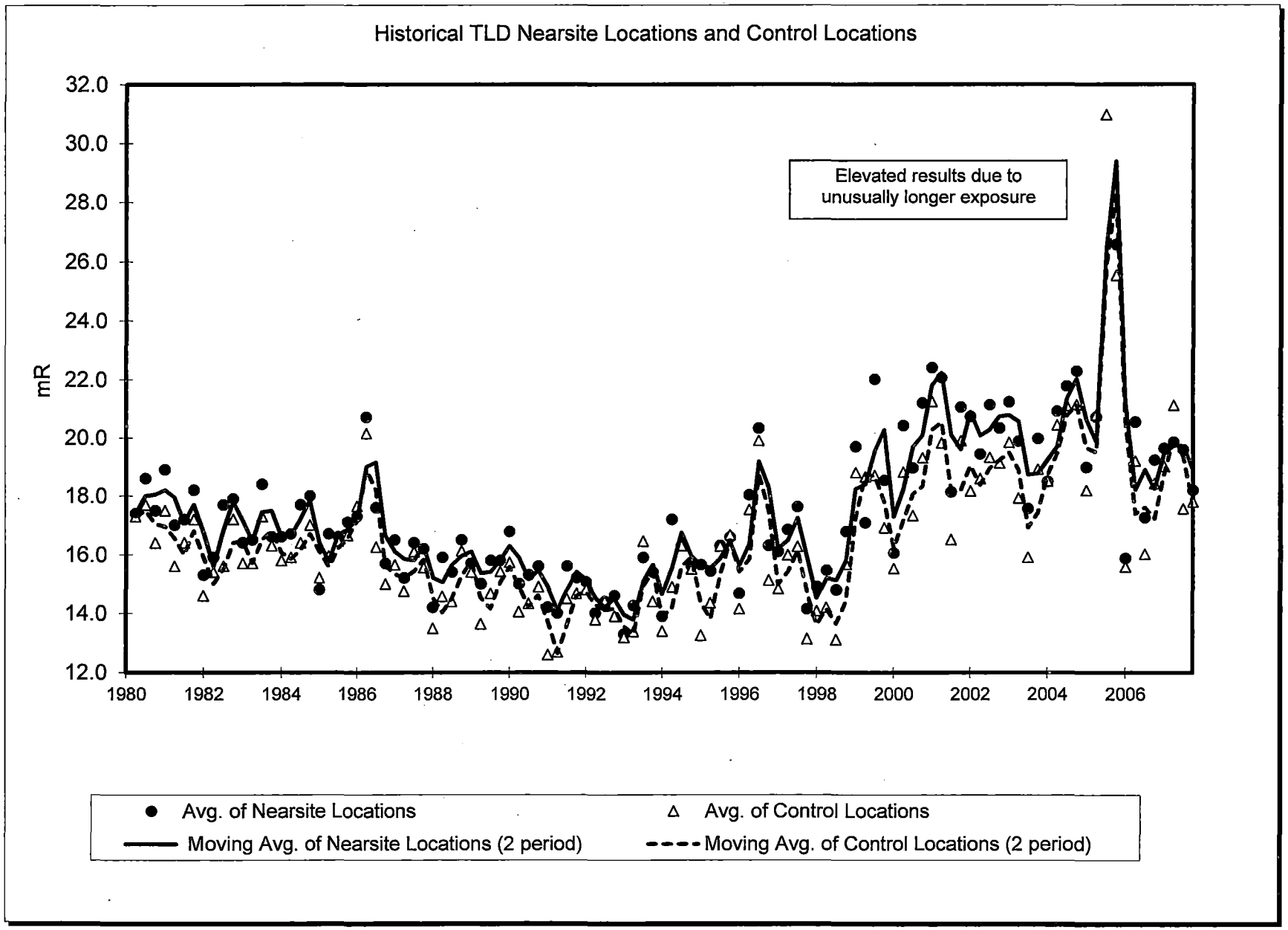

Historical TLD Nearsite Locations and Control Locations
mR
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
Elevated results due to unusually longer exposure
Avg. of Nearsite Locations
Avg. of Control Locations
Moving Avg. of Nearsite Locations (2 period)
Moving Avg. of Control Locations (2 period)

CHART 5

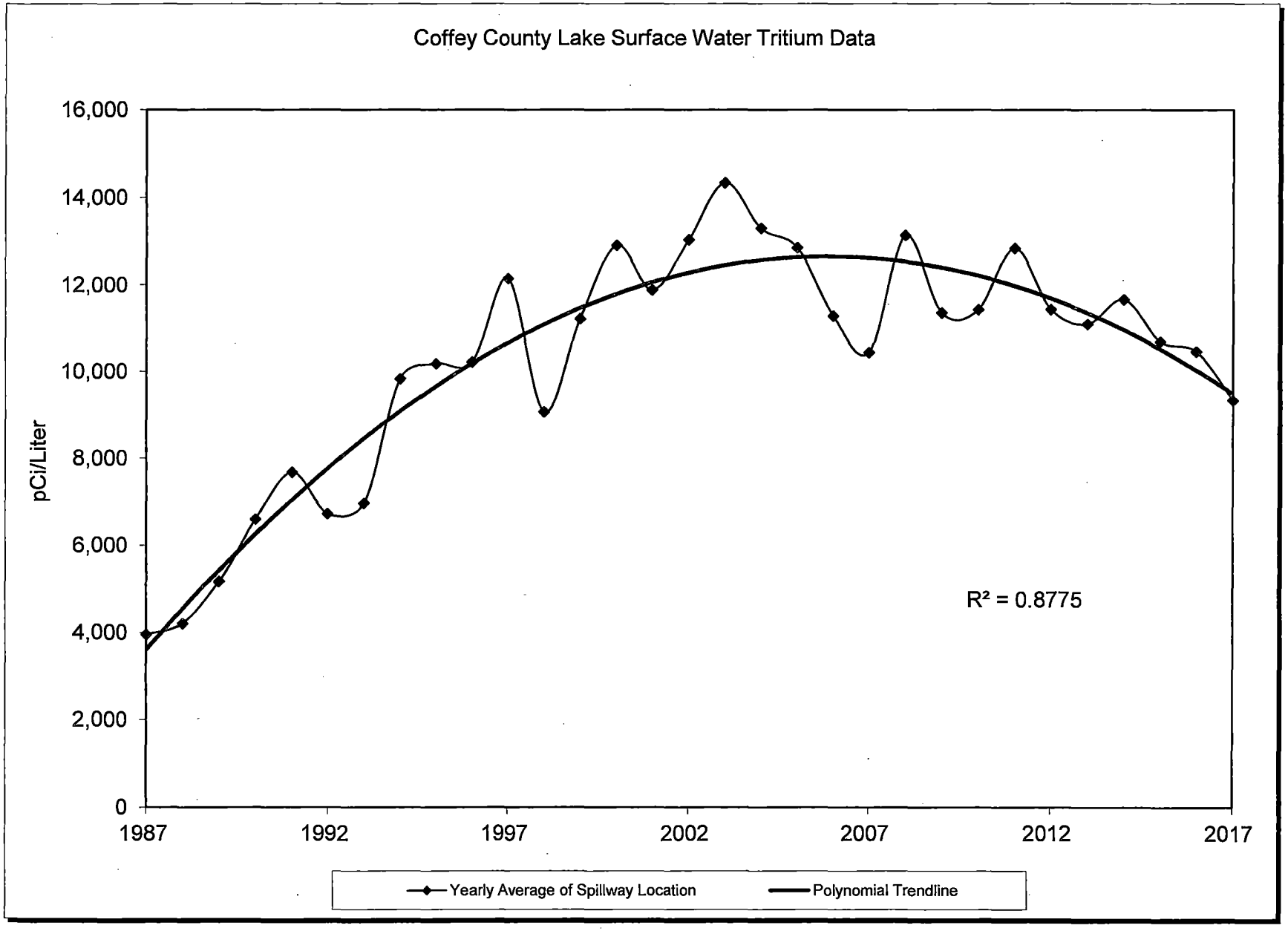

Coffey County Lake Surface Water Tritium Data
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
pCi/Liter
1987
1992
1997
2002
2007
2012
2017
R² = 0.8775
Yearly Average of Spillway Location
Polynomial Trendline

CHART 6

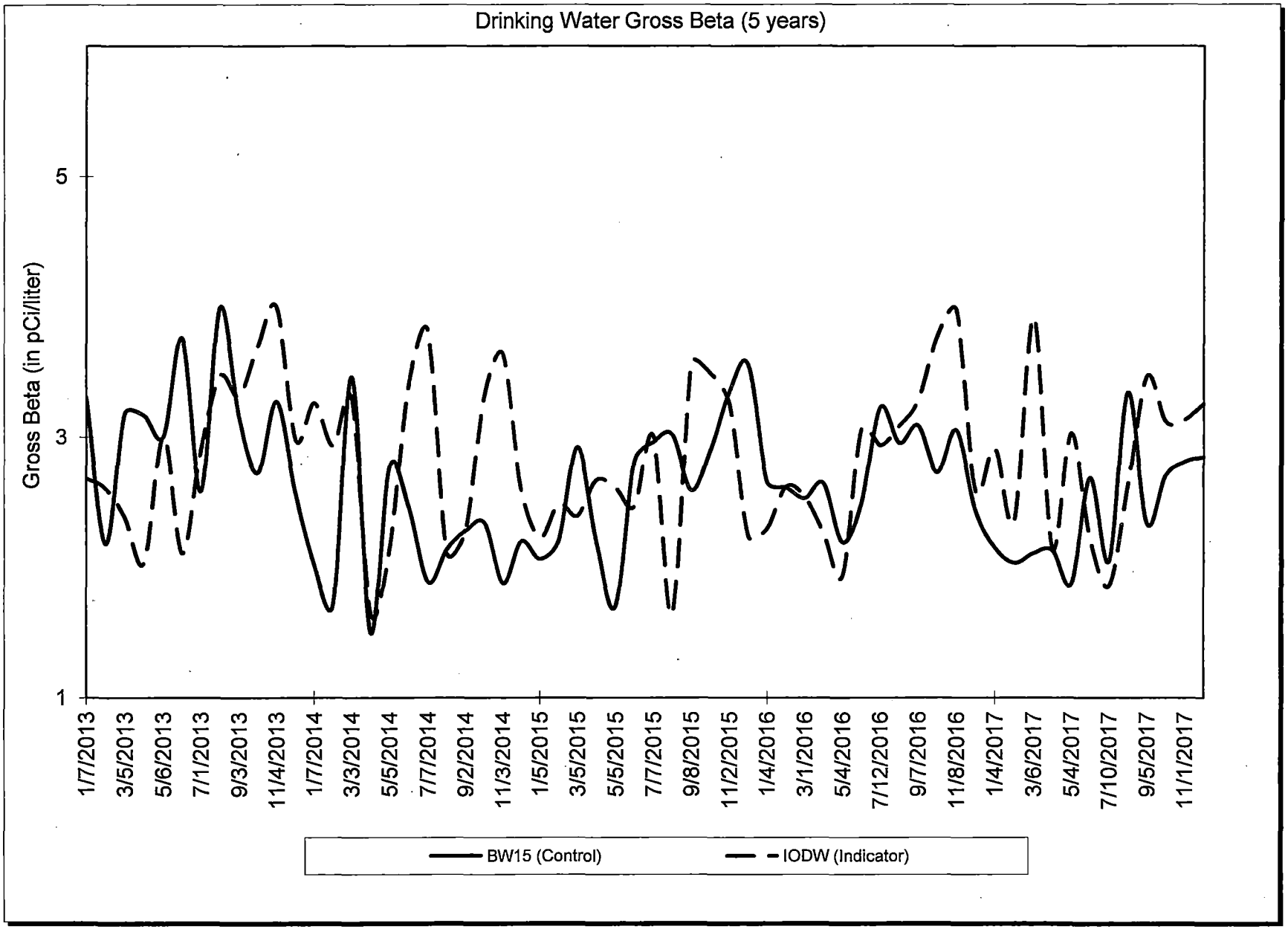
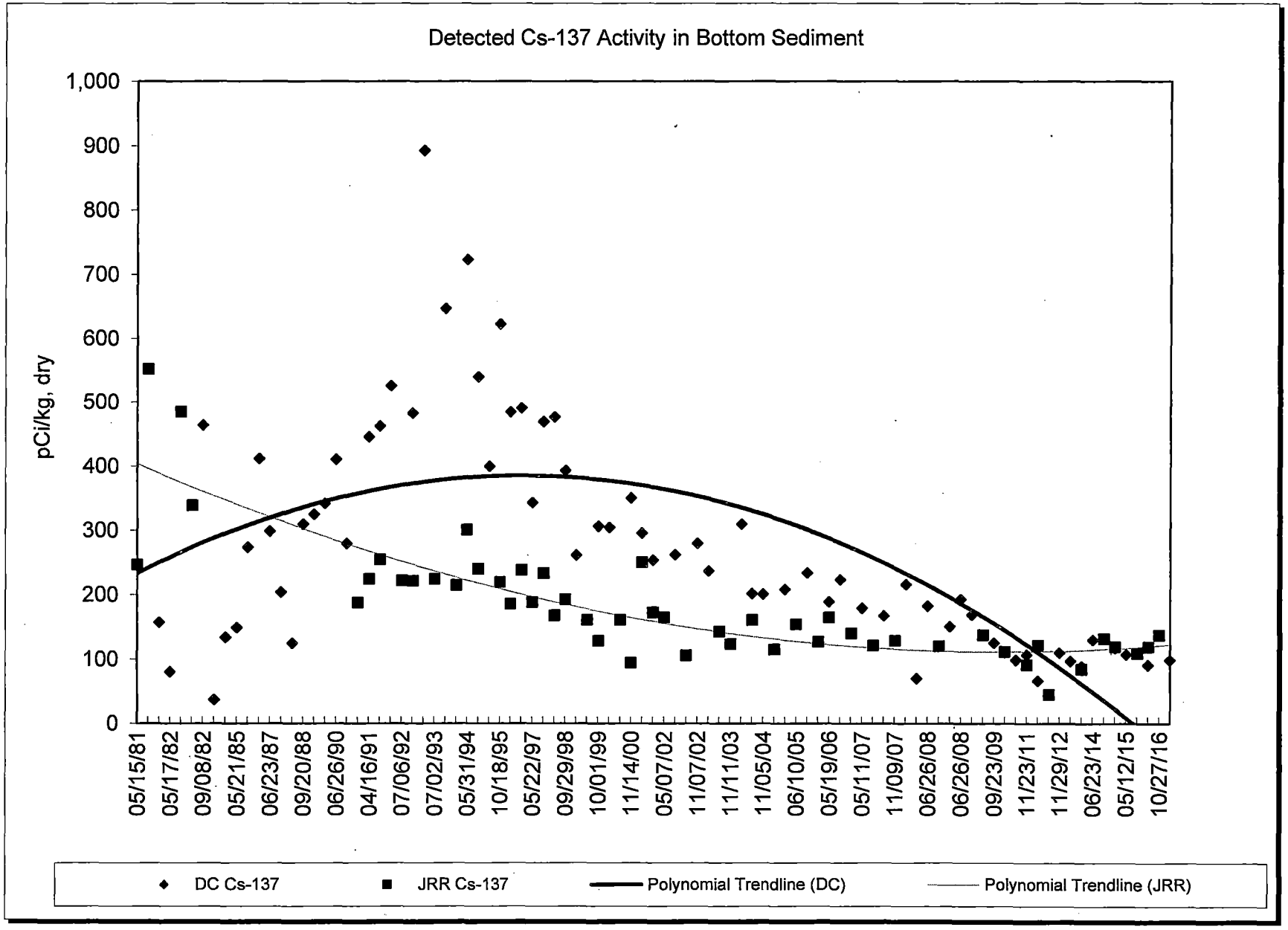

Drinking Water Gross Beta (5 years)
Gross Beta (in pCi/liter)
5
3
1
1/7/2013
3/5/2013
5/6/2013
7/1/2013
9/3/2013
11/4/2013
1/7/2014
3/3/2014
5/5/2014
7/7/2014
9/2/2014
11/3/2014
1/5/2015
3/5/2015
5/5/2015
7/7/2015
9/8/2015
11/2/2015
1/4/2016
3/1/2016
5/4/2016
7/12/2016
9/7/2016
11/8/2016
1/4/2017
3/6/2017
5/4/2017
7/10/2017
9/5/2017
11/1/2017
BW15 (Control)
IODW (Indicator)

CHART 7


Detected Cs-137 Activity in Bottom Sediment
pCi/kg, dry
1,000
900
800
700
600
500
400
300
200
100
0
05/15/81
05/17/82
09/08/82
05/21/85
06/23/87
09/20/88
06/26/90
04/16/91
07/06/92
07/02/93
05/31/94
10/18/95
05/22/97
09/29/98
10/01/99
11/14/00
05/07/02
11/07/02
11/11/03
11/05/04
06/10/05
05/19/06
05/11/07
11/09/07
06/26/08
06/26/08
09/23/09
11/23/11
11/29/12
06/23/14
05/12/15
10/27/16
DC Cs-137
JRR Cs-137
Polynomial Trendline (DC)
Polynomial Trendline (JRR)

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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS
AND INTRALABORATORY COMPARISON PROGRAM RESULTS

NOTE: Appendix A is updated four times a year. The complete appendix is included in March, June, September and December monthly progress reports only.

January, 2017 through December, 2017

Appendix A

Interlaboratory/ Intralaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of it's quality control program in December 1971. These programs are operated by agencies which supply environmental type samples containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table A-1 were obtained through participation in the RAD PT Study Proficiency Testing Program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

Table A-2 lists results for thermoluminescent dosimeters (TLDs), via irradiation and evaluation by the University of Wisconsin-Madison Radiation Calibration Laboratory at the University of Wisconsin Medical Radiation Research Center.

Table A-3 lists results of the analyses on in-house "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table A-4 lists results of the analyses on in-house "blank" samples for the past twelve months. Data for previous years available upon request.

Table A-5 lists analytical results from the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Complete analytical data for duplicate analyses is available upon request.

The results in Table A-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

Results in Table A-7 were obtained through participation in the MRAD PT Study Proficiency Testing Program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurement Laboratory Quality Assessment Program (EML).

Attachment A lists the laboratory precision at the 1 sigma level for various analyses. The acceptance criteria in Table A-3 is set at ± 2 sigma.

Out-of-limit results are explained directly below the result.

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES[a]

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg	5.0 pCi/liter
	> 100 pCi/liter or kg	10% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg	5.0 pCi/liter
	> 50 pCi/liter or kg	10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg	5.0 pCi/liter
	> 30 pCi/liter or kg	10% of known value
Potassium-40	≥ 0.1 g/liter or kg	10% of known value
Gross alpha	≤ 20 pCi/liter	5.0 pCi/liter
	> 20 pCi/liter	25% of known value
Gross beta	≤ 100 pCi/liter	5.0 pCi/liter
	> 100 pCi/liter	10% of known value
Tritium	≤ 4,000 pCi/liter	$\pm 1\sigma$ = 169.85 x (known)$^{0.0933}$
	> 4,000 pCi/liter	10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter	6 pCi/liter
	> 55 pCi/liter	10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter	6 pCi/liter
	> 35 pCi/liter	15% of known value
Iron-55[b]	50 to 100 pCi/liter	10 pCi/liter
	> 100 pCi/liter	10% of known value
Other Analyses [b]	---	20% of known value

[a] From EPA publication, "Environmental Radioactivity Laboratory Intercomparison Studies Program", Fiscal Year, 1981-1982, EPA-600/4-81-004.

[b] Laboratory limit.

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a]. RAD study

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result	ERA Result	Control Limits	Acceptance
ERW-95	1/9/2017	Sr-89	51.9 ± 4.6	55.5	44.3 - 63.2	Pass
ERW-95	1/9/2017	Sr-90	43.6 ± 2.4	43.1	31.8 - 49.5	Pass
ERW-97	1/9/2017	Ba-133	78.2 ± 4.1	85.6	72.0 - 94.2	Pass
ERW-97	1/9/2017	Cs-134	53.9 ± 3.8	52.6	42.4 - 57.9	Pass
ERW-97	1/9/2017	Cs-137	122 ± 6	112	101 - 126	Pass
ERW-97	1/9/2017	Co-60	117 ± 4	113	102 - 126	Pass
ERW-97	1/9/2017	Zn-65	208 ± 13	189	170 - 222	Pass
ERW-99	1/9/2017	Gr. Alpha	48.9 ± 2.4	52.3	27.3 - 65.5	Pass
ERW-99	1/9/2017	Gr. Beta	37.1 ± 1.3	41.6	27.7 - 49.0	Pass
ERW-101	1/9/2017	I-131	22.3 ± 0.6	24.3	20.2 - 28.8	Pass
ERW-103	1/9/2017	Ra-226	11.3 ± 0.4	12.7	9.5 - 14.7	Pass
ERW-103	1/9/2017	Ra-228	6.10 ± 0.90	6.20	3.8 - 8.1	Pass
ERW-103	1/9/2017	Uranium	11.8 ± 0.8	12.6	9.9 - 14.4	Pass
ERW-106	1/9/2017	H-3	12,600 ± 300	12,500	10,900 - 13,800	Pass
ERW-3344	7/10/2017	Sr-89	29.0 ± 10.0	26.4	18.4 - 32.9	Pass
ERW-3344	7/10/2017	Sr-90	33.8 ± 3.3	36.0	26.4 - 41.5	Pass
ERW-3346	7/10/2017	Ba-133	66.4 ± 4.1	66.3	55.2 - 72.9	Pass
ERW-3346	7/10/2017	Cs-134	27.0 ± 4.3	24.4	18.7 - 27.2	Pass
ERW-3346	7/10/2017	Cs-137	57.4 ± 4.5	51.6	46.4 - 59.6	Pass
ERW-3346	7/10/2017	Co-60	92.6 ± 4.4	88.6	79.7 - 99.8	Pass
ERW-3346	7/10/2017	Zn-65	32.4 ± 6.0	32.7	27.3 - 41.6	Pass
ERW-3348	7/10/2017	Gr. Alpha	23.7 ± 1.9	25.7	13.0 - 34.1	Pass
ERW-3348	7/10/2017	Gr. Beta	54.6 ± 1.6	63.0	43.5 - 69.6	Pass
ERW-3350	7/10/2017	I-131	25.4 ± 1.3	25.5	21.2 - 30.1	Pass
ERW-3352	7/10/2017	Ra-226	1.38 ± 0.15	1.29	1.07 - 1.95	Pass
ERW-3352	7/10/2017	Ra-228	6.70 ± 0.93	5.66	3.45 - 7.47	Pass
ERW-3352	7/10/2017	Uranium	58.4 ± 0.9	66.7	54.3 - 73.9	Pass
ERW-3354	7/10/2017	H-3	5,254 ± 224	5,060	4,340 - 5,570	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resources Associates (ERA).

TABLE A-2. Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards). [a b]

			mrem			
Lab Code	Irradiation Date	Description	Delivered Dose	Reported Dose	Performance [c] Quotient (P)	
Environmental, Inc.		Group 1				
2017-1	10/16/2017	Spike 1	59.0	46.9	-0.21	
2017-1	10/16/2017	Spike 2	59.0	50.6	-0.14	
2017-1	10/16/2017	Spike 3	59.0	50.2	-0.15	
2017-1	10/16/2017	Spike 4	59.0	50.8	-0.14	
2017-1	10/16/2017	Spike 5	59.0	49.2	-0.17	
2017-1	10/16/2017	Spike 6	59.0	51.4	-0.13	
2017-1	10/16/2017	Spike 7	59.0	49.4	-0.16	
2017-1	10/16/2017	Spike 8	59.0	50.1	-0.15	
2017-1	10/16/2017	Spike 9	59.0	51.9	-0.12	
2017-1	10/16/2017	Spike 10	59.0	48.0	-0.19	
2017-1	10/16/2017	Spike 11	59.0	51.3	-0.13	
2017-1	10/16/2017	Spike 12	59.0	53.0	-0.10	
2017-1	10/16/2017	Spike 13	59.0	47.8	-0.19	
2017-1	10/16/2017	Spike 14	59.0	49.8	-0.16	
2017-1	10/16/2017	Spike 15	59.0	51.7	-0.12	
2017-1	10/16/2017	Spike 16	59.0	50.6	-0.14	
2017-1	10/16/2017	Spike 17	59.0	47.6	-0.19	
2017-1	10/16/2017	Spike 18	59.0	49.7	-0.16	
2017-1	10/16/2017	Spike 19	59.0	47.9	-0.19	
2017-1	10/16/2017	Spike 20	59.0	48.2	-0.18	
2017-1	10/16/2017	Spike 21	59.0	50.5	-0.14	
2017-1	10/16/2017	Spike 22	59.0	49.0	-0.17	
2017-1	10/16/2017	Spike 23	59.0	51.7	-0.12	
2017-1	10/16/2017	Spike 24	59.0	50.7	-0.14	
2017-1	10/16/2017	Spike 25	59.0	51.1	-0.13	
2017-1	10/16/2017	Spike 26	59.0	49.1	-0.17	
2017-1	10/16/2017	Spike 27	59.0	49.0	-0.17	
2017-1	10/16/2017	Spike 28	59.0	49.1	-0.17	
2017-1	10/16/2017	Spike 29	59.0	47.5	-0.19	
2017-1	10/16/2017	Spike 30	59.0	52.6	-0.11	
Mean (Spike 1-30)				49.9	-0.15	Pass[d]
Standard Deviation (Spike 1-30)				1.6	0.03	Pass[d]

[a] Table A-2 assumes 1 roentgen = 1 rem (NRC -Health Physics Questions and Answers 10 CFR Part 20 - Question 96 - Page Last Reviewed/Updated Thursday, October 01, 2015).

[b] TLD's were irradiated by the University of Wisconsin-Madison Radiation Calibration Laboratory following ANSI N13.37 protocol from a known air kerma rate. TLD's were read and the results were submitted by Environmental Inc. to the University of Wisconsin-Madison Radiation Calibration Laboratory for comparison to the delivered dose.

[c] Performance Quotient (P) is calculated as ((reported dose - conventially true value) ÷ conventially true value) where the conventially true value is the delivered dose.

[d] Acceptance is achieved when neither the absolute value of mean of the P values, nor the standard deviation of the P values exceed 0.15.

TABLE A-2 Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards). [a b]

			mrem		
Lab Code	Irradiation Date	Description	Delivered Dose	Reported Dose	Performance [c] Quotient (P)
Environmental, Inc.		Group 2			
2017-2	10/16/2017	Spike 31	186.0	156.7	-0.16
2017-2	10/16/2017	Spike 32	186.0	163.6	-0.12
2017-2	10/16/2017	Spike 33	186.0	159.2	-0.14
2017-2	10/16/2017	Spike 34	186.0	152.8	-0.18
2017-2	10/16/2017	Spike 35	186.0	163.3	-0.12
2017-2	10/16/2017	Spike 36	186.0	168.4	-0.09
2017-2	10/16/2017	Spike 37	186.0	168.1	-0.10
2017-2	10/16/2017	Spike 38	186.0	157.4	-0.15
2017-2	10/16/2017	Spike 39	186.0	166.1	-0.11
2017-2	10/16/2017	Spike 40	186.0	164.3	-0.12
2017-2	10/16/2017	Spike 41	186.0	159.6	-0.14
2017-2	10/16/2017	Spike 42	186.0	153.2	-0.18
2017-2	10/16/2017	Spike 43	186.0	158.2	-0.15
2017-2	10/16/2017	Spike 44	186.0	164.0	-0.12
2017-2	10/16/2017	Spike 45	186.0	164.5	-0.12
2017-2	10/16/2017	Spike 46	186.0	161.2	-0.13
2017-2	10/16/2017	Spike 47	186.0	160.8	-0.14
2017-2	10/16/2017	Spike 48	186.0	158.8	-0.15
2017-2	10/16/2017	Spike 49	186.0	157.9	-0.15
2017-2	10/16/2017	Spike 50	186.0	158.6	-0.15
2017-2	10/16/2017	Spike 51	186.0	153.3	-0.18
2017-2	10/16/2017	Spike 52	186.0	165.0	-0.11
2017-2	10/16/2017	Spike 53	186.0	164.7	-0.11
2017-2	10/16/2017	Spike 54	186.0	152.2	-0.18
2017-2	10/16/2017	Spike 55	186.0	158.0	-0.15
2017-2	10/16/2017	Spike 56	186.0	156.5	-0.16
2017-2	10/16/2017	Spike 57	186.0	155.9	-0.16
2017-2	10/16/2017	Spike 58	186.0	152.1	-0.18
2017-2	10/16/2017	Spike 59	186.0	157.6	-0.15
2017-2	10/16/2017	Spike 60	186.0	157.0	-0.16
Mean (Spike 31-60)				159.6	-0.14 Pass[d]
Standard Deviation (Spike 31-60)				4.7	0.03 Pass[d]

[a] Table A-2 assumes 1 roentgen = 1 rem (NRC -Health Physics Questions and Answers 10 CFR Part 20 - Question 96 - Page Last Reviewed/Updated Thursday, October 01, 2015).

[b] TLD's were irradiated by the University of Wisconsin-Madison Radiation Calibration Laboratory following ANSI N13.37 protocol from a known air kerma rate. TLD's were read and the results were submitted by Environmental Inc. to the University of Wisconsin-Madison Radiation Calibration Laboratory for comparison to the delivered dose.

[c] Performance Quotient (P) is calculated as ((reported dose - conventially true value) ÷ conventially true value) where the conventially true value is the delivered dose.

[d] Acceptance is achieved when neither the absolute value of mean of the P values, nor the standard deviation of the P values exceed 0.15.

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Concentration [a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
W-010417	4/29/2016	Cs-134	38.2 ± 8.1	36.2	29.0 - 43.4	Pass
W-010417	4/29/2016	Cs-137	78.0 ± 8.8	71.9	57.5 - 86.3	Pass
SPW-306	1/4/2017	Ra-226	18.1 ± 0.4	16.7	13.4 - 20.1	Pass
SPW-32	1/6/2017	H-3	17,849 ± 393	17,243	10,346 - 24,140	Pass
SPW-46	1/9/2017	Gr. Alpha	20.0 ± 0.4	20.1	16.1 - 24.1	Pass
SPW-46	1/9/2017	Gr. Beta	29.0 ± 0.3	28.9	23.1 - 34.6	Pass
SPW-92	1/11/2017	H-3	18,095 ± 397	17,243	10,346 - 24,140	Pass
SPW-142	1/12/2017	Sr-90	39.4 ± 2.3	36.6	29.3 - 43.9	Pass
SPW-155	1/19/2017	H-3	17,974 ± 400	17,243	10,346 - 24,140	Pass
SPW-186	1/23/2017	H-3	17,383 ± 366	17,243	10,346 - 24,140	Pass
SPW-232	1/19/2017	H-3	17,542 ± 368	17,243	10,346 - 24,140	Pass
SPW-304	1/26/2017	H-3	17,782 ± 400	17,243	10,346 - 24,140	Pass
SPW-333	1/30/2017	H-3	17,910 ± 406	17,243	10,346 - 24,140	Pass
SPW-353	2/2/2017	U-234	47.8 ± 2.3	41.7	33.4 - 50.0	Pass
SPW-353	2/2/2017	U-238	50.4 ± 2.4	41.7	33.4 - 50.0	Pass
W-020217	4/29/2016	Cs-134	33.7 ± 6.1	36.2	29.0 - 43.4	Pass
W-020217	4/29/2016	Cs-137	78.4 ± 7.3	71.9	57.5 - 86.3	Pass
SPW-412	2/6/2017	Sr-90	36.2 ± 2.4	36.6	29.3 - 43.9	Pass
SPW-465	2/8/2017	H-3	17,573 ± 396	17,243	10,346 - 24,140	Pass
SPW-561	2/15/2017	H-3	17,358 ± 395	17,243	10,346 - 24,140	Pass
SPW-605	2/16/2017	H-3	17,820 ± 401	17,243	10,346 - 24,140	Pass
SPW-657	2/17/2017	H-3	17,614 ± 376	17,243	10,346 - 24,140	Pass
SPW-714	2/23/2017	H-3	17,662 ± 400	17,243	10,346 - 24,140	Pass
SPW-737	2/28/2017	H-3	17,196 ± 395	17,243	10,346 - 24,140	Pass
SPAP-740	2/28/2017	Gr. Beta	38.9 ± 0.1	41.5	33.2 - 49.8	Pass
SPAP-742	2/24/2017	Cs-134	1.05 ± 0.60	0.98	0.78 - 1.18	Pass
SPAP-742	2/24/2017	Cs-137	90.4 ± 2.5	92.9	74.3 - 111.5	Pass
SPW-746	2/28/2017	Sr-90	42.8 ± 2.5	36.6	29.3 - 43.9	Pass
SPW-748	2/28/2017	C-14	4270 ± 17	4735	3788 - 5682	Pass
SPW-750	2/28/2017	Ni-63	463 ± 4	400	240 - 560	Pass
SPF-752	2/28/2017	Cs-134	1033 ± 38	1090	870 - 1300	Pass
SPF-752	2/28/2017	Cs-137	3071 ± 61	2820	2250 - 3380	Pass
SPW-781	3/1/2017	Ra-226	18.1 ± 0.4	16.7	13.4 - 20.1	Pass
SPW-783	3/1/2017	H-3	17,653 ± 400	17,243	13,794 - 20,692	Pass
W-030517	4/29/2016	Cs-134	38.0 ± 9.0	36.2	29.0 - 43.4	Pass
W-030517	4/29/2016	Cs-137	80.9 ± 9.2	71.9	57.5 - 86.3	Pass
SPW-1010	3/14/2017	H-3	17,312 ± 395	17,243	13,794 - 20,692	Pass
SPW-1026	3/16/2017	Gr. Alpha	22.4 ± 0.5	20.1	12.0 - 28.1	Pass
SPW-1026	3/16/2017	Gr. Beta	29.2 ± 0.3	28.9	17.3 - 40.4	Pass
SPW-1092	3/21/2017	H-3	17,252 ± 390	17,243	13,794 - 20,692	Pass
SPW-1151	3/24/2017	H-3	17,009 ± 388	17,243	13,794 - 20,692	Pass
SPW-1163	3/28/2017	Sr-90	39.0 ± 2.3	36.3	29.0 - 43.5	Pass
SPW-1178	3/29/2017	Ra-228	15.1 ± 1.9	16.0	9.6 - 22.4	Pass

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Concentration [a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-1232	3/30/2017	H-3	17,150 ± 390	17,243	13,794 - 20,692	Pass
SPW-1246	3/31/2017	I-131(G)	33.0 ± 7.3	36.6	29.3 - 43.9	Pass
SPW-1246	3/31/2017	Cs-134	28.9 ± 4.6	26.6	21.3 - 31.9	Pass
SPW-1246	3/31/2017	Cs-137	80.6 ± 8.2	70.4	56.3 - 84.5	Pass
SPMI-1248	3/31/2017	I-131(G)	39.8 ± 7.0	36.6	29.3 - 43.9	Pass
SPMI-1248	3/31/2017	Cs-134	26.9 ± 5.9	26.6	21.3 - 31.9	Pass
SPMI-1248	3/31/2017	Cs-137	70.4 ± 6.9	70.4	56.3 - 84.5	Pass
SPMI-1248	3/31/2017	I-131	36.2 ± 0.6	36.6	29.3 - 43.9	Pass
SPW-1295	3/31/2017	Ra-226	17.9 ± 0.4	16.7	13.4 - 20.1	Pass
SPW-1304	4/4/2017	H-3	17,741 ± 398	17,243	13,794 - 20,692	Pass
SPW-1359	4/5/2017	I-131	44.3 ± 0.5	47.6	38.1 - 57.1	Pass
SPW-1378	4/7/2017	H-3	17,528 ± 395	17,243	13,794 - 20,692	Pass
SPW-1391	4/7/2017	Gr. Alpha	21.1 ± 0.4	20.1	12.0 - 28.1	Pass
SPW-1391	4/7/2017	Gr. Beta	27.8 ± 0.3	28.2	17.3 - 40.4	Pass
SPW-1480	4/12/2017	H-3	17,399 ± 392	17,243	13,794 - 20,692	Pass
W-041317	4/29/2016	Cs-134	34.6 ± 5.6	36.2	29.0 - 43.4	Pass
W-041317	4/29/2016	Cs-137	81.9 ± 8.0	71.9	57.5 - 86.3	Pass
SPW-1480	4/12/2017	H-3	17,399 ± 392	17,243	13,794 - 20,692	Pass
SPW-1575	4/18/2017	H-3	17,419 ± 393	17,243	13,794 - 20,692	Pass
SPW-1626	4/20/2017	Sr-90	37.2 ± 2.4	36.3	29.0 - 43.5	Pass
SPW-1658	4/21/2017	H-3	17,194 ± 391	17,243	13,794 - 20,692	Pass
SPW-1776	4/26/2017	H-3	16,609 ± 386	17,243	13,794 - 20,692	Pass
SPW-1806	4/27/2017	H-3	17,203 ± 390	17,243	13,794 - 20,692	Pass
SPW-1937	5/3/2017	H-3	16,690 ± 385	17,243	13,794 - 20,692	Pass
SPW-1971	5/5/2017	Sr-90	41.5 ± 2.2	36.3	29.0 - 43.5	Pass
SPW-2033	5/8/2017	H-3	16,780 ± 386	17,243	13,794 - 20,692	Pass
SPW-2420	5/9/2017	Ra-226	16.3 ± 0.5	16.7	13.4 - 20.1	Pass
W-051517	4/29/2016	Cs-134	36.3 ± 5.0	36.2	29.0 - 43.4	Pass
W-051517	4/29/2016	Cs-137	68.9 ± 6.6	71.9	57.5 - 86.3	Pass
SPW-2284	5/22/2017	H-3	16,935 ± 389	16,703	13,362 - 20,043	Pass
SPW-2354	5/23/2017	H-3	17,006 ± 390	16,700	13,360 - 20,040	Pass
SPW-2891	5/23/2017	Ra-226	17.5 ± 0.4	16.7	13.4 - 20.1	Pass
SPW-2418	5/23/2017	Ra-228	14.0 ± 1.8	16.0	11.2 - 20.8	Pass
SPW-2439	5/25/2017	Ra-228	13.0 ± 1.8	16.0	11.2 - 20.8	Pass
SPMI-2378	5/24/2017	Sr-89	83.7 ± 4.9	98.4	78.7 - 118.1	Pass
SPMI-2378	5/24/2017	Sr-90	39.5 ± 1.5	36.1	28.9 - 43.4	Pass
SPW-2468	5/26/2017	H-3	17,065 ± 391	16,692	13,354 - 20,031	Pass
SPW-2848	5/26/2017	I-131	56.4 ± 0.6	58.3	46.6 - 70.0	Pass
SPW-2502	6/1/2017	H-3	17,596 ± 396	16,677	13,342 - 20,012	Pass
SPW-2659	6/5/2017	H-3	17,027 ± 390	16,677	13,342 - 20,012	Pass
SPW-2790	6/9/2017	H-3	17,101 ± 392	17,101	13,325 - 19,988	Pass

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Concentration [a]				
		Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-2798	6/12/2017	H-3	16,683 ± 364	16,649	13,319 - 19,978	Pass
SPW-2943	6/19/2017	Sr-90	39.2 ± 2.3	36.1	28.9 - 43.4	Pass
SPW-3509	6/15/2017	Ra-226	17.6 ± 0.5	16.7	13.4 - 20.1	Pass
W-061317	4/29/2016	Cs-134	35.0 ± 6.2	36.2	29.0 - 43.4	Pass
W-061317	4/29/2016	Cs-137	77.4 ± 7.8	71.9	57.5 - 86.3	Pass
SPW-3041	6/23/2017	H-3	16,419 ± 378	16,620	13,296 - 19,945	Pass
SPW-3511	6/23/2017	Ra-226	15.5 ± 0.6	16.7	13.4 - 20.1	Pass
SPW-3103	6/28/2017	H-3	16,507 ± 380	16,507	13,286 - 19,929	Pass
SPW-3117	6/29/2017	Tc-99	112.7 ± 1.9	107.8	86.2 - 129.4	Pass
SPW-3513	6/29/2017	Ra-226	17.8 ± 0.5	16.7	13.4 - 20.1	Pass
SPW-3188	7/3/2017	Sr-90	38.1 ± 2.2	36.1	28.9 - 43.4	Pass
SPW-3283	7/11/2017	H-3	16,057 ± 347	16,649	13,319 - 19,978	Pass
SPW-4054	7/11/2017	Ra-226	17.7 ± 0.4	16.0	11.2 - 20.8	Pass
SPW-3467	7/14/2017	Gr. Alpha	22.3 ± 0.5	20.1	12.0 - 28.1	Pass
SPW-3467	7/14/2017	Gr. Beta	29.1 ± 0.3	28.2	17.3 - 40.4	Pass
SPW-3449	7/15/2017	H-3	17,196 ± 393	16,507	13,286 - 19,929	Pass
SPW-3548	7/19/2017	H-3	16,764 ± 386	16,507	13,286 - 19,929	Pass
SPW-3728	7/24/2017	H-3	16,117 ± 354	16,507	13,286 - 19,929	Pass
SPW-3794	7/28/2017	H-3	16,645 ± 384	16,507	13,286 - 19,929	Pass
W-072817	4/29/2016	Cs-134	38.6 ± 5.6	36.2	29.0 - 43.4	Pass
W-072817	4/29/2016	Cs-137	76.5 ± 7.6	71.9	57.5 - 86.3	Pass
SPW-3905	8/3/2017	Gr. Alpha	22.3 ± 0.5	20.1	12.0 - 28.1	Pass
SPW-3905	8/3/2017	Gr. Beta	27.6 ± 0.3	28.2	17.3 - 40.4	Pass
SPW-4030	8/9/2017	H-3	17,636 ± 403	16,507	13,286 - 19,929	Pass
SPW-4086	8/14/2017	H-3	17,472 ± 401	16,507	13,286 - 19,929	Pass
SPW-4207	8/17/2017	H-3	17,013 ± 393	16,507	13,286 - 19,929	Pass
W-083017	4/29/2016	Cs-134	34.7 ± 6.4	36.2	29.0 - 43.4	Pass
W-083017	4/29/2016	Cs-137	78.2 ± 6.7	71.9	57.5 - 86.3	Pass
SPW-4241	8/19/2017	H-3	17,222 ± 371	16,507	13,286 - 19,929	Pass
SPW-4458	9/1/2017	Ra-226	14.1 ± 1.8	16.7	13.4 - 20.1	Pass
SPW-4466	9/6/2017	Sr-89	22.8 ± 8.5	26.4	21.1 - 31.7	Pass
SPW-4466	9/6/2017	Sr-90	32.5 ± 2.1	33.8	27.0 - 40.6	Pass
SPW-4512	9/8/2017	Gr. Alpha	19.2 ± 0.4	20.1	10.1 - 30.2	Pass
SPW-4512	9/8/2017	Gr. Beta	27.8 ± 0.3	27.9	22.3 - 33.5	Pass
SPW-4586	9/9/2017	H-3	16,586 ± 362	16,507	13,286 - 19,929	Pass
SPW-4720	9/16/2017	H-3	16,439 ± 362	16,507	13,286 - 19,929	Pass
SPW-4834	9/22/2017	H-3	16,238 ± 378	16,507	13,286 - 19,929	Pass
SPW-4935	9/27/2017	H-3	16,595 ± 381	16,507	13,286 - 19,929	Pass
SPW-4937	9/27/2017	Ra-228	5.7 ± 0.9	5.8	4.1 - 7.5	Pass
W-092717	4/29/2016	Cs-134	36.0 ± 5.9	36.2	29.0 - 43.4	Pass
W-092717	4/29/2016	Cs-137	82.6 ± 8.5	71.9	57.5 - 86.3	Pass
SPW-5001	9/29/2017	H-3	16,446 ± 358	16,507	13,286 - 19,929	Pass

TABLE A-3. In-House "Spiked" Samples

Lab Code [b]	Date	Concentration [a]				
		Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-5134	10/6/2017	H-3	16,128 ± 373	16,507	13,286 - 19,929	Pass
SPW-5274	10/12/2017	H-3	16,108 ± 374	16,507	13,286 - 19,929	Pass
W-101217S	10/12/2017	Fe-55	1,491 ± 77	1,482	1,186 - 01,778	Pass
SPW-5408	10/18/2017	Ni-63	203 ± 3	199	159 - 238	Pass
SPW-5430	10/19/2017	H-3	16,453 ± 380	16,507	13,286 - 19,929	Pass
W-102017	4/29/2016	Cs-134	31.3 ± 4.9	36.2	29.0 - 43.4	Pass
W-102017	4/29/2016	Cs-137	80.4 ± 6.9	71.9	57.5 - 86.3	Pass
SPW-5674	10/25/2017	H-3	16,313 ± 380	16,507	13,286 - 19,929	Pass
SPW-5719	10/27/2017	H-3	16,113 ± 350	16,507	13,286 - 19,929	Pass
SPW-5730	10/31/2017	H-3	16,776 ± 387	16,507	13,286 - 19,929	Pass
SPW-5944	10/27/2017	Ra-226	16.4 ± 0.5	16.7	13.4 - 20.1	Pass
SPW-5915	11/9/2017	H-3	16,930 ± 390	16,507	13,286 - 19,929	Pass
SPW-5989	11/11/2017	H-3	16,084 ± 352	16,507	13,286 - 19,929	Pass
W-111417	4/29/2016	Cs-134	38.1 ± 6.2	36.2	29.0 - 43.4	Pass
W-111417	4/29/2016	Cs-137	74.0 ± 7.5	71.9	57.5 - 86.3	Pass
SPW-6121	11/16/2017	H-3	16,276 ± 378	16,507	13,286 - 19,929	Pass
SPW-6132	11/20/2017	H-3	15,897 ± 374	16,507	13,286 - 19,929	Pass
SPW-6249	11/30/2017	Ra-226	12.2 ± 0.4	12.3	9.8 - 14.8	Pass
SPW-6226	12/1/2017	H-3	16,164 ± 378	16,507	13,286 - 19,929	Pass
SPW-6318	12/7/2017	H-3	15,779 ± 372	16,507	13,286 - 19,929	Pass
W-120817	4/29/2016	Cs-134	29.5 ± 5.6	36.2	29.0 - 43.4	Pass
W-120817	4/29/2016	Cs-137	78.8 ± 9.6	71.9	57.5 - 86.3	Pass
SPW-65	12/11/2017	Ra-226	12.5 ± 0.4	12.3	9.8 - 14.8	Pass
SPW-6437	12/13/2017	Gr. Alpha	19.6 ± 0.4	20.1	10.1 - 30.2	Pass
SPW-6437	12/13/2017	Gr. Beta	28.2 ± 0.3	27.9	22.3 - 33.5	Pass
SPW-6463	12/15/2017	H-3	15,560 ± 372	16,507	13,286 - 19,929	Pass

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m3), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).

[b] Laboratory codes : W (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] Results are based on single determinations.

[d] Control limits are established from the precision values listed in Attachment A of this report, adjusted to ± 2s.

NOTE: For fish, gelatin is used for the spike matrix. For vegetation, cabbage is used for the spike matrix.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration [a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-31	Water	1/6/2017	H-3	143	71 ± 75	200
SPW-45	Water	1/9/2017	Gr. Alpha	0.41	0.09 ± 0.30	2
SPW-45	Water	1/9/2017	Gr. Beta	0.74	-0.56 ± 0.50	4
SPW-91	Water	1/11/2017	H-3	151	-23 ± 71	200
SPW-141	Water	1/12/2017	Sr-89	0.55	0.29 ± 0.47	5
SPW-141	Water	1/12/2017	Sr-90	0.67	-0.02 ± 0.31	1
SPW-154	Water	1/19/2017	H-3	155	-17 ± 73	200
SPW-185	Water	1/23/2017	H-3	176	44 ± 94	200
SPW-231	Water	1/19/2017	H-3	179	26 ± 87	200
SPW-303	Water	1/26/2017	H-3	160	8 ± 77	200
SPW-305	Water	1/4/2017	Ra-226	0.02	0.02 ± 0.01	2
SPW-307	Water	1/27/2017	I-131	0.21	0.01 ± 0.11	1.00
SPW-332	Water	1/30/2017	H-3	169	-52 ± 86	200
SPW-352	Water	2/2/2017	U-234	0.14	0.00 ± 0.08	1
SPW-352	Water	2/2/2017	U-238	0.14	0.12 ± 0.15	1
SPW-411	Water	2/6/2017	Sr-89	0.49	0.30 ± 0.35	5
SPW-411	Water	2/6/2017	Sr-90	0.52	-0.22 ± 0.21	1
SPW-464	Water	2/8/2017	H-3	155	2 ± 74	200
SPW-560	Water	2/15/2017	H-3	156	38 ± 77	200
SPW-604	Water	2/16/2017	H-3	154	59 ± 77	200
SPW-656	Water	2/17/2017	H-3	187	28 ± 94	200
SPW-713	Water	2/23/2017	H-3	161	20 ± 81	200
SPW-736	Water	2/28/2017	H-3	161	-75 ± 76	200
SPAP-739	AP	2/28/2017	Gr. Beta	0.002	0.004 ± 0.001	0.01
SPAP-741	AP	2/24/2017	Cs-134	2.27	-0.95 ± 1.29	100
SPAP-741	AP	2/24/2017	Cs-137	2.65	0.17 ± 1.67	100
SPW-747	Water	2/28/2017	C-14	161	-28 ± 97	200
SPW-749	Water	2/28/2017	Ni-63	17	-3 ± 10	200
SPF-751	Fish	2/28/2017	Cs-134	0.008	0.002 ± 0.004	100
SPF-751	Fish	2/28/2017	Cs-137	0.008	0.000 ± 0.005	100
SPW-780	Water	3/1/2017	Ra-226	0.02	0.02 ± 0.01	2
SPW-782	Water	3/1/2017	H-3	154	35 ± 78	200
SPW-3506	Water	3/1/2017	Ra-226	0.03	0.02 ± 0.02	2
SPW-836	Water	3/3/2017	I-131	0.38	0.04 ± 0.18	1
SPW-1009	Water	3/14/2017	H-3	154	-31 ± 72	200
SPW-1025	Water	3/16/2017	Gr. Alpha	0.43	-0.16 ± 0.28	2
SPW-1025	Water	3/16/2017	Gr. Beta	0.75	-0.24 ± 0.52	4
SPW-1091	Water	3/21/2017	H-3	145	60 ± 73	200
SPW-1150	Water	3/24/2017	H-3	152	-31 ± 71	200
SPW-1162	Water	3/28/2017	Sr-89	0.61	-0.39 ± 0.45	5
SPW-1162	Water	3/28/2017	Sr-90	0.52	0.18 ± 0.27	1

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration [a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-1177	Water	3/29/2017	Ra-228	0.83	-0.14 ± 0.36	2
SPW-1231	Water	3/30/2017	H-3	150	24 ± 73	200
SPW-1245	Water	3/31/2017	Cs-134	3.73	0.43 ± 2.18	100
SPW-1245	Water	3/31/2017	Cs-137	3.01	-1.23 ± 2.12	100
SPW-1245	Water	3/31/2017	I-131(G)	5.39	0.92 ± 2.15	100
SPW-1245	Water	3/31/2017	i-131	0.32	0.03 ± 0.18	1
SPMI-1247	Milk	3/31/2017	Cs-134	3.70	1.23 ± 1.96	100
SPMI-1247	Milk	3/31/2017	Cs-137	3.62	-0.84 ± 2.15	100
SPMI-1247	Milk	3/31/2017	I-131(G)	4.42	0.39 ± 2.14	100
SPW-1294	Water	3/31/2017	Ra-226	0.02	0.18 ± 0.02	2
SPW-1303	Water	4/4/2017	H-3	151	8 ± 75	200
SPW-1377	Water	4/7/2017	H-3	150	29 ± 72	200
SPW-1390	Water	4/7/2017	Gr. Alpha	0.42	0.15 ± 0.31	2
SPW-1390	Water	4/7/2017	Gr. Beta	0.73	-0.17 ± 0.51	4
SPW-1479	Water	4/12/2017	H-3	151	89 ± 77	200
SPW-1574	Water	4/18/2017	H-3	144	55 ± 79	200
SPW-1625	Water	4/20/2017	Sr-89	0.59	-0.01 ± 0.50	5
SPW-1625	Water	4/20/2017	Sr-90	0.71	0.16 ± 0.35	1
SPW-1657	Water	4/21/2017	H-3	147	34 ± 73	200
SPW-1775	Water	4/26/2017	H-3	155	67 ± 80	200
SPW-1805	Water	4/27/2017	H-3	153	15 ± 74	200
SPW-1936	Water	5/3/2017	H-3	148	33 ± 71	200
SPW-1970	Water	5/5/2017	Sr-89	0.66	0.34 ± 0.54	5
SPW-1970	Water	5/5/2017	Sr-90	0.62	-0.08 ± 0.28	1
SPW-2032	Water	5/8/2017	H-3	147	66 ± 73	200
SPW-2419	Water	5/9/2017	Ra-226	0.03	0.01 ± 0.03	2
SPW-2283	Water	5/22/2017	H-3	155	24 ± 78	200
SPW-2353	Water	5/23/2017	H-3	151	56 ± 76	200
SPW-2890	Water	5/23/2017	Ra-226	0.03	-0.01 ± 0.02	2
SPMI-2377	Milk	5/24/2017	Sr-89	0.78	0.86 ± 0.93	5
SPMI-2377	Milk	5/24/2017	Sr-90	0.49	0.95 ± 0.33	1
SPW-2438	Water	5/25/2017	Ra-228	0.90	-0.28 ± 0.38	2
SPW-2467	Water	5/26/2017	H-3	152	27 ± 77	200
SPW-2417	Water	5/26/2017	Ra-228	0.80	1.58 ± 0.54	2
SPW-2447	Water	5/26/2017	I-131	0.21	-0.05 ± 0.12	1
SPW-2501	Water	6/1/2017	H-3	151	-23 ± 70	200
SPW-2658	Water	6/5/2017	H-3	152	107 ± 78	200
SPW-2789	Water	6/9/2017	H-3	150	52 ± 77	200
SPW-2797	Water	6/12/2017	H-3	177	7 ± 93	200
SPW-2847	Water	6/14/2017	I-131	0.18	0.03 ± 0.10	1

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration [a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-3508	Water	6/15/2017	Ra-226	0.03	0.00 ± 0.02	2
SPW-2942	Water	6/19/2017	Sr-89	0.58	0.80 ± 0.53	5
SPW-2942	Water	6/19/2017	Sr-90	0.50	0.15 ± 0.25	1
SPW-3042	Water	6/23/2017	H-3	146	25 ± 74	200
SPW-3510	Water	6/23/2017	Ra-226	0.02	0.03 ± 0.02	2
SPW-3102	Water	6/28/2017	H-3	148	-7 ± 73	200
SPW-3116	Water	6/29/2017	Tc-99	5.91	-0.39 ± 3.58	10
SPW-3512	Water	6/29/2017	Ra-226	0.02	-0.01 ± 0.02	2
SPW-3187	Water	7/3/2017	Sr-89	0.62	0.00 ± 0.48	5
SPW-3187	Water	7/3/2017	Sr-90	0.48	0.07 ± 0.23	1
SPW-3282	Water	7/11/2017	H-3	178	-37 ± 84	200
SPW-4053	Water	7/11/2017	Ra-226	0.03	0.02 ± 0.02	2
SPW-3466	Water	7/14/2017	Gr. Alpha	0.42	-0.09 ± 0.28	2
SPW-3466	Water	7/14/2017	Gr. Beta	0.76	-0.18 ± 0.53	4
SPW-3448	Water	7/15/2017	H-3	150	54 ± 77	200
SPW-3727	Water	7/27/2017	Ni-63	90	18 ± 55	200
SPW-3793	Water	7/28/2017	H-3	151	47 ± 82	200
SPW-3904	Water	8/3/2017	Gr. Alpha	0.47	-0.02 ± 0.33	2
SPW-3904	Water	8/3/2017	Gr. Beta	0.75	-0.11 ± 0.52	4
SPW-4029	Water	8/9/2017	H-3	159	11 ± 79	200
SPW-4206	Water	8/17/2017	H-3	157	55 ± 76	200
SPW-4241	Water	8/19/2017	H-3	190	61 ± 96	200
SPW-4085	Water	8/14/2017	H-3	159	-28 ± 77	200
SPW-4206	Water	8/17/2017	H-3	157	55 ± 76	200
SPW-4241	Water	8/19/2017	H-3	190	61 ± 96	200
SPW-4457	Water	9/1/2017	Ra-228	0.78	-0.02 ± 0.36	2
SPW-4465	Water	9/6/2017	Sr-89	0.51	0.30 ± 0.37	5
SPW-4465	Water	9/6/2017	Sr-90	0.46	-0.09 ± 0.20	1
SPW-4585	Water	9/9/2017	H-3	187	-86 ± 83	200
SPW-5720	Water	9/13/2017	Ra-226	0.02	0.13 ± 0.02	2
SPW-4703	Water	9/15/2017	I-131	0.17	0.10 ± 0.10	1
SPW-4719	Water	9/16/2017	H-3	184	-86 ± 93	200
SPW-4833	Water	9/22/2017	H-3	150	5 ± 72	200
SPW-4934	Water	9/27/2017	H-3	148	5 ± 70	200
SPW-4936	Water	9/27/2017	Ra-228	0.80	0.55 ± 0.44	2
SPW-5000	Water	9/29/2017	H-3	183	-13 ± 90	200
SPW-5133	Water	10/6/2017	H-3	144	64 ± 71	200
SPW-5273	Water	10/12/2017	H-3	142	106 ± 72	200

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration [a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-5407	Water	10/18/2017	Ni-63	69	43 ± 43	200
SPW-5429	Water	10/19/2017	H-3	148	54 ± 72	200
SPW-5603	Water	10/23/2017	Sr-89	0.57	0.16 ± 0.47	5
SPW-5603	Water	10/23/2017	Sr-90	0.70	-0.12 ± 0.31	1
SPW-5673	Water	10/25/2017	H-3	156	-36 ± 71	200
SPW-5718	Water	10/27/2017	H-3	182	45 ± 92	200
SPW-5943	Water	10/27/2017	Ra-226	0.02	0.08 ± 0.02	2
SPW-5723	Water	10/30/2017	I-131	0.10	0.03 ± 0.07	1
SPW-5914	Water	11/09/17	H-3	149	-39 ± 68	200
SPW-5988	Water	11/11/2017	H-3	183	-8 ± 88	200
SPW-6120	Water	11/16/2017	H-3	146	83 ± 75	200
SPW-6131	Water	11/20/2017	H-3	151	16 ± 72	200
SPW-6197	Water	11/29/2017	I-131	0.38	0.01 ± 0.18	1
SPW-6248	Water	11/30/2017	Ra-226	0.03	0.15 ± 0.03	2
SPW-6225	Water	12/1/2017	H-3	154	-10 ± 72	200
SPW-6317	Water	12/7/2017	H-3	148	44 ± 74	200
SPW-64	Water	12/11/2017	Ra-226	0.03	0.18 ± 0.03	2
SPW-6436	Water	12/13/2017	Gr. Alpha	0.54	-0.17 ± 0.37	2
SPW-6436	Water	12/13/2017	Gr. Beta	0.74	0.12 ± 0.52	4
SPW-6464	Water	12/15/2017	H-3	148	31 ± 75	200

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result.

TABLE A-5. In-House "Duplicate" Samples

			Concentration [a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
AP-7178,7179	1/3/2017	Be-7	0.047 ± 0.015	0.062 ± 0.017	0.054 ± 0.012	Pass
SW-6986,6987	1/3/2017	Gr. Beta	1.39 ± 0.41	0.77 ± 0.41	1.08 ± 0.29	Pass
E-66,67	1/3/2017	Gr. Beta	1.62 ± 0.05	1.45 ± 0.04	1.54 ± 0.11	Pass
E-66,67	1/3/2017	K-40	1.26 ± 0.14	1.39 ± 0.16	1.32 ± 0.11	Pass
CF-87,88	1/3/2017	Be-7	0.25 ± 0.11	0.30 ± 0.12	0.28 ± 0.08	Pass
CF-87,88	1/3/2017	K-40	7.77 ± 0.39	6.84 ± 0.37	7.31 ± 0.27	Pass
AP-011217	1/12/2017	Be-7	0.137 ± 0.078	0.139 ± 0.082	0.138 ± 0.056	Pass
MI-212,213	1/16/2017	K-40	1,515 ± 98	1,347 ± 107	1,431 ± 73	Pass
WW-321,322	1/19/2017	H-3	675 ± 118	506 ± 133	590 ± 89	Pass
WW-674,675	1/20/2017	H-3	7,326 ± 254	7,717 ± 259	7,522 ± 181	Pass
AP-012317	1/23/2017	Gr. Beta	0.034 ± 0.005	0.038 ± 0.005	0.036 ± 0.004	Pass
WW-298,299	1/24/2017	H-3	5,916 ± 239	5764 ± 237	5840 ± 168	Pass
AP-013117	1/30/2017	Gr. Beta	0.027 ± 0.004	0.028 ± 0.004	0.028 ± 0.003	Pass
WW-500,501	1/31/2017	H-3	1,058 ± 122	1,054 ± 121	1,056 ± 86	Pass
SW-391,392	1/31/2017	Gr. Beta	1.40 ± 0.56	1.62 ± 0.61	1.51 ± 0.41	Pass
SPS-370,371	2/1/2017	K-40	23.47 ± 0.66	23.11 ± 0.72	23.29 ± 0.49	Pass
AP-456,457	2/2/2017	Be-7	0.129 ± 0.076	0.167 ± 0.092	0.148 ± 0.060	Pass
AP-020217	2/2/2017	Gr. Beta	0.021 ± 0.004	0.027 ± 0.004	0.024 ± 0.003	Pass
SPS-414,415	2/3/2017	K-40	19.45 ± 1.85	21.58 ± 1.99	20.52 ± 1.36	Pass
AP-020617	2/6/2017	Gr. Beta	0.023 ± 0.004	0.023 ± 0.004	0.023 ± 0.003	Pass
AP-021417A	2/14/2017	Gr. Beta	0.031 ± 0.004	0.030 ± 0.004	0.030 ± 0.003	Pass
SPW-543	2/14/2017	Gr. Beta	7.99 ± 0.82	9.45 ± 0.88	8.72 ± 0.60	Pass
AP-021417B	2/14/2017	Gr. Beta	0.024 ± 0.004	0.028 ± 0.004	0.026 ± 0.003	Pass
WW-718,719	2/14/2017	H-3	737 ± 113	643 ± 110	690 ± 79	Pass
AP-022017	2/20/2017	Gr. Beta	0.018 ± 0.005	0.021 ± 0.005	0.020 ± 0.004	Pass
WW-755,756	2/22/2017	H-3	3,709 ± 196	3,823 ± 198	3,766 ± 139	Pass
AP-022717	2/27/2017	Gr. Beta	0.021 ± 0.004	0.019 ± 0.004	0.020 ± 0.003	Pass
SPDW-80011,2	3/2/2017	Ra-226	7.29 ± 0.32	6.76 ± 0.30	7.03 ± 0.22	Pass
SPDW-80011,2	3/2/2017	Ra-228	4.68 ± 0.82	6.29 ± 1.03	5.49 ± 0.66	Pass
SPDW-80013,4	3/2/2017	Gr. Alpha	13.57 ± 1.43	12.44 ± 1.37	13.01 ± 0.99	Pass
WW-845,846	3/2/2017	H-3	314 ± 93	249 ± 90	281 ± 65	Pass
AP-030617	3/6/2017	Gr. Beta	0.022 ± 0.004	0.019 ± 0.004	0.020 ± 0.003	Pass
WW-1050,1051	3/8/2017	H-3	14,994 ± 364	14,745 ± 362	14,870 ± 257	Pass
SPS-920,921	3/9/2017	K-40	23.30 ± 1.76	23.13 ± 1.64	23.21 ± 1.20	Pass
WW-1004,1005	3/13/2017	H-3	182 ± 80	158 ± 79	170 ± 56	Pass
SPS-1029,1030	3/15/2017	K-40	11.82 ± 0.68	12.01 ± 0.68	11.92 ± 0.48	Pass
AP-031517	3/15/2017	Gr. Beta	0.020 ± 0.003	0.020 ± 0.003	0.020 ± 0.002	Pass
SPDW-80037,8	3/20/2017	Gr. Alpha	4.54 ± 0.82	5.29 ± 0.91	4.91 ± 0.61	Pass
AP-032017	3/20/2017	Gr. Beta	0.021 ± 0.006	0.021 ± 0.006	0.021 ± 0.005	Pass
WW-1094,1095	3/20/2017	H-3	1,571 ± 137	1,595 ± 138	1,583 ± 175	Pass

TABLE A-5. In-House "Duplicate" Samples

			Concentration [a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
WW-1175,1176	3/20/2017	H-3	218 ± 84	211 ± 84	214 ± 59	Pass
WW-1129,1130	3/21/2017	Gr. Beta	3.51 ± 1.24	2.99 ± 1.17	3.25 ± 0.85	Pass
WW-1219,1220	3/22/2017	H-3	11,467 ± 322	11,516 ± 323	11,492 ± 200	Pass
SPS-1152,1153	3/27/2017	Ac-228	20.39 ± 0.75	20.43 ± 0.88	20.41 ± 0.58	Pass
SPS-1152,1153	3/27/2017	Pb-214	17.22 ± 0.50	16.44 ± 0.52	16.83 ± 0.36	Pass
SPDW-80047,8	3/28/2017	Ra-226	2.06 ± 0.23	1.60 ± 0.32	1.83 ± 0.20	Pass
SPDW-80047,8	3/28/2017	Ra-228	0.53 ± 0.48	0.78 ± 0.49	0.66 ± 0.34	Pass
SWU-1242,1243	3/28/2017	Gr. Beta	2.04 ± 0.81	2.47 ± 0.69	2.26 ± 0.53	Pass
SPS-1198,1199	3/29/2017	K-40	16.95 ± 1.85	18.33 ± 1.71	17.64 ± 1.26	Pass
SPDW-80050,1	3/29/2017	Gr. Alpha	3.19 ± 0.80	3.39 ± 0.78	3.29 ± 0.56	Pass
SPDW-80050,1	3/29/2017	Gr. Beta	1.58 ± 0.60	2.08 ± 0.63	1.83 ± 0.44	Pass
AP-1706,1707	3/30/2017	Be-7	0.068 ± 0.018	0.072 ± 0.017	0.070 ± 0.012	Pass
SW-1381,1382	4/5/2017	H-3	402 ± 92	309 ± 88	356 ± 64	Pass
WW-1446,1447	4/6/2017	H-3	305 ± 89	358 ± 91	332 ± 64	Pass
WW-1532,1533	4/10/2017	H-3	19,124 ± 412	18,991 ± 410	19,058 ± 291	Pass
WW-1618,1619	4/12/2017	H-3	4,187 ± 203	4,305 ± 205	4,246 ± 144	Pass
SS-1553,1554	4/13/2017	Gr. Beta	7.16 ± 0.99	6.09 ± 0.91	6.63 ± 0.67	Pass
SS-1553,1554	4/13/2017	K-40	4.60 ± 0.32	4.84 ± 0.34	4.72 ± 0.23	Pass
SS-1553,1554	4/13/2017	Tl-208	0.038 ± 0.016	0.032 ± 0.011	0.035 ± 0.010	Pass
SS-1553,1554	4/13/2017	Pb-212	0.101 ± 0.015	0.096 ± 0.015	0.098 ± 0.010	Pass
SS-1553,1554	4/13/2017	Bi-214	0.094 ± 0.032	0.109 ± 0.022	0.101 ± 0.019	Pass
SS-1553,1554	4/13/2017	Ac-228	0.089 ± 0.042	0.111 ± 0.046	0.100 ± 0.031	Pass
P-2015,2016	5/4/2017	H-3	189 ± 80	212 ± 81	200 ± 57	Pass
WW-2336,2337	5/8/2017	H-3	422 ± 97	298 ± 91	360 ± 66	Pass
AP-051117	5/11/2017	Gr. Beta	0.018 ± 0.003	0.025 ± 0.004	0.021 ± 0.002	Pass
WW-2497,2498	5/23/2017	H-3	1,268 ± 127	1,247 ± 126	1,257 ± 89	Pass
WW-2583,2584	5/23/2017	H-3	5,159 ± 224	5,223 ± 126	5,191 ± 129	Pass
WW-2732,2733	5/23/2017	H-3	8,559 ± 282	8,570 ± 283	8,564 ± 200	Pass
XW-1218,1219	5/23/2017	H-3	11,467 ± 282	11,516 ± 283	11,492 ± 200	Pass
MI-2428,2429	5/24/2017	K-40	1,752 ± 137	1,805 ± 132	1,778 ± 95	Pass
SO-2562,2563	5/24/2017	K-40	7.87 ± 0.50	8.64 ± 0.49	8.25 ± 0.35	Pass
WW-3023,3024	5/24/2017	H-3	27,398 ± 486	27,733 ± 489	27,565 ± 344	Pass
SO-2453,2454	5/25/2017	Gr. Beta	14.38 ± 0.93	15.70 ± 1.06	15.04 ± 0.70	Pass
SO-2453,2454	5/25/2017	Cs-137	0.17 ± 0.03	0.18 ± 0.03	0.17 ± 0.02	Pass
SO-2453,2454	5/25/2017	K-40	9.80 ± 0.50	9.19 ± 0.57	9.50 ± 0.38	Pass
SO-2453,2454	5/25/2017	Tl-208	0.09 ± 0.02	0.10 ± 0.03	0.09 ± 0.02	Pass
SO-2453,2454	5/25/2017	Pb-212	0.29 ± 0.03	0.30 ± 0.03	0.29 ± 0.02	Pass
SO-2453,2454	5/25/2017	Bi-214	0.24 ± 0.03	0.18 ± 0.04	0.21 ± 0.03	Pass
SO-2453,2454	5/25/2017	Ra-226	0.82 ± 0.22	0.62 ± 0.27	0.72 ± 0.17	Pass
SO-2453,2454	5/25/2017	Ac-228	0.32 ± 0.07	0.28 ± 0.08	0.30 ± 0.05	Pass

TABLE A-5. In-House "Duplicate" Samples

			Concentration [a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
SWT-2625,2626	5/30/2017	Gr. Beta	0.64 ± 0.53	1.08 ± 0.55	0.86 ± 0.38	Pass
AP-053117	5/31/2017	Gr. Beta	0.013 ± 0.003	0.011 ± 0.003	0.012 ± 0.002	Pass
G-2646,2647	6/1/2017	Be-7	1.02 ± 0.17	1.06 ± 0.26	1.04 ± 0.15	Pass
G-2646,2647	6/1/2017	K-40	7.51 ± 0.49	6.55 ± 0.51	7.03 ± 0.36	Pass
SL-2669,70	6/1/2017	Be-7	0.34 ± 0.06	0.30 ± 0.06	0.32 ± 0.04	Pass
SL-2669,70	6/1/2017	K-40	4.35 ± 0.14	4.39 ± 0.15	4.37 ± 0.10	Pass
F-2711,2712	6/2/2017	K-40	2.56 ± 0.32	2.77 ± 0.44	2.66 ± 0.27	Pass
AP-060617	6/6/2017	Gr. Beta	0.026 ± 0.005	0.027 ± 0.005	0.027 ± 0.004	Pass
SW-2849,50	6/8/2017	H-3	8,178 ± 273	8,563 ± 279	8,371 ± 195	Pass
AP-061217	6/12/2017	Gr. Beta	0.027 ± 0.005	0.027 ± 0.005	0.027 ± 0.004	Pass
BS-3446,3447	6/12/2017	K-40	8.30 ± 0.47	8.57 ± 0.47	8.44 ± 0.33	Pass
VE-2870,2871	6/13/2017	K-40	3.65 ± 0.25	3.90 ± 0.26	3.77 ± 0.18	Pass
AP-2914,5	6/15/2017	Be-7	0.269 ± 0.146	0.212 ± 0.123	0.240 ± 0.095	Pass
AP-3067,8	6/15/2017	Be-7	0.204 ± 0.113	0.328 ± 0.126	0.266 ± 0.085	Pass
AP-061917	6/19/2017	Gr. Beta	0.020 ± 0.004	0.019 ± 0.004	0.020 ± 0.003	Pass
AP-3610,1	6/26/2017	Be-7	0.107 ± 0.015	0.116 ± 0.021	0.111 ± 0.013	Pass
AP-062617	6/26/2017	Gr. Beta	0.017 ± 0.004	0.021 ± 0.004	0.019 ± 0.003	Pass
AP-3673,3674	7/3/2017	Be-7	0.087 ± 0.008	0.078 ± 0.008	0.083 ± 0.006	Pass
AP-3287,3288	7/6/2017	Be-7	0.207 ± 0.112	0.244 ± 0.096	0.226 ± 0.074	Pass
WW-3308,3309	7/7/2017	H-3	549 ± 108	501 ± 107	525 ± 76	Pass
VE-3362,3363	7/12/2017	K-40	2.32 ± 0.17	2.40 ± 0.16	2.36 ± 0.12	Pass
VE-3589,3590	7/18/2017	K-40	5.25 ± 0.33	4.64 ± 0.33	4.94 ± 0.23	Pass
SG-3631,3632	7/18/2017	Pb-214	3.03 ± 0.11	2.97 ± 0.11	3.00 ± 0.08	Pass
SG-3631,3632	7/18/2017	Ac-228	2.47 ± 0.22	2.56 ± 0.23	2.52 ± 0.16	Pass
WW-3846,3847	7/25/2017	H-3	505 ± 101	446 ± 98	475 ± 70	Pass
F-4509,4510	7/26/2017	K-40	0.85 ± 0.25	1.00 ± 0.25	0.93 ± 0.18	Pass
F-4509,4510	7/26/2017	Gr. Beta	1.19 ± 0.03	1.18 ± 0.03	1.18 ± 0.02	Pass
G-3804,3805	7/27/2017	Be-7	3.72 ± 0.39	3.47 ± 0.40	3.59 ± 0.28	Pass
G-3804,3805	7/27/2017	K-40	4.21 ± 0.52	4.46 ± 0.52	4.34 ± 0.33	Pass
SL-3888,3889	8/1/2017	Be-7	0.77 ± 0.04	0.73 ± 0.07	0.75 ± 0.04	Pass
SL-3888,3889	8/1/2017	K-40	0.94 ± 0.04	0.87 ± 0.08	0.90 ± 0.23	Pass
WW-4158,4159	8/8/2017	H-3	321 ± 90	270 ± 88	295 ± 63	Pass
VE-4179,4180	8/14/2017	K-40	1.84 ± 0.18	1.90 ± 0.21	1.87 ± 0.14	Pass
AP-4289,4290	8/17/2017	Be-7	0.212 ± 0.095	0.162 ± 0.080	0.187 ± 0.062	Pass
F-4333,4334	8/18/2017	K-40	3.22 ± 0.41	3.62 ± 0.42	3.42 ± 0.29	Pass
CF-4310,4311	8/21/2017	K-40	10.94 ± 0.74	11.48 ± 0.50	11.21 ± 0.45	Pass
DW-80161,80162	8/22/2017	Ra-226	1.22 ± 0.15	1.19 ± 0.17	1.21 ± 0.11	Pass
DW-80161,80162	8/22/2017	Ra-228	1.99 ± 0.63	0.70 ± 0.49	1.35 ± 0.40	Pass
VE-4398,4399	8/28/2017	Be-7	0.13 ± 0.07	0.13 ± 0.08	0.13 ± 0.05	Pass

TABLE A-5. In-House "Duplicate" Samples

			Concentration [a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
VE-4398,4399	8/28/2017	K-40	3.32 ± 0.22	3.48 ± 0.25	3.40 ± 0.17	Pass
SW-4463,4464	8/29/2017	H-3	495 ± 106	491 ± 106	493 ± 75	Pass
LW-4486,4487	8/31/2017	Gr. Beta	0.425 ± 0.471	1.358 ± 0.571	0.892 ± 0.370	Pass
VE-4561,4562	9/6/2017	Be-7	5.89 ± 0.29	5.76 ± 0.25	5.83 ± 0.19	Pass
VE-4561,4562	9/6/2017	K-40	3.73 ± 0.34	3.77 ± 0.29	3.75 ± 0.22	Pass
BO-5122,5123	9/8/2017	K-40	4.50 ± 0.36	4.50 ± 0.36	4.50 ± 0.25	Pass
VE-4692,4693	9/12/2017	K-40	5.16 ± 0.13	5.31 ± 0.36	5.24 ± 0.19	Pass
SS-4650,4651	9/12/2017	K-40	10.55 ± 0.51	10.41 ± 0.54	10.48 ± 0.37	Pass
MI-4671,4672	9/13/2017	K-40	1,347 ± 115	1,283 ± 118	1,315 ± 82	Pass
MI-4671,4672	9/13/2017	Sr-90	0.7 ± 0.3	0.5 ± 0.3	0.6 ± 0.2	Pass
VE-4973,4974	9/17/2017	K-40	1.11 ± 0.15	1.17 ± 0.13	1.14 ± 0.10	Pass
F-4928,4929	9/19/2017	K-40	1.84 ± 0.31	1.68 ± 0.34	1.76 ± 0.23	Pass
S-4865,4866	9/20/2017	K-40	21.07 ± 2.39	19.09 ± 2.51	20.08 ± 1.73	Pass
VE-4907,4908	9/20/2017	K-40	3.83 ± 0.44	4.28 ± 0.31	4.05 ± 0.27	Pass
VE-4844,4845	9/21/2017	K-40	1.81 ± 0.22	1.88 ± 0.21	1.84 ± 0.15	Pass
AP-5572,5573	9/27/2017	Be-7	0.082 ± 0.015	0.075 ± 0.014	0.078 ± 0.010	Pass
LW-5145,5146	9/28/2017	Gr. Beta	0.84 ± 0.49	1.47 ± 0.57	1.16 ± 0.38	Pass
AP-092917	9/29/2017	Gr. Beta	0.038 ± 0.004	0.031 ± 0.004	0.035 ± 0.003	Pass
WW-5080,5081	10/2/2017	H-3	208 ± 79	223 ± 80	215 ± 56	Pass
AP-100217	10/2/2017	Gr. Beta	0.025 ± 0.005	0.028 ± 0.005	0.026 ± 0.003	Pass
AP-100317	10/3/2017	Gr. Beta	0.037 ± 0.004	0.033 ± 0.004	0.035 ± 0.003	Pass
S-5165,5166	10/4/2017	K-40	15.93 ± 2.30	20.34 ± 3.15	18.14 ± 1.95	Pass
VE-5228,5229	10/5/2017	K-40	3.25 ± 0.25	2.82 ± 0.24	3.04 ± 0.17	Pass
AP-100917	10/9/2017	Gr. Beta	0.021 ± 0.004	0.025 ± 0.004	0.023 ± 0.003	Pass
VE-5293,5294	10/10/2017	K-40	3.89 ± 0.30	4.08 ± 0.34	3.99 ± 0.22	Pass
DW-80184,80185	10/11/2017	Gr. Alpha	2.17 ± 0.81	2.50 ± 0.81	2.34 ± 0.57	Pass
DW-80184,80185	10/11/2017	Gr. Beta	9.45 ± 0.79	10.20 ± 0.83	9.83 ± 0.57	Pass
S-5421,5422	10/12/2017	K-40	8.82 ± 1.94	7.97 ± 0.72	8.40 ± 1.03	Pass
AP-101617	10/16/2017	Gr. Beta	0.025 ± 0.005	0.022 ± 0.004	0.024 ± 0.003	Pass
F-5658,5659	10/19/2017	K-40	2.44 ± 0.41	2.57 ± 0.39	2.51 ± 0.28	Pass
SO-5704,5705	10/25/2017	Cs-137	0.05 ± 0.02	0.04 ± 0.02	0.04 ± 0.01	Pass
SO-5704,5705	10/25/2017	K-40	10.08 ± 0.51	9.57 ± 0.56	9.83 ± 0.38	Pass
SO-5704,5705	10/25/2017	Tl-208	0.10 ± 0.02	0.09 ± 0.02	0.10 ± 0.01	Pass
SO-5704,5705	10/25/2017	Bi-214	0.34 ± 0.04	0.27 ± 0.04	0.30 ± 0.03	Pass
SO-5704,5705	10/25/2017	Pb-212	0.28 ± 0.03	0.27 ± 0.03	0.27 ± 0.02	Pass
SO-5704,5705	10/25/2017	Ra-226	1.15 ± 0.52	0.59 ± 0.22	0.87 ± 0.28	Pass
SO-5704,5705	10/25/2017	Ac-228	0.33 ± 0.05	0.31 ± 0.07	0.32 ± 0.04	Pass
SO-5704,5705	10/25/2017	Gr. Beta	18.34 ± 1.80	16.50 ± 1.03	17.42 ± 1.04	Pass
AP-5732,5733	10/26/2017	Be-7	0.139 ± 0.064	0.175 ± 0.075	0.157 ± 0.049	Pass

TABLE A-5. In-House "Duplicate" Samples

			Concentration [a]			
Lab Code	Date	Analysis	First Result	Second Result	Averaged Result	Acceptance
SW-5753,5754	10/31/2017	H-3	220 ± 83	279 ± 86	249 ± 60	Pass
SWU-5816,5817	10/31/2017	Gr. Beta	1.51 ± 1.00	2.02 ± 1.02	1.76 ± 0.71	Pass
AP-103117	10/31/2017	Gr. Beta	0.015 ± 0.004	0.014 ± 0.004	0.015 ± 0.003	Pass
SO-5923,5924	11/1/2017	Cs-137	0.30 ± 0.04	0.31 ± 0.04	0.31 ± 0.03	Pass
SO-5923,5924	11/1/2017	K-40	10.52 ± 0.61	10.56 ± 0.67	10.54 ± 0.45	Pass
AP-5858,5859	11/2/2017	Be-7	0.145 ± 0.075	0.146 ± 0.084	0.145 ± 0.056	Pass
AP-110717	11/7/2017	Be-7	0.026 ± 0.004	0.030 ± 0.004	0.028 ± 0.003	Pass
WW-6032,6033	11/7/2017	H-3	204 ± 86	298 ± 80	251 ± 59	Pass
WW-6074,6075	11/8/2017	H-3	72,247 ± 786	73,062 ± 791	72,655 ± 558	Pass
BS-6053,6054	11/13/2017	K-40	7.99 ± 0.62	9.20 ± 0.68	8.60 ± 0.46	Pass
BS-6053,6054	11/13/2017	Cs-137	0.07 ± 0.03	0.08 ± 0.03	0.07 ± 0.02	Pass
DW-80211,80212	11/14/2017	Gr. Alpha	2.30 ± 0.80	3.60 ± 1.00	2.95 ± 0.64	Pass
DW-80211,80212	11/14/2017	Gr. Beta	9.32 ± 0.81	8.99 ± 0.81	9.16 ± 0.57	Pass
DW-80214,80215	11/14/2017	Ra-226	1.36 ± 0.22	1.35 ± 0.15	1.355 ± 0.13	Pass
DW-80214,80215	11/14/2017	Ra-228	1.41 ± 0.51	0.90 ± 0.45	1.16 ± 0.34	Pass
WW-6152,6153	11/15/2017	H-3	416 ± 94	328 ± 90	372 ± 65	Pass
SWU-6219,6220	11/28/2017	Gr. Beta	1.04 ± 0.54	1.75 ± 0.58	1.39 ± 0.39	Pass
SS-6242,6243	11/29/2017	K-40	24.17 ± 1.05	22.31 ± 1.03	23.24 ± 0.74	Pass
SS-6242,6243	11/29/2017	Cs-137	0.11 ± 0.03	0.08 ± 0.03	0.10 ± 0.02	Pass
SG-6938,6939	11/28/2017	Pb-214	15.28 ± 0.34	14.96 ± 0.43	15.12 ± 0.27	Pass
SG-6938,6939	11/28/2017	Ac-228	18.99 ± 0.59	19.92 ± 0.79	19.46 ± 0.49	Pass
AP-112817	11/28/2017	Gr. Beta	0.026 ± 0.004	0.030 ± 0.004	0.028 ± 0.003	Pass
SQ-6286,6287	12/1/2017	Gr. Alpha	70.6 ± 6.2	60.9 ± 6.0	65.8 ± 4.3	Pass
SQ-6286,6287	12/1/2017	Gr. Beta	48.9 ± 2.7	53.7 ± 2.8	51.3 ± 1.9	Pass
SQ-6286,6287	12/1/2017	Ra-226	11.3 ± 0.4	10.7 ± 0.5	11.0 ± 0.3	Pass
SQ-6286,6287	12/1/2017	Ra-228	13.5 ± 0.9	13.2 ± 1.0	13.4 ± 0.7	Pass
SG-6286,6287	12/1/2017	K-40	5.10 ± 1.82	6.65 ± 1.53	5.88 ± 1.19	Pass
AP-120417	12/4/2017	Gr. Beta	0.037 ± 0.006	0.035 ± 0.005	0.036 ± 0.004	Pass
WW-6548,6549	12/19/2017	H-3	8,428 ± 280	8,604 ± 282	8,516 ± 199	Pass
AP-122717	12/27/2017	Gr. Beta	0.047 ± 0.004	0.043 ± 0.004	0.045 ± 0.003	Pass
XAP-6762,6763	12/31/2017	Co-60	2.43 ± 1.30	2.24 ± 0.82	2.34 ± 0.77	Pass
XAP-6762,6763	12/31/2017	Cs-137	4.21 ± 1.11	4.05 ± 0.96	4.14 ± 0.73	Pass

Note: Duplicate analyses are performed on every twentieth sample received in-house. Results are not listed for those analyses with activities that measure below the LLD.

[a] Results are reported in units of pCi/L, except for air filters (pCi/Filter or pCi/m3), food products, vegetation, soil and sediment (pCi/g).

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Reference Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
MASO-903	2/1/2017	Am-241	60.9 ± 6.9	67.0	46.9 - 87.1	Pass
MASO-903	2/1/2017	Cs-134	1360 ± 14	1550	1085 - 2015	Pass
MASO-903	2/1/2017	Cs-137	678 ± 13	611	428 - 794	Pass
MASO-903	2/1/2017	Co-57	1.63 ± 1.69	0.00	NA [c]	Pass
MASO-903	2/1/2017	Co-60	909 ± 12	891	624 - 1158	Pass
MASO-903	2/1/2017	Mn-54	1052 ± 17	967	677 - 1257	Pass
MASO-903	2/1/2017	K-40	657 ± 68	607	425 - 789	Pass
MASO-903	2/1/2017	Zn-65	-0.52 ± 7.40	0.00	NA [c]	Pass
MASO-903	2/1/2017	Ni-63	3.25 ± 7.17	0.00	NA [c]	Pass
MASO-903	2/1/2017	Pu-238	0.46 ± 0.69	0.41	NA [e]	Pass
MASO-903	2/1/2017	Pu-239/240	56.8 ± 5.9	59.8	41.9 - 77.7	Pass
MASO-903	2/1/2017	Sr-90	501 ± 17	624	437 - 811	Pass
MASO-903	2/1/2017	Tc-99	748 ± 16	656	459 - 853	Pass
MAW-849	2/1/2017	I-129	-0.05 ± 0.12	0.00	NA [c]	Pass
MAVE-905	2/1/2017	Cs-134	6.61 ± 0.16	6.95	4.87 - 9.04	Pass
MAVE-905	2/1/2017	Cs-137	4.97 ± 0.18	4.60	3.22 - 5.98	Pass
MAVE-905	2/1/2017	Co-57	-0.01 ± 0.03	0.00	NA [c]	Pass
MAVE-905	2/1/2017	Co-60	9.51 ± 0.17	8.75	6.13 - 11.38	Pass
MAVE-905	2/1/2017	Mn-54	3.67 ± 0.17	3.28	2.30 - 4.26	Pass
MAVE-905	2/1/2017	Zn-65	6.12 ± 0.44	5.39	3.77 - 7.01	Pass
MAW-847	2/1/2017	Am-241	0.679 ± 0.079	0.846	0.592 - 1.100	Pass
MAW-847	2/1/2017	Cs-134	0.03 ± 0.10	0.00	NA [c]	Pass
MAW-847	2/1/2017	Cs-137	12.7 ± 0.4	11.1	7.8 - 14.4	Pass
MAW-847 [d]	2/1/2017	Co-57	2.7 ± 0.3	28.5	20.0 - 37.1	Fail
MAW-847	2/1/2017	Co-60	13.5 ± 0.3	12.3	8.6 - 16.0	Pass
MAW-847	2/1/2017	Mn-54	16.5 ± 0.4	14.9	10.4 - 19.4	Pass
MAW-847	2/1/2017	K-40	287 ± 6	254	178 - 330	Pass
MAW-847	2/1/2017	Zn-65	-0.15 ± 0.23	0.00	NA [c]	Pass
MAW-847	2/1/2017	H-3	275 ± 10	249	174 - 324	Pass
MAW-847	2/1/2017	Fe-55	2.4 ± 13.6	1.7	NA [e]	Pass
MAW-847	2/1/2017	Ni-63	10.1 ± 2.8	12.2	8.5 - 15.9	Pass
MAW-847	2/1/2017	Pu-238	0.729 ± 0.097	0.703	0.492 - 0.914	Pass
MAW-847	2/1/2017	Pu-239/240	0.866 ± 0.102	0.934	0.654 - 1.214	Pass
MAW-847	2/1/2017	Ra-226	0.506 ± 0.053	0.504	0.353 - 0.655	Pass
MAW-847	2/1/2017	Sr-90	10.0 ± 0.8	10.1	7.1 - 13.1	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Reference Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
MAW-847	2/1/2017	Tc-99	4.77 ± 0.62	6.25	4.38 - 8.13	Pass
MAW-847	2/1/2017	U-234/233	1.19 ± 0.10	1.16	0.81 - 1.51	Pass
MAW-847	2/1/2017	U-238	1.15 ± 0.10	1.20	0.84 - 1.56	Pass
MAAP-907[f]	2/1/2017	Am-241	0.0540 ± 0.0140	0.0376	0.0263 - 0.0489	Fail
MAAP-907	2/1/2017	Cs-134	1.31 ± 0.06	1.42	0.99 - 1.85	Pass
MAAP-907	2/1/2017	Cs-137	0.797 ± 0.080	0.685	0.480 - 0.891	Pass
MAAP-907	2/1/2017	Co-57	1.86 ± 0.06	1.70	1.19 - 2.21	Pass
MAAP-907	2/1/2017	Co-60	0.86 ± 0.05	0.78	0.55 - 1.01	Pass
MAAP-907	2/1/2017	Mn-54	0.01 ± 0.03	0.00	NA [c]	Pass
MAAP-907	2/1/2017	Zn-65	1.62 ± 0.13	1.29	0.90 - 1.68	Pass
MAAP-907	2/1/2017	Pu-238	0.0530 ± 0.0190	0.0598	0.0419 - 0.0777	Pass
MAAP-907	2/1/2017	Pu-239/240	0.0490 ± 0.0160	0.0460	0.0322 - 0.0598	Pass
MAAP-907	2/1/2017	Sr-90	0.648 ± 0.120	0.651	0.456 - 0.846	Pass
MAAP-907	2/1/2017	U-234/233	0.086 ± 0.024	0.104	0.073 - 0.135	Pass
MAAP-907	2/1/2017	U-238	0.097 ± 0.024	0.107	0.075 - 0.139	Pass
MASO-4515	8/1/2017	Am-241	45.9 ± 7.0	58.8	41.2 - 76.4	Pass[g]
MASO-4515	8/1/2017	Cs-134	409 ± 7	448	314 - 582	Pass[g]
MASO-4515	8/1/2017	Cs-137	798 ± 12	722	505 - 939	Pass[g]
MASO-4515	8/1/2017	Co-57	1572 ± 10	1458	1021 - 1895	Pass[g]
MASO-4515	8/1/2017	Co-60	0.2 ± 1.4	0.00	NA [c]	Pass[g]
MASO-4515	8/1/2017	Mn-54	934 ± 13	825	578 - 1073	Pass[g]
MASO-4515	8/1/2017	K-40	704 ± 53	592	414 - 770	Pass[g]
MASO-4515	8/1/2017	Zn-65	667 ± 17	559	391 - 727	Pass[g]
MASO-4515	8/1/2017	Pu-238	101 ± 9	92	64 - 120	Pass[g]
MASO-4515	8/1/2017	Pu-239/240	74.8 ± 7.7	68.8	48.2 - 89.4	Pass[g]
MASO-4515	8/1/2017	Sr-90	252 ± 7	289	202 - 376	Pass[g]
MAW-4494	8/1/2017	I-129	2.31 ± 0.10	2.31	1.62 - 3.00	Pass
MAVE-4517	8/1/2017	Cs-134	2.40 ± 0.10	2.32	1.62 - 3.02	Pass
MAVE-4517	8/1/2017	Cs-137	-0.002 ± 0.048	0.000	NA [c]	Pass
MAVE-4517	8/1/2017	Co-57	3.3 ± 0.1	2.8	2.0 - 3.6	Pass
MAVE-4517	8/1/2017	Co-60	2.10 ± 0.10	2.07	1.45 - 2.69	Pass
MAVE-4517	8/1/2017	Mn-54	3.00 ± 0.20	2.62	1.83 - 3.41	Pass
MAVE-4517	8/1/2017	Zn-65	5.90 ± 0.30	5.37	3.76 - 6.98	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration [a]			
Lab Code [b]	Reference Date	Analysis	Laboratory result	Known Activity	Control Limits [c]	Acceptance
MAW-4513	8/1/2017	Am-241	0.820 ± 0.220	0.892	0.624 - 1.160	Pass
MAW-4513	8/1/2017	Cs-134	10.3 ± 0.3	11.5	8.1 - 15.0	Pass
MAW-4513	8/1/2017	Cs-137	17.2 ± 0.5	16.3	11.4 - 21.2	Pass
MAW-4513	8/1/2017	Co-57	12.7 ± 0.4	12.1	8.5 - 15.7	Pass
MAW-4513	8/1/2017	Co-60	10.6 ± 0.3	10.7	7.5 - 13.9	Pass
MAW-4513	8/1/2017	Mn-54	15.6 ± 0.4	14.9	10.4 - 19.4	Pass
MAW-4513	8/1/2017	Zn-65	15.9 ± 0.7	15.5	10.9 - 20.2	Pass
MAW-4513	8/1/2017	H-3	255 ± 9	258	181 - 335	Pass
MAW-4513	8/1/2017	Fe-55	21.6 ± 6.6	19.4	13.6 - 25.2	Pass
MAW-4513	8/1/2017	Ni-63	-0.1 ± 2.0	0.0	NA [c]	Pass
MAW-4513	8/1/2017	Pu-238	0.590 ± 0.080	0.603	0.422 - 0.784	Pass
MAW-4513	8/1/2017	Pu-239/240	0.740 ± 0.090	0.781	0.547 - 1.015	Pass
MAW-4513	8/1/2017	Ra-226	1.000 ± 0.100	0.858	0.601 - 1.115	Pass
MAW-4513	8/1/2017	Sr-90	7.80 ± 0.60	7.77	5.44 - 10.10	Pass
MAW-4513	8/1/2017	Tc-99	6.70 ± 0.40	6.73	4.71 - 8.75	Pass
MAW-4513	8/1/2017	U-2344/233	0.94 ± 0.06	1.01	0.71 - 1.31	Pass
MAW-4513	8/1/2017	U-238	0.97 ± 0.07	1.04	0.73 - 1.35	Pass
MAAP-4519[h]	8/1/2017	Am-241	0.0400 ± 0.0100	0.0612	0.0428 - 0.0796	Fail
MAAP-4519	8/1/2017	Cs-134	0.90 ± 0.10	1.00	0.70 - 1.30	Pass
MAAP-4519	8/1/2017	Cs-137	0.90 ± 0.10	0.82	0.57 - 1.07	Pass
MAAP-4519	8/1/2017	Co-57	0.01 ± 0.01	0.00	NA [c]	Pass
MAAP-4519	8/1/2017	Co-60	0.70 ± 0.10	0.68	0.48 - 0.88	Pass
MAAP-4519	8/1/2017	Mn-54	1.50 ± 0.10	1.30	0.91 - 1.69	Pass
MAAP-4519	8/1/2017	Zn-65	1.30 ± 0.10	1.08	0.76 - 1.40	Pass
MAAP-4519	8/1/2017	Pu-238	0.0300 ± 0.0100	0.0298	0.0209 - 0.0387	Pass
MAAP-4519	8/1/2017	Pu-239/240	0.0400 ± 0.0200	0.0468	0.0328 - 0.0608	Pass
MAAP-4519	8/1/2017	Sr-90	0.800 ± 0.100	0.801	0.561 - 1.041	Pass
MAAP-4519	8/1/2017	U-234/233	0.070 ± 0.010	0.084	0.059 - 0.109	Pass
MAAP-4519	8/1/2017	U-238	0.090 ± 0.010	0.087	0.061 - 0.113	Pass

[a] Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

[b] Laboratory codes as follows: MAW (water), MAAP (air filter), MASO (soil), MAVE (vegetation).

[c] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide control limits.

[d] Decimal point was misplaced while performing a unit conversion. The result is within control limits when the proper unit conversion is performed.

[e] Provided in the series for "sensitivity evaluation". MAPEP does not provide control limits.

[f] Sample was reanalyzed in duplicate with acceptable results. Original plating was inferior to platings obtained during reanalysis. It is believed that isotopic tracer was not accurately quantified due to poor resolution of its peak.

[g] Data were erroneously submitted in units of Bq/g. All results pass MAPEP criteria when evaluated in units of Bq/Kg.

[h] Laboratory is not currently offering analysis for Am-241 in Air Particulate samples.

TABLE A-7. Interlaboratory Comparison Crosscheck Program, Environmental Resource Associates (ERA)[a].

MRAD Study

Lab Code [b]	Date	Analysis	Concentration [a] Laboratory Result	ERA Result	Control Limits [c]	Acceptance
ERAP-1112	3/20/2017	Am-241	55.3 ± 2.8	76.4	47.1 - 103.0	Pass
ERAP-1112	3/20/2017	Co-60	1,230 ± 8	1030	797 - 1290	Pass
ERAP-1112	3/20/2017	Cs-134	1,110 ± 9	1100	700 - 1360	Pass
ERAP-1112	3/20/2017	Cs-137	1,810 ± 12	1,390	1,040 - 1,830	Pass
ERAP-1112 [d]	3/20/2017	Fe-55	590 ± 385	256	79.4 - 500	Fail
ERAP-1112	3/20/2017	Mn-54	< 5.14	< 50.0	0.00 - 50.0	Pass
ERAP-1112	3/20/2017	Pu-238	54.6 ± 2.8	54.3	37.2 - 71.4	Pass
ERAP-1112	3/20/2017	Pu-239/240	63.6 ± 3.0	62.0	44.9 - 81.0	Pass
ERAP-1112	3/20/2017	Sr-90	55.3 ± 8.3	52.4	25.6 - 78.5	Pass
ERAP-1112	3/20/2017	U-233/234	65.7 ± 3.0	73.1	45.3 - 110	Pass
ERAP-1112	3/20/2017	U-238	67.3 ± 3.0	72.4	46.8 - 100	Pass
ERAP-1112	3/20/2017	Zn-65	1,355 ± 16	984	705 - 1,360	Pass
ERAP-1114	3/20/2017	Gr. Alpha	106 ± 5	85.5	28.6 - 133	Pass
ERAP-1114 [e]	3/20/2017	Gr. Beta	67.6 ± 3.0	45.2	28.6 - 65.9	Fail
ERSO-1116	3/20/2017	Am-241	418 ± 98	448	262 - 582	Pass
ERSO-1116	3/20/2017	Ac-228	1,540 ± 260	1,240	795 - 1,720	Pass
ERSO-1116	3/20/2017	Bi-212	1,550 ± 90	1,240	330 - 1,820	Pass
ERSO-1116	3/20/2017	Bi-214	2,560 ± 20	2,750	1,660 - 3,960	Pass
ERSO-1116	3/20/2017	Co-60	4,620 ± 100	4,430	3,000 - 6,100	Pass
ERSO-1116	3/20/2017	Cs-134	8,340 ± 100	8,860	5,790 - 10,600	Pass
ERSO-1116	3/20/2017	Cs-137	8,420 ± 100	7,500	5,750 - 9,650	Pass
ERSO-1116	3/20/2017	K-40	13,600 ± 900	10,600	7,740 - 14,200	Pass
ERSO-1116	3/20/2017	Mn-54	< 68.1	< 1000	0.00 - 1,000	Pass
ERSO-1116	3/20/2017	Pb-212	1,060 ± 70	1,240	812 - 1,730	Pass
ERSO-1116	3/20/2017	Pb-214	2,620 ± 160	2,890	1,690 - 4,310	Pass
ERSO-1116	3/20/2017	Pu-238	424 ± 154	648	390 - 894	Pass
ERSO-1116 [f]	3/20/2017	Pu-239/240	252 ± 112	484	316 - 669	Fail
ERSO-1116 [g]	3/20/2017	Pu-239/240	436 ± 106	484	316 - 669	Pass
ERSO-1116	3/20/2017	Sr-90	7,930 ± 250	9,150	3,490 - 14,500	Pass
ERSO-1116	3/20/2017	Th-234	1,820 ± 200	1,940	614 - 3,650	Pass
ERSO-1116 [h]	3/20/2017	U-233/234	1,030 ± 130	1,950	1,190 - 2,500	Fail
ERSO-1116 [i]	3/20/2017	U-233/234	1,820 ± 200	1,950	1,190 - 2,500	Pass
ERSO-1116	3/20/2017	U-238	1,240 ± 140	1,940	1,200 - 2,460	Pass
ERSO-1116 [i]	3/20/2017	U-238	1,930 ± 200	1,940	1,200 - 2,460	Pass
ERSO-1116	3/20/2017	Zn-65	7,190 ± 240	6,090	4,850 - 8,090	Pass
ERW-1122	3/20/2017	Gr. Alpha	65.3 ± 2.4	89.5	31.8 - 139	Pass
ERW-1122	3/20/2017	Gr. Beta	54.8 ± 1.5	61.0	34.9 - 90.4	Pass
ERW-1124	3/20/2017	H-3	19,000 ± 410	19,400	13,000 - 27,700	Pass

TABLE A-7. Interlaboratory Comparison Crosscheck Program, Environmental Resource Associates (ERA)[a].

MRAD Study

Lab Code [b]	Date	Analysis	Concentration [a] Laboratory Result	ERA Result	Control Limits [c]	Acceptance
ERVE-1118	3/20/2017	Am-241	1,560 ± 140	1,860	1,140 - 2,470	Pass
ERVE-1118	3/20/2017	Cm-244	530 ± 80	734	360 - 1,140	Pass
ERVE-1118	3/20/2017	Co-60	1,400 ± 350	1,390	959 - 1,940	Pass
ERVE-1118	3/20/2017	Cs-134	1,650 ± 460	1,830	1,180 - 2,380	Pass
ERVE-1118	3/20/2017	Cs-137	2,580 ± 540	2,500	1,810 - 3,480	Pass
ERVE-1118	3/20/2017	K-40	32,100 ± 700	30,900	22,300 - 43,400	Pass
ERVE-1118	3/20/2017	Mn-54	< 27.3	< 300	0.00 - 300	Pass
ERVE-1118	3/20/2017	Zn-65	889 ± 64	853	615 - 1,200	Pass
ERVE-1118	3/20/2017	Pu-238	3,250 ± 210	3,250	1,940 - 4,450	Pass
ERVE-1118	3/20/2017	Pu-239/240	2,180 ± 170	2,150	1,320 - 2,960	Pass
ERVE-1118	3/20/2017	Sr-90	665 ± 135	726	414 - 963	Pass
ERVE-1118	3/20/2017	U-233/234	2,840 ± 200	3,090	2,030 - 3,970	Pass
ERVE-1118	3/20/2017	U-238	2,990 ± 200	3,060	2,040 - 3,890	Pass
ERW-1120	3/20/2017	Am-241	108 ± 7	140	94.3 - 188	Pass
ERW-1120	3/20/2017	Co-60	2,600 ± 198	2,540	2,210 - 2,970	Pass
ERW-1120	3/20/2017	Cs-134	2,380 ± 250	2,510	1,840 - 2880	Pass
ERW-1120	3/20/2017	Cs-137	1,470 ± 243	1,400	1,190 - 1,680	Pass
ERW-1120	3/20/2017	Mn-54	< 12.3	< 100	0.00 - 100	Pass
ERW-1120	3/20/2017	Pu-238	117 ± 4	128	94.7 - 159	Pass
ERW-1120	3/20/2017	Pu-239/240	74.8 ± 3.3	85.8	66.6 - 108	Pass
ERW-1120	3/20/2017	U-233/234	75.3 ± 3.2	90.3	67.8 - 116	Pass
ERW-1120	3/20/2017	U-238	76.4 ± 3.2	89.5	68.2 - 110	Pass
ERW-1120	3/20/2017	Zn-65	2,130 ± 378	1,960	1630 - 2,470	Pass
ERW-1120 [j]	3/20/2017	Fe-55	1,400 ± 403	984	587 - 1,340	Fail
ERW-1120 [k]	3/20/2017	Fe-55	1,081 ± 383	984	587 - 1,340	Pass
ERW-1120	3/20/2017	Sr-90	652 ± 12	714	465 - 944	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurements Laboratory Quality Assessment Program (EML).

[b] Laboratory codes as follows: ERW (water), ERAP (air filter), ERSO (soil), ERVE (vegetation). Results are reported in units of pCi/L, except for air filters (pCi/Filter), vegetation and soil (pCi/kg).

[c] Results are presented as the known values, expected laboratory precision (2 sigma, 1 determination) and control limits as provided by ERA.

[d] Fe-55 analysis result was outside the acceptable range. Recounting the sample disk for 1000 minutes resulted in 254 ± 364 with an LLD calculation of < 342. Insufficient sample was available after performing other required analyses on the sample to quantify the activity with an uncertainty less than the activity.

[e] ERA appears to have applied the standard material to the filter in a pattern closer to the center of the filter compared to previous studies and different from the filter efficiency utilized by the laboratory. This likely caused the efficency used the calculation to be understated and the result obtained by the laboratory to be overstated. For comparison the in-house spike for gross beta in AP (table A-3 SPAP-740 2/28/17) was acceptable with a ratio of 0.94 of lab result to known.

[f] Analysis result for Plutonium-239/240 was below the lower limit of acceptance.

[g] Samples were reanalyzed in duplicate with acceptable results for each. Original analysis had poor resolution possibly due to a poor elctroplating and is suspected in contributing to poor results.

[h] Analysis result for U-233/234 was below the lower limit of acceptance.

[i] The reanalysis result for U-233/234 was within the acceptance limits and U-238 reanalysis result was closer to the known value. Original analysis had poor resolution possibly due to a poor electroplating and is suspected in contributing to poor results.

[j] Fe-55 analysis result was outside acceptable range.

[k] Result of recounting was acceptable. Using available aliquot after dividing sample for other analyses leaves insufficient sample to reliably determine the activity present in sample.

Appendix B

Summary Tables in the format of NRC Radiological Assessment Branch Technical Position
Revision 1, November 1979

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: Wolf Creek Generating Station Docket No.: 50-482

Location of Facility: Coffey County, Kansas Reporting Period: Annual 2017

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Air Particulate (pCi/m^3)	Gross Beta (313)	0.01	0.026 (261/261) (0.006 - 0.053)	37 2.0 miles NNW	0.026 (53/53) (0.010 - 0.053)	Station 53 0.026 (52/52) (0.012 - 0.046)	0
	Gamma (24) Be-7	-	0.087 (20/20) (0.061 - 0.122)	18 3.0 miles SSE	0.089 (4/4) (0.061 - 0.122)	0.086 (4/4) (0.057 - 0.107)	0
Air Radioiodine (pCi/m^3)	I-131 (313)	0.07	- (0/261)	N/A	N/A	Station 53 - (0/52)	0
Direct Radiation Dosimeters (mR per std. 90-day Qtr.)	Gamma Dose (168)	-	18.5 (160/160) (10.7 – 23.3)	52 3.6 miles SW	20.5 (4/4) (18.0 – 22.6)	Stations 39 & 53 18.7 (8/8) (15.7 – 20.3)	0
Surface Water (pCi/l)	Gamma (24)		- (0/12)	N/A	N/A	JRR - (0/12)	0
	Tritium (24)	3,000	9,342 (12/12) (7,382–11,221)	SP 3.2 miles SSE	9,342 (12/12) (7,382–11,221)	- (0/12)	0
	Fe-55 (8)	-	- (0/4)	N/A	N/A	- (0/4)	0
Ground Water (pCi/l)	I-131 (32)	1	- (0/28)	N/A	N/A	B-12 - (0/4)	0
	Gamma (32)		- (0/28)	N/A	N/A	- (0/4)	0
	Tritium (32)	2,000	- (0/28)	N/A	N/A	- (0/4)	0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

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Location of Facility: Coffey County, Kansas Reporting Period: Annual 2017

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Drinking Water (pCi/l)	I-131 (25)	1	- (0/12)	N/A	N/A	BW-15 - (0/13)	0
	Gross Beta (25)	4	2.8 (12/12) (1.9 – 3.9)	IO-DW 26.1 miles SSE	2.8 (12/12) (1.9 – 3.9)	2.4 (13/13) (1.9 – 3.3)	0
	Gamma (25)		- (0/12)	N/A	N/A	- (0/13)	0
	Tritium (9)	2,000	- (0/4)	N/A	- (0/4)	- (0/5)	0
Shoreline Sediment (pCi/kg dry)	Gamma (6)					JRR	
	K-40	-	8,729 (4/4) (5,911–11,355)	EEA 3.0 miles NNW	11,355 (1/1)	9,510 (2/2) (8,268–10,753)	0
	Cs-137	-	218 (1/4)	EEA 3.0 miles NNW	218 (1/1)	138 (1/2)	0
Fish – Flesh (pCi/kg wet)	Gamma (28)					JRR	
	K-40	-	3,437 (12/12) (2,461 – 4,567)	CCL 0.6 miles E to NNW	3,437 (12/12) (2,461 – 4,567)	3,277 (16/16) (2,833 – 3,692)	0
	Tritium (28)	-	6,090 (12/12) (4,067 – 7,724)	CCL 0.6 miles E to NNW	6,090 (12/12) (4,067 – 7,724)	- (0/16)	0
Fish – Bones (pCi/kg wet)	HTD (2)					JRR	
	Sr-90	-	194.6 (1/1)	CCL 0.6 miles E to NNW	194.6 (1/1)	- (0/1)	0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: Wolf Creek Generating Station Docket No.: 50-482

Location of Facility: Coffey County, Kansas Reporting Period: Annual 2017

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	 ** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Food and Garden (pCi/kg wet)	Gamma (28)					D-2	
	Be-7	-	890 (20/21) (284 – 1,973)	A-3 2.6 miles N	1,061 (3/3) (793 – 1,376)	952 (6/7) (649 – 1,236)	0
	K-40	-	5,871 (21/21) (4,271 – 8,366)	H-2 3.0 miles SSE	6,018 (7/7) (4,271 – 6,996)	6,271 (7/7) (4,954 – 7,243)	0
Crops (pCi/kg wet)	Gamma (4)					NR-U1	
	K-40	-	9,032 (2/2) (2,616 - 15,448)	NR-D2 11.5 miles S	15,448 (1/1)	7,451 (2/2) (2,485 – 12,416)	0
Bottom Sediment (pCi/kg dry)	Gamma (18)					JRR	
	K-40	-	10,665 (16/16) (5,805 – 14,433)	EEA 3.0 miles NNW	12,066 (1/1)	17,000 (2/2) (15,862 – 18,138)	0
	Cs-137	-	88 (3/16) (60 – 105)	UHS 0.6 miles E	105 (1/10)	- (0/2)	0
	Fe-55 (14)	-	- (0/14)	N/A	N/A	N/A	0
	HTD (2)		- (0/2)	N/A	N/A	N/A	0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: Wolf Creek Generating Station Docket No.: 50-482

Location of Facility: Coffey County, Kansas Reporting Period: Annual 2017

Medium of Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analysis Performed	ODCM Lower Limit of Detection (LLD)	All Indicator Locations ** Mean (f) ** Range	Indicator Location with Highest Annual Mean Name Distance and Direction	** Mean (f) ** Range	Control Locations ** Mean (f) ** Range	Number of Nonroutine Reported Measurements **
Aquatic Vegetation (pCi/kg wet)	Gamma (4)					No Control	
	Be-7	-	441 (4/4) (190 – 728)	SC 0.8 miles NNW	728 (1/1)		0
	K-40	-	2,135 (4/4) (1,665 – 2,589)	SC 0.8 miles NNW	2,589 (1/1)		0
	Cs-137	-	18 (1/4)	EEA 3.0 miles NNW	18 (1/1)		0
Terrestrial Vegetation (pCi/kg wet)	Gamma (2)					No Control	
	Be-7	-	1,406 (2/2) (493 – 2,319)	MUDS 1.5 miles WNW	2,319 (1/1)		0
	K-40	-	5,616 (2/2) (4,695 – 6,536)	EEA 3.0 miles NNW	6,536 (1/1)		0
Soil (pCi/kg dry)	Gamma (3)					No Control	
	K-40	-	10,745 (3/3) (9,730-12,020)	EEA 3.0 miles NNW	12,020 (1/1)		0
	Cs-137	-	127 (3/3) (75 – 162)	EEA 3.0 miles NNW	162 (1/1)		0
Deer (pCi/kg wet)	Gamma (1)					No Control	
	K-40	-	2,424 (1/1)	P2.0 2.0 miles WNW	2,424 (1/1)		0
	Tritium (1)	-	3,140 (1/1)	P2.0 2.0 miles WNW	3,140 (1/1)		0

** Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f)

APPENDIX C

INDIVIDUAL SAMPLE RESULTS

Air Particulate Filters and Radioiodine Canisters

Location: 002

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	339	0.028 +/- 0.004	< 0.019	
27-Dec-16	04-Jan-17	339	0.028 +/- 0.004		Duplicate
04-Jan-17	09-Jan-17	214	0.032 +/- 0.006	< 0.013	
09-Jan-17	16-Jan-17	303	0.034 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	297	0.033 +/- 0.005	< 0.006	
23-Jan-17	30-Jan-17	297	0.027 +/- 0.005	< 0.009	
30-Jan-17	06-Feb-17	306	0.025 +/- 0.004	< 0.015	
06-Feb-17	14-Feb-17	349	0.028 +/- 0.004	< 0.010	
14-Feb-17	20-Feb-17	251	0.018 +/- 0.005	< 0.014	
14-Feb-17	20-Feb-17	251	0.021 +/- 0.005		Duplicate
20-Feb-17	27-Feb-17	300	0.021 +/- 0.004	< 0.013	
27-Feb-17	06-Mar-17	296	0.022 +/- 0.004	< 0.009	
27-Feb-17	06-Mar-17	296	0.019 +/- 0.004		Duplicate
06-Mar-17	15-Mar-17	402	0.017 +/- 0.003	< 0.013	
15-Mar-17	20-Mar-17	199	0.021 +/- 0.006	< 0.017	
15-Mar-17	20-Mar-17	199	0.021 +/- 0.006		Duplicate
20-Mar-17	27-Mar-17	307	0.018 +/- 0.004	< 0.016	
27-Mar-17	03-Apr-17	270	0.009 +/- 0.004	< 0.016	
03-Apr-17	10-Apr-17	304	0.018 +/- 0.004	< 0.012	
10-Apr-17	17-Apr-17	297	0.022 +/- 0.005	< 0.007	
17-Apr-17	24-Apr-17	296	0.012 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	304	0.011 +/- 0.004	< 0.010	
01-May-17	09-May-17	333	0.021 +/- 0.004	< 0.010	
09-May-17	16-May-17	301	0.021 +/- 0.004	< 0.023	
16-May-17	22-May-17	258	0.013 +/- 0.004	< 0.011	
16-May-17	22-May-17	258	0.014 +/- 0.004		Duplicate
22-May-17	30-May-17	336	0.016 +/- 0.004	< 0.016	
30-May-17	06-Jun-17	292	0.025 +/- 0.005	< 0.016	
06-Jun-17	12-Jun-17	255	0.024 +/- 0.005	< 0.009	
12-Jun-17	19-Jun-17	298	0.017 +/- 0.004	< 0.018	
12-Jun-17	19-Jun-17	298	0.019 +/- 0.004		Duplicate
19-Jun-17	26-Jun-17	298	0.019 +/- 0.004	< 0.015	
26-Jun-17	05-Jul-17	377	0.020 +/- 0.003	< 0.012	
05-Jul-17	10-Jul-17	208	0.031 +/- 0.006	< 0.022	
05-Jul-17	10-Jul-17	208	0.027 +/- 0.005		Duplicate
10-Jul-17	17-Jul-17	295	0.019 +/- 0.004	< 0.019	
10-Jul-17	17-Jul-17	295	0.022 +/- 0.004		Duplicate
17-Jul-17	25-Jul-17	341	0.027 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	259	0.025 +/- 0.005	< 0.013	
25-Jul-17	31-Jul-17	259	0.027 +/- 0.005		Duplicate
31-Jul-17	07-Aug-17	298	0.023 +/- 0.004	< 0.011	

Air Particulate Filters and Radioiodine Canisters

Location: 002

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
07-Aug-17	14-Aug-17	291	0.032 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	304	0.020 +/- 0.004	< 0.008	
21-Aug-17	28-Aug-17	291	0.021 +/- 0.005	< 0.022	
21-Aug-17	28-Aug-17	291	0.024 +/- 0.005		Duplicate
28-Aug-17	05-Sep-17	338	0.040 +/- 0.005	< 0.016	
05-Sep-17	12-Sep-17	298	0.037 +/- 0.005	< 0.013	
12-Sep-17	18-Sep-17	246	0.047 +/- 0.006	< 0.013	
18-Sep-17	25-Sep-17	302	0.034 +/- 0.005	< 0.009	
25-Sep-17	02-Oct-17	297	0.028 +/- 0.005	< 0.011	
02-Oct-17	09-Oct-17	302	0.022 +/- 0.004	< 0.010	
09-Oct-17	16-Oct-17	303	0.025 +/- 0.005	< 0.010	
09-Oct-17	16-Oct-17	303	0.022 +/- 0.004		Duplicate
16-Oct-17	24-Oct-17	335	0.021 +/- 0.004	< 0.015	
24-Oct-17	31-Oct-17	299	0.015 +/- 0.004	< 0.009	
24-Oct-17	31-Oct-17	299	0.014 +/- 0.004		Duplicate
31-Oct-17	07-Nov-17	297	0.038 +/- 0.005	< 0.017	
07-Nov-17	13-Nov-17	253	0.034 +/- 0.006	< 0.019	
13-Nov-17	20-Nov-17	296	0.035 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	340	0.027 +/- 0.004	< 0.010	
28-Nov-17	04-Dec-17	261	0.035 +/- 0.005	< 0.013	
04-Dec-17	11-Dec-17	310	0.015 +/- 0.004	< 0.011	
11-Dec-17	18-Dec-17	294	0.022 +/- 0.005	< 0.018	
18-Dec-17	27-Dec-17	407	0.037 +/- 0.004	< 0.011	
27-Dec-17	03-Jan-18	291	0.035 +/- 0.005	< 0.012	

Air Particulate Filters and Radioiodine Canisters

Location: 018

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	341	0.029 +/- 0.004	< 0.019	
04-Jan-17	09-Jan-17	219	0.033 +/- 0.006	< 0.013	
09-Jan-17	16-Jan-17	299	0.035 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	302	0.031 +/- 0.005	< 0.006	
23-Jan-17	30-Jan-17	299	0.025 +/- 0.004	< 0.009	
30-Jan-17	06-Feb-17	305	0.028 +/- 0.005	< 0.015	
06-Feb-17	14-Feb-17	348	0.032 +/- 0.004	< 0.010	
14-Feb-17	20-Feb-17	257	0.020 +/- 0.005	< 0.014	
20-Feb-17	27-Feb-17	298	0.021 +/- 0.004	< 0.013	
20-Feb-17	27-Feb-17	298	0.019 +/- 0.004		Duplicate
27-Feb-17	06-Mar-17	307	0.020 +/- 0.004	< 0.008	
06-Mar-17	15-Mar-17	400	0.020 +/- 0.003	< 0.013	
15-Mar-17	20-Mar-17	206	0.018 +/- 0.006	< 0.016	
20-Mar-17	27-Mar-17	302	0.026 +/- 0.005	< 0.016	
27-Mar-17	03-Apr-17	302	0.006 +/- 0.004	< 0.015	
03-Apr-17	10-Apr-17	302	0.018 +/- 0.004	< 0.013	
10-Apr-17	17-Apr-17	303	0.015 +/- 0.004	< 0.007	
17-Apr-17	24-Apr-17	297	0.013 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	303	0.010 +/- 0.004	< 0.010	
01-May-17	09-May-17	340	0.021 +/- 0.004	< 0.010	
09-May-17	16-May-17	303	0.021 +/- 0.004	< 0.023	
16-May-17	22-May-17	256	0.012 +/- 0.004	< 0.011	
22-May-17	30-May-17	343	0.019 +/- 0.004	< 0.016	
30-May-17	06-Jun-17	298	0.025 +/- 0.004	< 0.016	
06-Jun-17	12-Jun-17	260	0.026 +/- 0.005	< 0.009	
12-Jun-17	19-Jun-17	303	0.015 +/- 0.004	< 0.017	
19-Jun-17	26-Jun-17	296	0.021 +/- 0.004	< 0.015	
19-Jun-17	26-Jun-17	296	0.021 +/- 0.004		Duplicate
26-Jun-17	05-Jul-17	383	0.022 +/- 0.003	< 0.012	
05-Jul-17	10-Jul-17	215	0.033 +/- 0.006	< 0.022	
10-Jul-17	17-Jul-17	287	0.023 +/- 0.005	< 0.020	
17-Jul-17	25-Jul-17	341	0.024 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	261	0.029 +/- 0.005	< 0.013	
31-Jul-17	07-Aug-17	305	0.027 +/- 0.004	< 0.011	
07-Aug-17	14-Aug-17	301	0.032 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	301	0.023 +/- 0.004	< 0.008	
21-Aug-17	28-Aug-17	292	0.022 +/- 0.005	< 0.022	
28-Aug-17	05-Sep-17	344	0.036 +/- 0.004	< 0.016	
05-Sep-17	12-Sep-17	302	0.043 +/- 0.005	< 0.013	
12-Sep-17	18-Sep-17	250	0.049 +/- 0.006	< 0.013	
18-Sep-17	25-Sep-17	306	0.028 +/- 0.004	< 0.009	

Air Particulate Filters and Radioiodine Canisters

Location: 018

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
25-Sep-17	02-Oct-17	300	0.028 +/- 0.005	< 0.011	
02-Oct-17	09-Oct-17	299	0.024 +/- 0.004	< 0.011	
09-Oct-17	16-Oct-17	305	0.022 +/- 0.004	< 0.010	
16-Oct-17	24-Oct-17	339	0.020 +/- 0.004	< 0.015	
24-Oct-17	31-Oct-17	301	0.015 +/- 0.004	< 0.009	
31-Oct-17	07-Nov-17	297	0.047 +/- 0.005	< 0.017	
07-Nov-17	13-Nov-17	254	0.036 +/- 0.006	< 0.019	
13-Nov-17	20-Nov-17	298	0.036 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	345	0.026 +/- 0.004	< 0.010	
28-Nov-17	04-Dec-17	260	0.033 +/- 0.005	< 0.013	
04-Dec-17	11-Dec-17	316	0.017 +/- 0.004	< 0.011	
18-Dec-17	27-Dec-17	393	0.040 +/- 0.004	< 0.012	
27-Dec-17	03-Jan-18	300	0.041 +/- 0.005	< 0.012	

Air Particulate Filters and Radioiodine Canisters

Location: 032

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	338	0.027 +/- 0.004	< 0.019	
04-Jan-17	09-Jan-17	221	0.041 +/- 0.006	< 0.013	
09-Jan-17	16-Jan-17	297	0.037 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	301	0.034 +/- 0.005	< 0.006	
16-Jan-17	23-Jan-17	301	0.038 +/- 0.005		Duplicate
23-Jan-17	30-Jan-17	330	0.027 +/- 0.004	< 0.008	
30-Jan-17	06-Feb-17	313	0.023 +/- 0.004	< 0.015	
30-Jan-17	06-Feb-17	313	0.023 +/- 0.004		Duplicate
06-Feb-17	14-Feb-17	365	0.025 +/- 0.004	< 0.010	
14-Feb-17	20-Feb-17	253	0.022 +/- 0.005	< 0.014	
20-Feb-17	27-Feb-17	307	0.018 +/- 0.004	< 0.012	
27-Feb-17	06-Mar-17	300	0.019 +/- 0.004	< 0.009	
06-Mar-17	15-Mar-17	408	0.021 +/- 0.003	< 0.013	
15-Mar-17	20-Mar-17	207	0.028 +/- 0.006	< 0.016	
20-Mar-17	27-Mar-17	299	0.020 +/- 0.005	< 0.016	
27-Mar-17	03-Apr-17	296	0.008 +/- 0.004	< 0.015	
03-Apr-17	10-Apr-17	269	0.014 +/- 0.004	< 0.014	
10-Apr-17	17-Apr-17	296	0.017 +/- 0.004	< 0.008	
17-Apr-17	24-Apr-17	296	0.013 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	306	0.008 +/- 0.004	< 0.010	
01-May-17	09-May-17	335	0.021 +/- 0.004	< 0.010	
09-May-17	16-May-17	300	0.022 +/- 0.004	< 0.023	
16-May-17	22-May-17	259	0.014 +/- 0.004	< 0.011	
22-May-17	30-May-17	337	0.019 +/- 0.004	< 0.016	
22-May-17	30-May-17	337	0.015 +/- 0.004		Duplicate
30-May-17	06-Jun-17	293	0.027 +/- 0.005	< 0.016	
06-Jun-17	12-Jun-17	254	0.027 +/- 0.005	< 0.009	
12-Jun-17	19-Jun-17	302	0.019 +/- 0.004	< 0.017	
19-Jun-17	26-Jun-17	295	0.022 +/- 0.004	< 0.015	
26-Jun-17	05-Jul-17	383	0.022 +/- 0.003	< 0.012	
05-Jul-17	10-Jul-17	213	0.031 +/- 0.006	< 0.022	
10-Jul-17	17-Jul-17	296	0.023 +/- 0.004	< 0.019	
17-Jul-17	25-Jul-17	347	0.027 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	258	0.025 +/- 0.005	< 0.014	
31-Jul-17	07-Aug-17	309	0.028 +/- 0.004	< 0.010	
07-Aug-17	14-Aug-17	291	0.033 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	310	0.022 +/- 0.004	< 0.008	
14-Aug-17	21-Aug-17	310	0.021 +/- 0.004		Duplicate
21-Aug-17	28-Aug-17	295	0.025 +/- 0.005	< 0.022	
28-Aug-17	05-Sep-17	347	0.036 +/- 0.004	< 0.015	
05-Sep-17	12-Sep-17	301	0.037 +/- 0.005	< 0.013	

Air Particulate Filters and Radioiodine Canisters

Location: 032

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
12-Sep-17	18-Sep-17	257	0.046 +/- 0.006	< 0.012	
18-Sep-17	25-Sep-17	302	0.030 +/- 0.005	< 0.009	
25-Sep-17	02-Oct-17	300	0.026 +/- 0.005	< 0.011	
02-Oct-17	09-Oct-17	301	0.023 +/- 0.004	< 0.010	
09-Oct-17	16-Oct-17	303	0.023 +/- 0.004	< 0.010	
16-Oct-17	24-Oct-17	340	0.020 +/- 0.004	< 0.014	
24-Oct-17	31-Oct-17	300	0.017 +/- 0.004	< 0.009	
31-Oct-17	07-Nov-17	297	0.044 +/- 0.005	< 0.017	
07-Nov-17	13-Nov-17	257	0.035 +/- 0.006	< 0.019	
13-Nov-17	20-Nov-17	294	0.036 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	344	0.032 +/- 0.004	< 0.010	
28-Nov-17	04-Dec-17	260	0.039 +/- 0.006	< 0.013	
04-Dec-17	11-Dec-17	316	0.020 +/- 0.005	< 0.011	
18-Dec-17	27-Dec-17	410	0.047 +/- 0.004	< 0.011	
18-Dec-17	27-Dec-17	410	0.043 +/- 0.004		Duplicate
27-Dec-17	03-Jan-18	292	0.043 +/- 0.005	< 0.012	

Air Particulate Filters and Radioiodine Canisters

Location: 037

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	340	0.026 +/- 0.004	< 0.019	
04-Jan-17	09-Jan-17	221	0.027 +/- 0.006	< 0.013	
09-Jan-17	16-Jan-17	302	0.036 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	299	0.034 +/- 0.005	< 0.006	
23-Jan-17	30-Jan-17	305	0.030 +/- 0.005	< 0.009	
30-Jan-17	06-Feb-17	304	0.024 +/- 0.004	< 0.015	
06-Feb-17	14-Feb-17	345	0.031 +/- 0.004	< 0.010	
06-Feb-17	14-Feb-17	345	0.030 +/- 0.004		Duplicate
14-Feb-17	20-Feb-17	257	0.020 +/- 0.005	< 0.014	
20-Feb-17	27-Feb-17	303	0.021 +/- 0.004	< 0.012	
27-Feb-17	06-Mar-17	300	0.024 +/- 0.005	< 0.009	
06-Mar-17	15-Mar-17	405	0.020 +/- 0.003	< 0.013	
06-Mar-17	15-Mar-17	405	0.020 +/- 0.003		Duplicate
15-Mar-17	20-Mar-17	210	0.025 +/- 0.006	< 0.016	
20-Mar-17	27-Mar-17	301	0.021 +/- 0.005	< 0.016	
27-Mar-17	03-Apr-17	298	0.010 +/- 0.004	< 0.015	
03-Apr-17	10-Apr-17	305	0.014 +/- 0.004	< 0.012	
10-Apr-17	17-Apr-17	299	0.020 +/- 0.004	< 0.007	
17-Apr-17	24-Apr-17	300	0.018 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	306	0.011 +/- 0.004	< 0.010	
24-Apr-17	01-May-17	306	0.013 +/- 0.004		Duplicate
01-May-17	09-May-17	336	0.023 +/- 0.004	< 0.010	
09-May-17	16-May-17	299	0.023 +/- 0.004	< 0.023	
09-May-17	16-May-17	299	0.023 +/- 0.004		Duplicate
16-May-17	22-May-17	259	0.016 +/- 0.004	< 0.011	
22-May-17	30-May-17	340	0.016 +/- 0.004	< 0.016	
30-May-17	06-Jun-17	294	0.027 +/- 0.005	< 0.016	
30-May-17	06-Jun-17	294	0.027 +/- 0.005		Duplicate
06-Jun-17	12-Jun-17	256	0.023 +/- 0.005	< 0.009	
06-Jun-17	12-Jun-17	256	0.027 +/- 0.005		Duplicate
12-Jun-17	19-Jun-17	301	0.017 +/- 0.004	< 0.018	
19-Jun-17	26-Jun-17	301	0.019 +/- 0.004	< 0.015	
26-Jun-17	05-Jul-17	380	0.022 +/- 0.003	< 0.012	
05-Jul-17	10-Jul-17	215	0.035 +/- 0.006	< 0.022	
10-Jul-17	17-Jul-17	298	0.023 +/- 0.004	< 0.019	
17-Jul-17	25-Jul-17	339	0.027 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	261	0.030 +/- 0.005	< 0.013	
31-Jul-17	07-Aug-17	304	0.027 +/- 0.004	< 0.011	
07-Aug-17	14-Aug-17	297	0.032 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	309	0.022 +/- 0.004	< 0.008	
21-Aug-17	28-Aug-17	297	0.024 +/- 0.005	< 0.022	

Air Particulate Filters and Radioiodine Canisters

Location: 037

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
28-Aug-17	05-Sep-17	341	0.038 +/- 0.005	< 0.016	
05-Sep-17	12-Sep-17	302	0.040 +/- 0.005	< 0.013	
05-Sep-17	12-Sep-17	302	0.038 +/- 0.005		Duplicate
12-Sep-17	18-Sep-17	254	0.053 +/- 0.006	< 0.013	
18-Sep-17	25-Sep-17	302	0.031 +/- 0.005	< 0.009	
25-Sep-17	02-Oct-17	301	0.030 +/- 0.005	< 0.011	
02-Oct-17	09-Oct-17	301	0.022 +/- 0.004	< 0.010	
09-Oct-17	16-Oct-17	306	0.020 +/- 0.004	< 0.010	
16-Oct-17	24-Oct-17	335	0.020 +/- 0.004	< 0.015	
24-Oct-17	31-Oct-17	301	0.015 +/- 0.004	< 0.009	
31-Oct-17	07-Nov-17	297	0.037 +/- 0.005	< 0.017	
31-Oct-17	07-Nov-17	297	0.044 +/- 0.005		Duplicate
07-Nov-17	13-Nov-17	259	0.035 +/- 0.006	< 0.019	
13-Nov-17	20-Nov-17	297	0.036 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	344	0.026 +/- 0.004	< 0.010	
20-Nov-17	28-Nov-17	344	0.030 +/- 0.004		Duplicate
28-Nov-17	04-Dec-17	266	0.043 +/- 0.006	< 0.012	
04-Dec-17	11-Dec-17	319	0.023 +/- 0.005	< 0.011	
18-Dec-17	27-Dec-17	408	0.045 +/- 0.004	< 0.011	
27-Dec-17	03-Jan-18	296	0.039 +/- 0.005	< 0.012	
27-Dec-17	03-Jan-18	296	0.034 +/- 0.005		Duplicate

Air Particulate Filters and Radioiodine Canisters

Location: 049

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	344	0.027 +/- 0.004	< 0.019	
04-Jan-17	09-Jan-17	217	0.030 +/- 0.006	< 0.013	
09-Jan-17	16-Jan-17	301	0.033 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	305	0.038 +/- 0.005	< 0.006	
23-Jan-17	30-Jan-17	313	0.027 +/- 0.004	< 0.009	
23-Jan-17	30-Jan-17	313	0.028 +/- 0.004		Duplicate
30-Jan-17	06-Feb-17	306	0.027 +/- 0.004	< 0.015	
06-Feb-17	14-Feb-17	355	0.027 +/- 0.004	< 0.010	
14-Feb-17	20-Feb-17	256	0.021 +/- 0.005	< 0.014	
20-Feb-17	27-Feb-17	307	0.019 +/- 0.004	< 0.012	
27-Feb-17	06-Mar-17	300	0.023 +/- 0.004	< 0.009	
06-Mar-17	15-Mar-17	407	0.023 +/- 0.003	< 0.013	
15-Mar-17	20-Mar-17	208	0.022 +/- 0.006	< 0.016	
20-Mar-17	27-Mar-17	305	0.025 +/- 0.005	< 0.016	
27-Mar-17	03-Apr-17	305	0.010 +/- 0.004	< 0.014	
03-Apr-17	10-Apr-17	303	0.021 +/- 0.004	< 0.012	
10-Apr-17	17-Apr-17	298	0.018 +/- 0.004	< 0.007	
17-Apr-17	24-Apr-17	299	0.014 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	305	0.010 +/- 0.004	< 0.010	
01-May-17	09-May-17	343	0.022 +/- 0.004	< 0.010	
09-May-17	16-May-17	299	0.025 +/- 0.004	< 0.023	
16-May-17	22-May-17	260	0.014 +/- 0.004	< 0.011	
22-May-17	30-May-17	340	0.019 +/- 0.004	< 0.016	
30-May-17	06-Jun-17	292	0.025 +/- 0.005	< 0.016	
06-Jun-17	12-Jun-17	255	0.023 +/- 0.005	< 0.009	
12-Jun-17	19-Jun-17	295	0.014 +/- 0.004	< 0.018	
19-Jun-17	26-Jun-17	301	0.019 +/- 0.004	< 0.015	
26-Jun-17	05-Jul-17	378	0.022 +/- 0.003	< 0.012	
05-Jul-17	10-Jul-17	213	0.034 +/- 0.006	< 0.022	
10-Jul-17	17-Jul-17	299	0.026 +/- 0.005	< 0.019	
17-Jul-17	25-Jul-17	341	0.028 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	257	0.023 +/- 0.005	< 0.014	
31-Jul-17	07-Aug-17	302	0.023 +/- 0.004	< 0.011	
07-Aug-17	14-Aug-17	298	0.034 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	309	0.020 +/- 0.004	< 0.008	
21-Aug-17	28-Aug-17	295	0.023 +/- 0.005	< 0.022	
28-Aug-17	05-Sep-17	343	0.043 +/- 0.005	< 0.016	
05-Sep-17	12-Sep-17	300	0.038 +/- 0.005	< 0.013	
12-Sep-17	18-Sep-17	251	0.044 +/- 0.006	< 0.013	
12-Sep-17	18-Sep-17	251	0.047 +/- 0.006		Duplicate
18-Sep-17	25-Sep-17	304	0.027 +/- 0.004	< 0.009	

Air Particulate Filters and Radioiodine Canisters

Location: 049

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
25-Sep-17	02-Oct-17	299	0.027 +/- 0.005	< 0.011	
02-Oct-17	09-Oct-17	298	0.027 +/- 0.005	< 0.011	
09-Oct-17	16-Oct-17	304	0.023 +/- 0.004	< 0.010	
16-Oct-17	24-Oct-17	340	0.021 +/- 0.004	< 0.014	
24-Oct-17	31-Oct-17	299	0.017 +/- 0.004	< 0.009	
31-Oct-17	07-Nov-17	298	0.046 +/- 0.005	< 0.017	
07-Nov-17	13-Nov-17	257	0.041 +/- 0.006	< 0.019	
13-Nov-17	20-Nov-17	298	0.037 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	344	0.026 +/- 0.004	< 0.010	
28-Nov-17	04-Dec-17	263	0.039 +/- 0.006	< 0.013	
04-Dec-17	11-Dec-17	318	0.017 +/- 0.004	< 0.011	
18-Dec-17	27-Dec-17	399	0.039 +/- 0.004	< 0.012	
27-Dec-17	03-Jan-18	294	0.037 +/- 0.005	< 0.012	

Air Particulate Filters and Radioiodine Canisters

Location: 053

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
27-Dec-16	04-Jan-17	342	0.027 +/- 0.004	< 0.019	
04-Jan-17	09-Jan-17	227	0.034 +/- 0.006	< 0.012	
09-Jan-17	16-Jan-17	305	0.035 +/- 0.005	< 0.010	
16-Jan-17	23-Jan-17	299	0.033 +/- 0.005	< 0.006	
23-Jan-17	30-Jan-17	302	0.028 +/- 0.005	< 0.009	
30-Jan-17	06-Feb-17	303	0.025 +/- 0.004	< 0.015	
06-Feb-17	14-Feb-17	344	0.028 +/- 0.004	< 0.010	
14-Feb-17	20-Feb-17	252	0.017 +/- 0.005	< 0.014	
20-Feb-17	27-Feb-17	300	0.026 +/- 0.004	< 0.013	
27-Feb-17	06-Mar-17	301	0.021 +/- 0.004	< 0.009	
06-Mar-17	15-Mar-17	402	0.021 +/- 0.003	< 0.013	
15-Mar-17	20-Mar-17	202	0.027 +/- 0.007	< 0.017	
20-Mar-17	27-Mar-17	303	0.019 +/- 0.004	< 0.016	
27-Mar-17	03-Apr-17	298	0.012 +/- 0.004	< 0.015	
03-Apr-17	10-Apr-17	302	0.018 +/- 0.004	< 0.013	
10-Apr-17	17-Apr-17	301	0.016 +/- 0.004	< 0.007	
17-Apr-17	24-Apr-17	295	0.013 +/- 0.004	< 0.012	
24-Apr-17	01-May-17	303	0.012 +/- 0.004	< 0.010	
01-May-17	09-May-17	330	0.022 +/- 0.004	< 0.010	
01-May-17	09-May-17	330	0.022 +/- 0.004		Duplicate
09-May-17	16-May-17	296	0.018 +/- 0.004	< 0.023	
16-May-17	22-May-17	258	0.017 +/- 0.004	< 0.011	
22-May-17	30-May-17	336	0.020 +/- 0.004	< 0.016	
30-May-17	06-Jun-17	296	0.026 +/- 0.005	< 0.016	
06-Jun-17	12-Jun-17	252	0.027 +/- 0.005	< 0.009	
12-Jun-17	19-Jun-17	303	0.020 +/- 0.004	< 0.017	
19-Jun-17	26-Jun-17	293	0.017 +/- 0.004	< 0.016	
26-Jun-17	05-Jul-17	370	0.025 +/- 0.004	< 0.014	
26-Jun-17	05-Jul-17	370	0.022 +/- 0.003		Duplicate
05-Jul-17	10-Jul-17	213	0.029 +/- 0.005	< 0.022	
10-Jul-17	17-Jul-17	292	0.020 +/- 0.004	< 0.020	
17-Jul-17	25-Jul-17	340	0.028 +/- 0.004	< 0.007	
25-Jul-17	31-Jul-17	262	0.028 +/- 0.005	< 0.013	
31-Jul-17	07-Aug-17	304	0.028 +/- 0.004	< 0.011	
07-Aug-17	14-Aug-17	297	0.033 +/- 0.005	< 0.010	
14-Aug-17	21-Aug-17	309	0.018 +/- 0.004	< 0.008	
21-Aug-17	28-Aug-17	296	0.021 +/- 0.004	< 0.022	
28-Aug-17	05-Sep-17	351	0.037 +/- 0.004	< 0.015	
05-Sep-17	12-Sep-17	288	0.038 +/- 0.005	< 0.014	
12-Sep-17	18-Sep-17	248	0.046 +/- 0.006	< 0.013	
18-Sep-17	25-Sep-17	298	0.030 +/- 0.005	< 0.009	

Air Particulate Filters and Radioiodine Canisters

Location: 053

Collection StartDate	Collection EndDate	Volume m3	Gross Beta Concentration (pCi/m3)	I-131 Concentration (pCi/m3)	Duplicate Analysis
25-Sep-17	02-Oct-17	303	0.025 +/- 0.004	< 0.011	
25-Sep-17	02-Oct-17	303	0.028 +/- 0.005		Duplicate
02-Oct-17	09-Oct-17	301	0.021 +/- 0.004	< 0.010	
02-Oct-17	09-Oct-17	301	0.025 +/- 0.004		Duplicate
09-Oct-17	16-Oct-17	307	0.027 +/- 0.005	< 0.010	
16-Oct-17	24-Oct-17	339	0.022 +/- 0.004	< 0.015	
24-Oct-17	31-Oct-17	297	0.015 +/- 0.004	< 0.009	
31-Oct-17	07-Nov-17	300	0.042 +/- 0.005	< 0.017	
07-Nov-17	13-Nov-17	257	0.032 +/- 0.005	< 0.019	
13-Nov-17	20-Nov-17	298	0.038 +/- 0.005	< 0.008	
20-Nov-17	28-Nov-17	343	0.033 +/- 0.004	< 0.010	
28-Nov-17	04-Dec-17	263	0.037 +/- 0.006	< 0.013	
28-Nov-17	04-Dec-17	263	0.035 +/- 0.005		Duplicate
04-Dec-17	11-Dec-17	320	0.020 +/- 0.004	< 0.011	
18-Dec-17	27-Dec-17	405	0.042 +/- 0.004	< 0.011	
27-Dec-17	03-Jan-18	303	0.037 +/- 0.005	< 0.011	

Quarterly Air Particulates - Gamma

Location: 002

03-Apr-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.070	+/-	0.013
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

26-Jun-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.118	+/-	0.017
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

02-Oct-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.090	+/-	0.015
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.074	+/-	0.012
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 018

03-Apr-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.073	+/-	0.016	*
BE-7	0.077	+/-	0.013	
MN-54		<	0.001	*
MN-54		<	0.001	
CO-58		<	0.001	*
CO-58		<	0.001	
FE-59		<	0.001	*
FE-59		<	0.002	
CO-60		<	0.001	*
CO-60		<	0.001	
ZN-65		<	0.001	*
ZN-65		<	0.001	
ZR-NB-95		<	0.001	*
ZR-NB-95		<	0.001	
CS-134		<	0.001	*
CS-134		<	0.001	
CS-137		<	0.001	*
CS-137		<	0.001	

26-Jun-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.122	+/-	0.018
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

02-Oct-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.095	+/-	0.014
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.061	+/-	0.011

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 018

MN-54	<	0.001
CO-58	<	0.001
FE-59	<	0.001
CO-60	<	0.001
ZN-65	<	0.001
ZR-NB-95	<	0.001
CS-134	<	0.001
CS-137	<	0.001

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 032

03-Apr-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.078	+/-	0.012	
MN-54		<	0.001	
CO-58		<	0.001	
FE-59		<	0.001	
CO-60		<	0.001	
ZN-65		<	0.001	
ZR-NB-95		<	0.001	
CS-134		<	0.001	
CS-137		<	0.001	

26-Jun-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.118	+/-	0.013	
MN-54		<	0.001	
CO-58		<	0.001	
FE-59		<	0.001	
CO-60		<	0.001	
ZN-65		<	0.001	
ZR-NB-95		<	0.001	
CS-134		<	0.001	
CS-137		<	0.001	

02-Oct-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.086	+/-	0.015	
BE-7	0.100	+/-	0.015	*
MN-54		<	0.001	*
MN-54		<	0.001	
CO-58		<	0.001	*
CO-58		<	0.001	
FE-59		<	0.001	*
FE-59		<	0.002	
CO-60		<	0.001	*
CO-60		<	0.001	
ZN-65		<	0.001	*
ZN-65		<	0.001	
ZR-NB-95		<	0.001	*
ZR-NB-95		<	0.001	
CS-134		<	0.001	*
CS-134		<	0.001	
CS-137		<	0.001	*
CS-137		<	0.001	

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.063	+/-	0.016

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 032

MN-54	<	0.001
CO-58	<	0.001
FE-59	<	0.001
CO-60	<	0.001
ZN-65	<	0.002
ZR-NB-95	<	0.002
CS-134	<	0.001
CS-137	<	0.001

*Duplicate Analysis

Quarterly Air Particulates - Gamma

Location: 037

03-Apr-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.070	+/-	0.012
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

26-Jun-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.120	+/-	0.016
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.002
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

02-Oct-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.083	+/-	0.014
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.002
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.070	+/-	0.014
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.002
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 049

03-Apr-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.073	+/-	0.013
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

26-Jun-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.117	+/-	0.016
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.002
CS-134		<	0.001
CS-137		<	0.001

02-Oct-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.090	+/-	0.012
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.070	+/-	0.011
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.001
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 053

03-Apr-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.080	+/-	0.016	
MN-54		<	0.001	
CO-58		<	0.001	
FE-59		<	0.001	
CO-60		<	0.001	
ZN-65		<	0.002	
ZR-NB-95		<	0.001	
CS-134		<	0.001	
CS-137		<	0.001	

26-Jun-17

Nuclide	Concentration (pCi/m3)			
BE-7	0.107	+/-	0.015	
BE-7	0.116	+/-	0.021	*
MN-54		<	0.001	*
MN-54		<	0.001	
CO-58		<	0.001	*
CO-58		<	0.001	
FE-59		<	0.001	*
FE-59		<	0.001	
CO-60		<	0.001	*
CO-60		<	0.001	
ZN-65		<	0.001	
ZN-65		<	0.002	*
ZR-NB-95		<	0.001	*
ZR-NB-95		<	0.001	
CS-134		<	0.001	*
CS-134		<	0.001	
CS-137		<	0.001	*
CS-137		<	0.001	

02-Oct-17

Nuclide	Concentration (pCi/m3)		
BE-7	0.098	+/-	0.014
MN-54		<	0.001
CO-58		<	0.001
FE-59		<	0.002
CO-60		<	0.001
ZN-65		<	0.001
ZR-NB-95		<	0.001
CS-134		<	0.001
CS-137		<	0.001

03-Jan-18

Nuclide	Concentration (pCi/m3)		
BE-7	0.057	+/-	0.010

***Duplicate Analysis**

Quarterly Air Particulates - Gamma

Location: 053

MN-54	<	0.001
CO-58	<	0.001
FE-59	<	0.001
CO-60	<	0.001
ZN-65	<	0.001
ZR-NB-95	<	0.001
CS-134	<	0.001
CS-137	<	0.001

***Duplicate Analysis**

Exposure Pathway - Waterborne
Surface Water
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
12-Jan-17	SURFACE WATER	MN-54	<	2.5	
12-Jan-17	SURFACE WATER	CO-58	<	1.7	
12-Jan-17	SURFACE WATER	FE-59	<	6.4	
12-Jan-17	SURFACE WATER	CO-60	<	2.5	
12-Jan-17	SURFACE WATER	ZN-65	<	4.1	
12-Jan-17	SURFACE WATER	ZR-NB-95	<	3.9	
12-Jan-17	SURFACE WATER	I-131	<	4.9	
12-Jan-17	SURFACE WATER	CS-134	<	3.7	
12-Jan-17	SURFACE WATER	CS-137	<	2.9	
12-Jan-17	SURFACE WATER	BA-LA-140	<	4.2	
12-Jan-17	SURFACE WATER	H-3	<	179.0	
08-Feb-17	SURFACE WATER	MN-54	<	2.6	
08-Feb-17	SURFACE WATER	CO-58	<	1.9	
08-Feb-17	SURFACE WATER	FE-59	<	2.7	
08-Feb-17	SURFACE WATER	CO-60	<	2.6	
08-Feb-17	SURFACE WATER	ZN-65	<	2.7	
08-Feb-17	SURFACE WATER	ZR-NB-95	<	2.8	
08-Feb-17	SURFACE WATER	I-131	<	3.3	
08-Feb-17	SURFACE WATER	CS-134	<	2.8	
08-Feb-17	SURFACE WATER	CS-137	<	2.3	
08-Feb-17	SURFACE WATER	BA-LA-140	<	3.4	
08-Feb-17	SURFACE WATER	H-3	<	156.0	
08-Feb-17	SURFACE WATER	FE-55	<	37.0	
08-Mar-17	SURFACE WATER	MN-54	<	2.3	
08-Mar-17	SURFACE WATER	CO-58	<	3.6	
08-Mar-17	SURFACE WATER	FE-59	<	5.5	
08-Mar-17	SURFACE WATER	CO-60	<	2.8	
08-Mar-17	SURFACE WATER	ZN-65	<	7.0	
08-Mar-17	SURFACE WATER	ZR-NB-95	<	3.5	
08-Mar-17	SURFACE WATER	I-131	<	5.4	
08-Mar-17	SURFACE WATER	CS-134	<	3.3	
08-Mar-17	SURFACE WATER	CS-137	<	3.2	
08-Mar-17	SURFACE WATER	BA-LA-140	<	4.1	
08-Mar-17	SURFACE WATER	H-3	<	154.0	
12-Apr-17	SURFACE WATER	MN-54	<	3.4	
12-Apr-17	SURFACE WATER	CO-58	<	4.4	
12-Apr-17	SURFACE WATER	FE-59	<	6.1	
12-Apr-17	SURFACE WATER	CO-60	<	2.7	

Exposure Pathway - Waterborne
Surface Water
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
12-Apr-17	SURFACE WATER	ZN-65	<	4.7	
12-Apr-17	SURFACE WATER	ZR-NB-95	<	3.0	
12-Apr-17	SURFACE WATER	I-131	<	8.2	
12-Apr-17	SURFACE WATER	CS-134	<	4.4	
12-Apr-17	SURFACE WATER	CS-137	<	4.2	
12-Apr-17	SURFACE WATER	BA-LA-140	<	2.7	
12-Apr-17	SURFACE WATER	H-3	<	144.0	
03-May-17	SURFACE WATER	MN-54	<	2.7	
03-May-17	SURFACE WATER	CO-58	<	2.1	
03-May-17	SURFACE WATER	FE-59	<	4.5	
03-May-17	SURFACE WATER	CO-60	<	1.7	
03-May-17	SURFACE WATER	ZN-65	<	3.8	
03-May-17	SURFACE WATER	ZR-NB-95	<	3.2	
03-May-17	SURFACE WATER	I-131	<	5.4	
03-May-17	SURFACE WATER	CS-134	<	3.0	
03-May-17	SURFACE WATER	CS-137	<	2.9	
03-May-17	SURFACE WATER	BA-LA-140	<	3.1	
03-May-17	SURFACE WATER	H-3	<	148.0	
03-May-17	SURFACE WATER	FE-55	<	78.0	
08-Jun-17	SURFACE WATER	MN-54	<	2.5	
08-Jun-17	SURFACE WATER	CO-58	<	3.2	
08-Jun-17	SURFACE WATER	FE-59	<	5.2	
08-Jun-17	SURFACE WATER	CO-60	<	3.3	
08-Jun-17	SURFACE WATER	ZN-65	<	6.1	
08-Jun-17	SURFACE WATER	ZR-NB-95	<	4.3	
08-Jun-17	SURFACE WATER	I-131	<	5.7	
08-Jun-17	SURFACE WATER	CS-134	<	4.0	
08-Jun-17	SURFACE WATER	CS-137	<	2.8	
08-Jun-17	SURFACE WATER	BA-LA-140	<	2.3	
08-Jun-17	SURFACE WATER	H-3	<	153.0	
13-Jul-17	SURFACE WATER	MN-54	<	4.4	
13-Jul-17	SURFACE WATER	CO-58	<	4.2	
13-Jul-17	SURFACE WATER	FE-59	<	6.0	
13-Jul-17	SURFACE WATER	CO-60	<	4.8	
13-Jul-17	SURFACE WATER	ZN-65	<	4.3	
13-Jul-17	SURFACE WATER	ZR-NB-95	<	4.3	
13-Jul-17	SURFACE WATER	I-131	<	10.4	
13-Jul-17	SURFACE WATER	CS-134	<	5.5	

Exposure Pathway - Waterborne
Surface Water
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
13-Jul-17	SURFACE WATER	CS-137	<	3.7	
13-Jul-17	SURFACE WATER	BA-LA-140	<	6.5	
13-Jul-17	SURFACE WATER	H-3	<	150.0	
16-Aug-17	SURFACE WATER	MN-54	<	3.2	
16-Aug-17	SURFACE WATER	CO-58	<	2.7	
16-Aug-17	SURFACE WATER	FE-59	<	7.4	
16-Aug-17	SURFACE WATER	CO-60	<	3.4	
16-Aug-17	SURFACE WATER	ZN-65	<	7.4	
16-Aug-17	SURFACE WATER	ZR-NB-95	<	3.9	
16-Aug-17	SURFACE WATER	I-131	<	7.8	
16-Aug-17	SURFACE WATER	CS-134	<	4.0	
16-Aug-17	SURFACE WATER	CS-137	<	4.3	
16-Aug-17	SURFACE WATER	BA-LA-140	<	2.0	
16-Aug-17	SURFACE WATER	H-3	<	144.0	
16-Aug-17	SURFACE WATER	FE-55	<	169.0	
25-Sep-17	SURFACE WATER	MN-54	<	4.8	Duplicate
25-Sep-17	SURFACE WATER	MN-54	<	3.1	
25-Sep-17	SURFACE WATER	CO-58	<	3.3	Duplicate
25-Sep-17	SURFACE WATER	CO-58	<	2.2	
25-Sep-17	SURFACE WATER	FE-59	<	4.5	Duplicate
25-Sep-17	SURFACE WATER	FE-59	<	6.5	
25-Sep-17	SURFACE WATER	CO-60	<	4.7	Duplicate
25-Sep-17	SURFACE WATER	CO-60	<	2.9	
25-Sep-17	SURFACE WATER	ZN-65	<	3.9	Duplicate
25-Sep-17	SURFACE WATER	ZN-65	<	4.5	
25-Sep-17	SURFACE WATER	ZR-NB-95	<	5.7	Duplicate
25-Sep-17	SURFACE WATER	ZR-NB-95	<	2.2	
25-Sep-17	SURFACE WATER	I-131	<	7.0	Duplicate
25-Sep-17	SURFACE WATER	I-131	<	6.6	
25-Sep-17	SURFACE WATER	CS-134	<	5.1	Duplicate
25-Sep-17	SURFACE WATER	CS-134	<	4.3	
25-Sep-17	SURFACE WATER	CS-137	<	3.5	Duplicate
25-Sep-17	SURFACE WATER	CS-137	<	4.1	
25-Sep-17	SURFACE WATER	BA-LA-140	<	5.4	Duplicate
25-Sep-17	SURFACE WATER	BA-LA-140	<	2.1	
25-Sep-17	SURFACE WATER	H-3	<	144.0	Duplicate
25-Sep-17	SURFACE WATER	H-3	<	144.0	
11-Oct-17	SURFACE WATER	MN-54	<	2.4	

Exposure Pathway - Waterborne
Surface Water
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
11-Oct-17	SURFACE WATER	CO-58	<	3.7	
11-Oct-17	SURFACE WATER	FE-59	<	7.5	
11-Oct-17	SURFACE WATER	CO-60	<	4.0	
11-Oct-17	SURFACE WATER	ZN-65	<	6.5	
11-Oct-17	SURFACE WATER	ZR-NB-95	<	4.1	
11-Oct-17	SURFACE WATER	I-131	<	7.9	
11-Oct-17	SURFACE WATER	CS-134	<	4.3	
11-Oct-17	SURFACE WATER	CS-137	<	3.5	
11-Oct-17	SURFACE WATER	BA-LA-140	<	2.4	
11-Oct-17	SURFACE WATER	H-3	<	149.0	
07-Nov-17	SURFACE WATER	MN-54	<	2.3	
07-Nov-17	SURFACE WATER	CO-58	<	2.4	
07-Nov-17	SURFACE WATER	FE-59	<	6.1	
07-Nov-17	SURFACE WATER	CO-60	<	1.1	
07-Nov-17	SURFACE WATER	ZN-65	<	3.1	
07-Nov-17	SURFACE WATER	ZR-NB-95	<	3.6	
07-Nov-17	SURFACE WATER	I-131	<	6.6	
07-Nov-17	SURFACE WATER	CS-134	<	3.3	
07-Nov-17	SURFACE WATER	CS-137	<	3.5	
07-Nov-17	SURFACE WATER	BA-LA-140	<	3.1	
07-Nov-17	SURFACE WATER	H-3	<	183.0	
07-Nov-17	SURFACE WATER	FE-55	<	93.0	
06-Dec-17	SURFACE WATER	MN-54	<	2.4	
06-Dec-17	SURFACE WATER	CO-58	<	2.7	
06-Dec-17	SURFACE WATER	FE-59	<	5.6	
06-Dec-17	SURFACE WATER	CO-60	<	3.1	
06-Dec-17	SURFACE WATER	ZN-65	<	3.4	
06-Dec-17	SURFACE WATER	ZR-NB-95	<	2.9	
06-Dec-17	SURFACE WATER	I-131	<	4.1	
06-Dec-17	SURFACE WATER	CS-134	<	4.1	
06-Dec-17	SURFACE WATER	CS-137	<	2.9	
06-Dec-17	SURFACE WATER	BA-LA-140	<	3.8	
06-Dec-17	SURFACE WATER	H-3	<	148.0	

Exposure Pathway - Waterborne
Surface Water
Location: SP

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
12-Jan-17	SURFACE WATER	MN-54	<	3.3	
12-Jan-17	SURFACE WATER	CO-58	<	2.1	
12-Jan-17	SURFACE WATER	FE-59	<	2.7	
12-Jan-17	SURFACE WATER	CO-60	<	2.4	
12-Jan-17	SURFACE WATER	ZN-65	<	4.3	
12-Jan-17	SURFACE WATER	ZR-NB-95	<	2.7	
12-Jan-17	SURFACE WATER	I-131	<	5.4	
12-Jan-17	SURFACE WATER	CS-134	<	2.9	
12-Jan-17	SURFACE WATER	CS-137	<	2.5	
12-Jan-17	SURFACE WATER	BA-LA-140	<	3.1	
12-Jan-17	SURFACE WATER	H-3	10,926 +/-	295.0	
08-Feb-17	SURFACE WATER	MN-54	<	2.3	
08-Feb-17	SURFACE WATER	CO-58	<	2.5	
08-Feb-17	SURFACE WATER	FE-59	<	5.7	
08-Feb-17	SURFACE WATER	CO-60	<	2.2	
08-Feb-17	SURFACE WATER	ZN-65	<	2.6	
08-Feb-17	SURFACE WATER	ZR-NB-95	<	2.4	
08-Feb-17	SURFACE WATER	I-131	<	3.9	
08-Feb-17	SURFACE WATER	CS-134	<	2.8	
08-Feb-17	SURFACE WATER	CS-137	<	2.8	
08-Feb-17	SURFACE WATER	BA-LA-140	<	2.5	
08-Feb-17	SURFACE WATER	H-3	10,758 +/-	314.0	
08-Feb-17	SURFACE WATER	FE-55	<	39.0	
08-Mar-17	SURFACE WATER	MN-54	<	1.6	
08-Mar-17	SURFACE WATER	CO-58	<	1.9	
08-Mar-17	SURFACE WATER	FE-59	<	3.5	
08-Mar-17	SURFACE WATER	CO-60	<	2.9	
08-Mar-17	SURFACE WATER	ZN-65	<	2.4	
08-Mar-17	SURFACE WATER	ZR-NB-95	<	2.0	
08-Mar-17	SURFACE WATER	I-131	<	3.7	
08-Mar-17	SURFACE WATER	CS-134	<	2.7	
08-Mar-17	SURFACE WATER	CS-137	<	1.8	
08-Mar-17	SURFACE WATER	BA-LA-140	<	2.2	
08-Mar-17	SURFACE WATER	H-3	10,464 +/-	311.0	
12-Apr-17	SURFACE WATER	MN-54	<	2.6	
12-Apr-17	SURFACE WATER	CO-58	<	3.1	
12-Apr-17	SURFACE WATER	FE-59	<	5.8	
12-Apr-17	SURFACE WATER	CO-60	<	2.4	

Exposure Pathway - Waterborne
Surface Water
Location: SP

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
12-Apr-17	SURFACE WATER	ZN-65	<	4.0	
12-Apr-17	SURFACE WATER	ZR-NB-95	<	2.5	
12-Apr-17	SURFACE WATER	I-131	<	5.0	
12-Apr-17	SURFACE WATER	CS-134	<	3.3	
12-Apr-17	SURFACE WATER	CS-137	<	2.5	
12-Apr-17	SURFACE WATER	BA-LA-140	<	1.8	
12-Apr-17	SURFACE WATER	H-3	9,231 +/-	291.0	
03-May-17	SURFACE WATER	MN-54	<	2.9	
03-May-17	SURFACE WATER	CO-58	<	2.1	
03-May-17	SURFACE WATER	FE-59	<	7.6	
03-May-17	SURFACE WATER	CO-60	<	2.8	
03-May-17	SURFACE WATER	ZN-65	<	7.2	
03-May-17	SURFACE WATER	ZR-NB-95	<	3.5	
03-May-17	SURFACE WATER	I-131	<	8.3	
03-May-17	SURFACE WATER	CS-134	<	3.6	
03-May-17	SURFACE WATER	CS-137	<	2.7	
03-May-17	SURFACE WATER	BA-LA-140	<	3.4	
03-May-17	SURFACE WATER	H-3	8,804 +/-	283.0	
03-May-17	SURFACE WATER	FE-55	<	75.0	
08-Jun-17	SURFACE WATER	MN-54	<	2.6	
08-Jun-17	SURFACE WATER	MN-54	<	3.2	Duplicate
08-Jun-17	SURFACE WATER	CO-58	<	2.7	
08-Jun-17	SURFACE WATER	CO-58	<	3.0	Duplicate
08-Jun-17	SURFACE WATER	FE-59	<	2.0	
08-Jun-17	SURFACE WATER	FE-59	<	5.8	Duplicate
08-Jun-17	SURFACE WATER	CO-60	<	2.0	
08-Jun-17	SURFACE WATER	CO-60	<	3.8	Duplicate
08-Jun-17	SURFACE WATER	ZN-65	<	6.9	Duplicate
08-Jun-17	SURFACE WATER	ZN-65	<	2.9	
08-Jun-17	SURFACE WATER	ZR-NB-95	<	2.4	
08-Jun-17	SURFACE WATER	ZR-NB-95	<	3.6	Duplicate
08-Jun-17	SURFACE WATER	I-131	<	4.1	
08-Jun-17	SURFACE WATER	I-131	<	9.6	Duplicate
08-Jun-17	SURFACE WATER	CS-134	<	2.8	
08-Jun-17	SURFACE WATER	CS-134	<	2.5	Duplicate
08-Jun-17	SURFACE WATER	CS-137	<	3.7	Duplicate
08-Jun-17	SURFACE WATER	CS-137	<	2.7	
08-Jun-17	SURFACE WATER	BA-LA-140	<	3.1	

Exposure Pathway - Waterborne
Surface Water
Location: SP

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Jun-17	SURFACE WATER	BA-LA-140	<	3.0	Duplicate
08-Jun-17	SURFACE WATER	H-3	8,178 +/-	273.0	
08-Jun-17	SURFACE WATER	H-3	8,563 +/-	279.0	Duplicate
13-Jul-17	SURFACE WATER	MN-54	<	2.2	
13-Jul-17	SURFACE WATER	CO-58	<	2.4	
13-Jul-17	SURFACE WATER	FE-59	<	5.0	
13-Jul-17	SURFACE WATER	CO-60	<	2.5	
13-Jul-17	SURFACE WATER	ZN-65	<	5.7	
13-Jul-17	SURFACE WATER	ZR-NB-95	<	4.8	
13-Jul-17	SURFACE WATER	I-131	<	9.4	
13-Jul-17	SURFACE WATER	CS-134	<	4.3	
13-Jul-17	SURFACE WATER	CS-137	<	4.6	
13-Jul-17	SURFACE WATER	BA-LA-140	<	4.0	
13-Jul-17	SURFACE WATER	H-3	8,042 +/-	274.0	
16-Aug-17	SURFACE WATER	MN-54	<	1.9	
16-Aug-17	SURFACE WATER	CO-58	<	2.2	
16-Aug-17	SURFACE WATER	FE-59	<	3.6	
16-Aug-17	SURFACE WATER	CO-60	<	2.2	
16-Aug-17	SURFACE WATER	ZN-65	<	2.9	
16-Aug-17	SURFACE WATER	ZR-NB-95	<	3.3	
16-Aug-17	SURFACE WATER	I-131	<	6.4	
16-Aug-17	SURFACE WATER	CS-134	<	3.1	
16-Aug-17	SURFACE WATER	CS-137	<	3.1	
16-Aug-17	SURFACE WATER	BA-LA-140	<	4.2	
16-Aug-17	SURFACE WATER	H-3	7,382 +/-	260.0	
16-Aug-17	SURFACE WATER	FE-55	<	156.0	
25-Sep-17	SURFACE WATER	MN-54	<	4.0	
25-Sep-17	SURFACE WATER	CO-58	<	2.1	
25-Sep-17	SURFACE WATER	FE-59	<	4.4	
25-Sep-17	SURFACE WATER	CO-60	<	2.9	
25-Sep-17	SURFACE WATER	ZN-65	<	6.7	
25-Sep-17	SURFACE WATER	ZR-NB-95	<	2.1	
25-Sep-17	SURFACE WATER	I-131	<	6.5	
25-Sep-17	SURFACE WATER	CS-134	<	3.6	
25-Sep-17	SURFACE WATER	CS-137	<	3.7	
25-Sep-17	SURFACE WATER	BA-LA-140	<	4.3	
25-Sep-17	SURFACE WATER	H-3	8,334 +/-	272.0	
11-Oct-17	SURFACE WATER	MN-54	<	3.1	

Exposure Pathway - Waterborne
Surface Water
Location: SP

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
11-Oct-17	SURFACE WATER	CO-58	<	2.7	
11-Oct-17	SURFACE WATER	FE-59	<	8.4	
11-Oct-17	SURFACE WATER	CO-60	<	2.6	
11-Oct-17	SURFACE WATER	ZN-65	<	7.3	
11-Oct-17	SURFACE WATER	ZR-NB-95	<	3.9	
11-Oct-17	SURFACE WATER	I-131	<	9.2	
11-Oct-17	SURFACE WATER	CS-134	<	3.5	
11-Oct-17	SURFACE WATER	CS-137	<	4.1	
11-Oct-17	SURFACE WATER	BA-LA-140	<	3.7	
11-Oct-17	SURFACE WATER	H-3	9,034 +/-	285.0	
07-Nov-17	SURFACE WATER	MN-54	<	2.6	
07-Nov-17	SURFACE WATER	CO-58	<	2.7	
07-Nov-17	SURFACE WATER	FE-59	<	4.9	
07-Nov-17	SURFACE WATER	CO-60	<	1.7	
07-Nov-17	SURFACE WATER	ZN-65	<	4.4	
07-Nov-17	SURFACE WATER	ZR-NB-95	<	3.7	
07-Nov-17	SURFACE WATER	I-131	<	6.8	
07-Nov-17	SURFACE WATER	CS-134	<	2.9	
07-Nov-17	SURFACE WATER	CS-137	<	2.7	
07-Nov-17	SURFACE WATER	BA-LA-140	<	3.4	
07-Nov-17	SURFACE WATER	H-3	9,731 +/-	279.0	
07-Nov-17	SURFACE WATER	FE-55	<	91.0	
06-Dec-17	SURFACE WATER	MN-54	<	6.7	
06-Dec-17	SURFACE WATER	CO-58	<	3.6	
06-Dec-17	SURFACE WATER	FE-59	<	6.6	
06-Dec-17	SURFACE WATER	CO-60	<	4.7	
06-Dec-17	SURFACE WATER	ZN-65	<	6.2	
06-Dec-17	SURFACE WATER	ZR-NB-95	<	5.8	
06-Dec-17	SURFACE WATER	I-131	<	5.5	
06-Dec-17	SURFACE WATER	CS-134	<	6.3	
06-Dec-17	SURFACE WATER	CS-137	<	3.9	
06-Dec-17	SURFACE WATER	BA-LA-140	<	6.6	
06-Dec-17	SURFACE WATER	H-3	11,221 +/-	316.0	

Exposure Pathway - Waterborne
Ground Water
Location: B-12

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	1.5	
08-Feb-17	GROUND WATER	CO-58	<	1.7	
08-Feb-17	GROUND WATER	FE-59	<	3.8	
08-Feb-17	GROUND WATER	CO-60	<	1.9	
08-Feb-17	GROUND WATER	ZN-65	<	4.2	
08-Feb-17	GROUND WATER	ZR-NB-95	<	3.2	
08-Feb-17	GROUND WATER	I-131	<	0.251	
08-Feb-17	GROUND WATER	CS-134	<	2.7	
08-Feb-17	GROUND WATER	CS-137	<	3.0	
08-Feb-17	GROUND WATER	BA-LA-140	<	3.6	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	2.6	
03-May-17	GROUND WATER	CO-58	<	2.6	
03-May-17	GROUND WATER	FE-59	<	4.1	
03-May-17	GROUND WATER	CO-60	<	1.6	
03-May-17	GROUND WATER	ZN-65	<	5.9	
03-May-17	GROUND WATER	ZR-NB-95	<	3.2	
03-May-17	GROUND WATER	I-131	<	0.481	
03-May-17	GROUND WATER	CS-134	<	2.8	
03-May-17	GROUND WATER	CS-137	<	2.1	
03-May-17	GROUND WATER	BA-LA-140	<	1.4	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.2	
16-Aug-17	GROUND WATER	CO-58	<	2.4	
16-Aug-17	GROUND WATER	FE-59	<	3.7	
16-Aug-17	GROUND WATER	CO-60	<	2.9	
16-Aug-17	GROUND WATER	ZN-65	<	2.7	
16-Aug-17	GROUND WATER	ZR-NB-95	<	3.2	
16-Aug-17	GROUND WATER	I-131	<	0.384	
16-Aug-17	GROUND WATER	CS-134	<	3.0	
16-Aug-17	GROUND WATER	CS-137	<	2.7	
16-Aug-17	GROUND WATER	BA-LA-140	<	1.8	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	3.4	
07-Nov-17	GROUND WATER	CO-58	<	3.0	
07-Nov-17	GROUND WATER	FE-59	<	5.3	
07-Nov-17	GROUND WATER	CO-60	<	3.1	
07-Nov-17	GROUND WATER	ZN-65	<	2.7	

Exposure Pathway - Waterborne
Ground Water
Location: B-12

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	3.3	
07-Nov-17	GROUND WATER	I-131	<	0.484	
07-Nov-17	GROUND WATER	CS-134	<	3.4	
07-Nov-17	GROUND WATER	CS-137	<	3.2	
07-Nov-17	GROUND WATER	BA-LA-140	<	2.6	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: C-10

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	1.9	
08-Feb-17	GROUND WATER	CO-58	<	2.3	
08-Feb-17	GROUND WATER	FE-59	<	4.9	
08-Feb-17	GROUND WATER	CO-60	<	1.6	
08-Feb-17	GROUND WATER	ZN-65	<	5.4	
08-Feb-17	GROUND WATER	ZR-NB-95	<	3.3	
08-Feb-17	GROUND WATER	I-131	<	0.289	
08-Feb-17	GROUND WATER	CS-134	<	3.2	
08-Feb-17	GROUND WATER	CS-137	<	2.9	
08-Feb-17	GROUND WATER	BA-LA-140	<	2.5	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	2.3	
03-May-17	GROUND WATER	CO-58	<	1.8	
03-May-17	GROUND WATER	FE-59	<	6.2	
03-May-17	GROUND WATER	CO-60	<	2.4	
03-May-17	GROUND WATER	ZN-65	<	4.6	
03-May-17	GROUND WATER	ZR-NB-95	<	2.4	
03-May-17	GROUND WATER	I-131	<	0.335	
03-May-17	GROUND WATER	CS-134	<	3.7	
03-May-17	GROUND WATER	CS-137	<	3.5	
03-May-17	GROUND WATER	BA-LA-140	<	2.4	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.1	
16-Aug-17	GROUND WATER	CO-58	<	2.2	
16-Aug-17	GROUND WATER	FE-59	<	2.8	
16-Aug-17	GROUND WATER	CO-60	<	3.3	
16-Aug-17	GROUND WATER	ZN-65	<	4.8	
16-Aug-17	GROUND WATER	ZR-NB-95	<	3.3	
16-Aug-17	GROUND WATER	I-131	<	0.386	
16-Aug-17	GROUND WATER	CS-134	<	3.0	
16-Aug-17	GROUND WATER	CS-137	<	3.2	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.9	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	2.8	
07-Nov-17	GROUND WATER	CO-58	<	2.2	
07-Nov-17	GROUND WATER	FE-59	<	4.4	
07-Nov-17	GROUND WATER	CO-60	<	2.7	
07-Nov-17	GROUND WATER	ZN-65	<	2.1	

Exposure Pathway - Waterborne
Ground Water
Location: C-10

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	3.3	
07-Nov-17	GROUND WATER	I-131	<	0.398	
07-Nov-17	GROUND WATER	CS-134	<	3.2	
07-Nov-17	GROUND WATER	CS-137	<	2.9	
07-Nov-17	GROUND WATER	BA-LA-140	<	4.1	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: C-49

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	5.2	
08-Feb-17	GROUND WATER	CO-58	<	2.0	
08-Feb-17	GROUND WATER	FE-59	<	8.5	
08-Feb-17	GROUND WATER	CO-60	<	4.5	
08-Feb-17	GROUND WATER	ZN-65	<	4.6	
08-Feb-17	GROUND WATER	ZR-NB-95	<	4.8	
08-Feb-17	GROUND WATER	I-131	<	0.283	
08-Feb-17	GROUND WATER	CS-134	<	4.8	
08-Feb-17	GROUND WATER	CS-137	<	4.9	
08-Feb-17	GROUND WATER	BA-LA-140	<	4.0	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	3.3	
03-May-17	GROUND WATER	CO-58	<	3.4	
03-May-17	GROUND WATER	FE-59	<	2.5	
03-May-17	GROUND WATER	CO-60	<	2.7	
03-May-17	GROUND WATER	ZN-65	<	2.8	
03-May-17	GROUND WATER	ZR-NB-95	<	1.8	
03-May-17	GROUND WATER	I-131	<	0.332	
03-May-17	GROUND WATER	CS-134	<	3.1	
03-May-17	GROUND WATER	CS-137	<	4.0	
03-May-17	GROUND WATER	BA-LA-140	<	2.8	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	5.7	
16-Aug-17	GROUND WATER	CO-58	<	3.7	
16-Aug-17	GROUND WATER	FE-59	<	8.6	
16-Aug-17	GROUND WATER	CO-60	<	6.2	
16-Aug-17	GROUND WATER	ZN-65	<	4.6	
16-Aug-17	GROUND WATER	ZR-NB-95	<	3.5	
16-Aug-17	GROUND WATER	I-131	<	0.185	
16-Aug-17	GROUND WATER	CS-134	<	6.3	
16-Aug-17	GROUND WATER	CS-137	<	6.6	
16-Aug-17	GROUND WATER	BA-LA-140	<	10.4	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	2.5	
07-Nov-17	GROUND WATER	CO-58	<	3.6	
07-Nov-17	GROUND WATER	FE-59	<	3.4	
07-Nov-17	GROUND WATER	CO-60	<	3.0	
07-Nov-17	GROUND WATER	ZN-65	<	5.3	

Exposure Pathway - Waterborne
Ground Water
Location: C-49

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	2.1	
07-Nov-17	GROUND WATER	I-131	<	0.446	
07-Nov-17	GROUND WATER	CS-134	<	3.9	
07-Nov-17	GROUND WATER	CS-137	<	4.7	
07-Nov-17	GROUND WATER	BA-LA-140	<	1.9	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: F-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	2.0	
08-Feb-17	GROUND WATER	CO-58	<	2.0	
08-Feb-17	GROUND WATER	FE-59	<	4.7	
08-Feb-17	GROUND WATER	CO-60	<	2.4	
08-Feb-17	GROUND WATER	ZN-65	<	2.8	
08-Feb-17	GROUND WATER	ZR-NB-95	<	3.3	
08-Feb-17	GROUND WATER	I-131	<	0.33	
08-Feb-17	GROUND WATER	CS-134	<	3.5	
08-Feb-17	GROUND WATER	CS-137	<	3.6	
08-Feb-17	GROUND WATER	BA-LA-140	<	4.4	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	3.0	
03-May-17	GROUND WATER	CO-58	<	3.8	
03-May-17	GROUND WATER	FE-59	<	4.9	
03-May-17	GROUND WATER	CO-60	<	2.2	
03-May-17	GROUND WATER	ZN-65	<	4.9	
03-May-17	GROUND WATER	ZR-NB-95	<	3.3	
03-May-17	GROUND WATER	I-131	<	0.317	
03-May-17	GROUND WATER	CS-134	<	3.5	
03-May-17	GROUND WATER	CS-137	<	3.5	
03-May-17	GROUND WATER	BA-LA-140	<	1.2	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.4	
16-Aug-17	GROUND WATER	CO-58	<	1.5	
16-Aug-17	GROUND WATER	FE-59	<	6.0	
16-Aug-17	GROUND WATER	CO-60	<	2.6	
16-Aug-17	GROUND WATER	ZN-65	<	4.7	
16-Aug-17	GROUND WATER	ZR-NB-95	<	2.2	
16-Aug-17	GROUND WATER	I-131	<	0.356	
16-Aug-17	GROUND WATER	CS-134	<	2.4	
16-Aug-17	GROUND WATER	CS-137	<	2.8	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.1	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	3.1	
07-Nov-17	GROUND WATER	CO-58	<	2.1	
07-Nov-17	GROUND WATER	FE-59	<	4.6	
07-Nov-17	GROUND WATER	CO-60	<	1.5	
07-Nov-17	GROUND WATER	ZN-65	<	2.4	

Exposure Pathway - Waterborne
Ground Water
Location: F-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	2.3	
07-Nov-17	GROUND WATER	I-131	<	0.449	
07-Nov-17	GROUND WATER	CS-134	<	2.9	
07-Nov-17	GROUND WATER	CS-137	<	2.5	
07-Nov-17	GROUND WATER	BA-LA-140	<	3.9	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: G-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	2.2	
08-Feb-17	GROUND WATER	CO-58	<	2.6	
08-Feb-17	GROUND WATER	FE-59	<	4.2	
08-Feb-17	GROUND WATER	CO-60	<	2.4	
08-Feb-17	GROUND WATER	ZN-65	<	5.2	
08-Feb-17	GROUND WATER	ZR-NB-95	<	2.8	
08-Feb-17	GROUND WATER	I-131	<	0.475	
08-Feb-17	GROUND WATER	CS-134	<	3.1	
08-Feb-17	GROUND WATER	CS-137	<	3.1	
08-Feb-17	GROUND WATER	BA-LA-140	<	2.9	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	4.6	
03-May-17	GROUND WATER	CO-58	<	3.7	
03-May-17	GROUND WATER	FE-59	<	8.7	
03-May-17	GROUND WATER	CO-60	<	4.4	
03-May-17	GROUND WATER	ZN-65	<	6.1	
03-May-17	GROUND WATER	ZR-NB-95	<	5.2	
03-May-17	GROUND WATER	I-131	<	0.349	
03-May-17	GROUND WATER	CS-134	<	5.8	
03-May-17	GROUND WATER	CS-137	<	3.2	
03-May-17	GROUND WATER	BA-LA-140	<	4.8	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.7	
16-Aug-17	GROUND WATER	CO-58	<	1.7	
16-Aug-17	GROUND WATER	FE-59	<	5.3	
16-Aug-17	GROUND WATER	CO-60	<	2.5	
16-Aug-17	GROUND WATER	ZN-65	<	6.7	
16-Aug-17	GROUND WATER	ZR-NB-95	<	3.0	
16-Aug-17	GROUND WATER	I-131	<	0.316	
16-Aug-17	GROUND WATER	CS-134	<	3.8	
16-Aug-17	GROUND WATER	CS-137	<	3.1	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.3	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	2.7	
07-Nov-17	GROUND WATER	CO-58	<	2.1	
07-Nov-17	GROUND WATER	FE-59	<	6.2	
07-Nov-17	GROUND WATER	CO-60	<	3.4	
07-Nov-17	GROUND WATER	ZN-65	<	6.4	

Exposure Pathway - Waterborne
Ground Water
Location: G-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	2.7	
07-Nov-17	GROUND WATER	I-131	<	0.421	
07-Nov-17	GROUND WATER	CS-134	<	4.6	
07-Nov-17	GROUND WATER	CS-137	<	3.7	
07-Nov-17	GROUND WATER	BA-LA-140	<	1.9	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: J-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	1.4	
08-Feb-17	GROUND WATER	CO-58	<	2.7	
08-Feb-17	GROUND WATER	FE-59	<	5.7	
08-Feb-17	GROUND WATER	CO-60	<	2.1	
08-Feb-17	GROUND WATER	ZN-65	<	6.4	
08-Feb-17	GROUND WATER	ZR-NB-95	<	2.5	
08-Feb-17	GROUND WATER	I-131	<	0.28	
08-Feb-17	GROUND WATER	CS-134	<	2.7	
08-Feb-17	GROUND WATER	CS-137	<	2.2	
08-Feb-17	GROUND WATER	BA-LA-140	<	4.3	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	2.4	
03-May-17	GROUND WATER	CO-58	<	3.4	
03-May-17	GROUND WATER	FE-59	<	3.5	
03-May-17	GROUND WATER	CO-60	<	2.1	
03-May-17	GROUND WATER	ZN-65	<	3.7	
03-May-17	GROUND WATER	ZR-NB-95	<	2.4	
03-May-17	GROUND WATER	I-131	<	0.27	
03-May-17	GROUND WATER	CS-134	<	3.6	
03-May-17	GROUND WATER	CS-137	<	3.6	
03-May-17	GROUND WATER	BA-LA-140	<	2.2	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	4.3	
16-Aug-17	GROUND WATER	CO-58	<	3.4	
16-Aug-17	GROUND WATER	FE-59	<	5.4	
16-Aug-17	GROUND WATER	CO-60	<	3.7	
16-Aug-17	GROUND WATER	ZN-65	<	9.4	
16-Aug-17	GROUND WATER	ZR-NB-95	<	5.8	
16-Aug-17	GROUND WATER	I-131	<	0.353	
16-Aug-17	GROUND WATER	CS-134	<	4.4	
16-Aug-17	GROUND WATER	CS-137	<	4.7	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.9	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	1.6	
07-Nov-17	GROUND WATER	CO-58	<	3.0	
07-Nov-17	GROUND WATER	FE-59	<	6.1	
07-Nov-17	GROUND WATER	CO-60	<	1.6	
07-Nov-17	GROUND WATER	ZN-65	<	6.1	

Exposure Pathway - Waterborne
Ground Water
Location: J-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	1.9	
07-Nov-17	GROUND WATER	I-131	<	0.354	
07-Nov-17	GROUND WATER	CS-134	<	3.7	
07-Nov-17	GROUND WATER	CS-137	<	3.3	
07-Nov-17	GROUND WATER	BA-LA-140	<	4.5	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: J-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	3.2	
08-Feb-17	GROUND WATER	CO-58	<	1.5	
08-Feb-17	GROUND WATER	FE-59	<	3.2	
08-Feb-17	GROUND WATER	CO-60	<	1.7	
08-Feb-17	GROUND WATER	ZN-65	<	3.3	
08-Feb-17	GROUND WATER	ZR-NB-95	<	2.3	
08-Feb-17	GROUND WATER	I-131	<	0.275	
08-Feb-17	GROUND WATER	CS-134	<	3.0	
08-Feb-17	GROUND WATER	CS-137	<	3.3	
08-Feb-17	GROUND WATER	BA-LA-140	<	2.0	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	2.8	
03-May-17	GROUND WATER	CO-58	<	2.8	
03-May-17	GROUND WATER	FE-59	<	4.4	
03-May-17	GROUND WATER	CO-60	<	2.1	
03-May-17	GROUND WATER	ZN-65	<	5.8	
03-May-17	GROUND WATER	ZR-NB-95	<	3.2	
03-May-17	GROUND WATER	I-131	<	0.339	
03-May-17	GROUND WATER	CS-134	<	3.0	
03-May-17	GROUND WATER	CS-137	<	3.0	
03-May-17	GROUND WATER	BA-LA-140	<	2.8	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.4	
16-Aug-17	GROUND WATER	CO-58	<	3.8	
16-Aug-17	GROUND WATER	FE-59	<	8.3	
16-Aug-17	GROUND WATER	CO-60	<	4.5	
16-Aug-17	GROUND WATER	ZN-65	<	6.2	
16-Aug-17	GROUND WATER	ZR-NB-95	<	3.7	
16-Aug-17	GROUND WATER	I-131	<	0.297	
16-Aug-17	GROUND WATER	CS-134	<	4.5	
16-Aug-17	GROUND WATER	CS-137	<	4.5	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.3	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	1.7	
07-Nov-17	GROUND WATER	CO-58	<	3.0	
07-Nov-17	GROUND WATER	FE-59	<	5.2	
07-Nov-17	GROUND WATER	CO-60	<	1.2	
07-Nov-17	GROUND WATER	ZN-65	<	4.9	

Exposure Pathway - Waterborne
Ground Water
Location: J-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	3.6	
07-Nov-17	GROUND WATER	I-131	<	0.436	
07-Nov-17	GROUND WATER	CS-134	<	3.4	
07-Nov-17	GROUND WATER	CS-137	<	3.4	
07-Nov-17	GROUND WATER	BA-LA-140	<	4.9	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Ground Water
Location: L-49

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
08-Feb-17	GROUND WATER	MN-54	<	3.0	
08-Feb-17	GROUND WATER	CO-58	<	4.1	
08-Feb-17	GROUND WATER	FE-59	<	6.0	
08-Feb-17	GROUND WATER	CO-60	<	2.0	
08-Feb-17	GROUND WATER	ZN-65	<	6.7	
08-Feb-17	GROUND WATER	ZR-NB-95	<	4.0	
08-Feb-17	GROUND WATER	I-131	<	0.286	
08-Feb-17	GROUND WATER	CS-134	<	4.4	
08-Feb-17	GROUND WATER	CS-137	<	2.7	
08-Feb-17	GROUND WATER	BA-LA-140	<	4.3	
08-Feb-17	GROUND WATER	H-3	<	156.0	
03-May-17	GROUND WATER	MN-54	<	2.0	
03-May-17	GROUND WATER	CO-58	<	3.1	
03-May-17	GROUND WATER	FE-59	<	5.9	
03-May-17	GROUND WATER	CO-60	<	2.6	
03-May-17	GROUND WATER	ZN-65	<	6.0	
03-May-17	GROUND WATER	ZR-NB-95	<	2.2	
03-May-17	GROUND WATER	I-131	<	0.328	
03-May-17	GROUND WATER	CS-134	<	3.7	
03-May-17	GROUND WATER	CS-137	<	2.9	
03-May-17	GROUND WATER	BA-LA-140	<	2.3	
03-May-17	GROUND WATER	H-3	<	148.0	
16-Aug-17	GROUND WATER	MN-54	<	2.8	
16-Aug-17	GROUND WATER	CO-58	<	3.1	
16-Aug-17	GROUND WATER	FE-59	<	2.7	
16-Aug-17	GROUND WATER	CO-60	<	2.3	
16-Aug-17	GROUND WATER	ZN-65	<	2.9	
16-Aug-17	GROUND WATER	ZR-NB-95	<	2.6	
16-Aug-17	GROUND WATER	I-131	<	0.318	
16-Aug-17	GROUND WATER	CS-134	<	2.8	
16-Aug-17	GROUND WATER	CS-137	<	3.1	
16-Aug-17	GROUND WATER	BA-LA-140	<	2.7	
16-Aug-17	GROUND WATER	H-3	<	149.0	
07-Nov-17	GROUND WATER	MN-54	<	2.7	
07-Nov-17	GROUND WATER	CO-58	<	0.9	
07-Nov-17	GROUND WATER	FE-59	<	4.5	
07-Nov-17	GROUND WATER	CO-60	<	2.5	
07-Nov-17	GROUND WATER	ZN-65	<	3.2	

Exposure Pathway - Waterborne
Ground Water
Location: L-49

Collection Date	Sample Description	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
07-Nov-17	GROUND WATER	ZR-NB-95	<	3.3	
07-Nov-17	GROUND WATER	I-131	<	0.343	
07-Nov-17	GROUND WATER	CS-134	<	3.0	
07-Nov-17	GROUND WATER	CS-137	<	2.3	
07-Nov-17	GROUND WATER	BA-LA-140	<	2.8	
07-Nov-17	GROUND WATER	H-3	<	183.0	

Exposure Pathway - Waterborne
Drinking Water
Location: BW-15

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
06-Feb-17	MN-54	< 2.3	
06-Feb-17	CO-58	< 2.2	
06-Feb-17	FE-59	< 3.3	
06-Feb-17	CO-60	< 2.1	
06-Feb-17	ZN-65	< 2.3	
06-Feb-17	ZR-NB-95	< 2.2	
06-Feb-17	I-131	< 0.265	
06-Feb-17	CS-134	< 2.7	
06-Feb-17	CS-137	< 2.7	
06-Feb-17	BA-LA-140	< 2.3	
06-Feb-17	GROSS BETA	2.145 +/- 0.482	
06-Mar-17	MN-54	< 2.4	
06-Mar-17	CO-58	< 1.5	
06-Mar-17	FE-59	< 4.4	
06-Mar-17	CO-60	< 2.8	
06-Mar-17	ZN-65	< 3.7	
06-Mar-17	ZR-NB-95	< 2.7	
06-Mar-17	I-131	< 0.179	
06-Mar-17	CS-134	< 3.1	
06-Mar-17	CS-137	< 2.4	
06-Mar-17	BA-LA-140	< 3.4	
06-Mar-17	GROSS BETA	2.026 +/- 0.623	
05-Apr-17	MN-54	< 2.6	
05-Apr-17	CO-58	< 2.7	
05-Apr-17	FE-59	< 5.7	
05-Apr-17	CO-60	< 2.0	
05-Apr-17	ZN-65	< 3.1	
05-Apr-17	ZR-NB-95	< 1.7	
05-Apr-17	I-131	< 0.479	
05-Apr-17	CS-134	< 2.8	
05-Apr-17	CS-137	< 2.1	
05-Apr-17	BA-LA-140	< 1.8	
05-Apr-17	GROSS BETA	2.100 +/- 0.625	
04-May-17	MN-54	< 2.0	
04-May-17	CO-58	< 4.8	
04-May-17	FE-59	< 5.9	
04-May-17	CO-60	< 2.8	
04-May-17	ZN-65	< 8.8	

Exposure Pathway - Waterborne
Drinking Water
Location: BW-15

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
04-May-17	ZR-NB-95	< 3.3	
04-May-17	I-131	< 0.365	
04-May-17	CS-134	< 4.0	
04-May-17	CS-137	< 3.7	
04-May-17	BA-LA-140	< 5.8	
04-May-17	GROSS BETA	2.122 +/- 0.631	
06-Jun-17	MN-54	< 3.1	
06-Jun-17	CO-58	< 3.9	
06-Jun-17	FE-59	< 6.9	
06-Jun-17	CO-60	< 3.6	
06-Jun-17	ZN-65	< 5.2	
06-Jun-17	ZR-NB-95	< 4.5	
06-Jun-17	I-131	< 0.308	
06-Jun-17	CS-134	< 3.9	
06-Jun-17	CS-137	< 5.5	
06-Jun-17	BA-LA-140	< 2.1	
06-Jun-17	GROSS BETA	1.864 +/- 0.608	
10-Jul-17	MN-54	< 2.6	
10-Jul-17	CO-58	< 2.2	
10-Jul-17	FE-59	< 3.6	
10-Jul-17	CO-60	< 1.5	
10-Jul-17	ZN-65	< 2.5	
10-Jul-17	ZR-NB-95	< 2.9	
10-Jul-17	I-131	< 0.264	
10-Jul-17	CS-134	< 3.3	
10-Jul-17	CS-137	< 2.7	
10-Jul-17	BA-LA-140	< 3.1	
10-Jul-17	GROSS BETA	2.684 +/- 0.667	
09-Aug-17	MN-54	< 3.0	
09-Aug-17	CO-58	< 2.5	
09-Aug-17	FE-59	< 4.9	
09-Aug-17	CO-60	< 2.8	
09-Aug-17	ZN-65	< 3.5	
09-Aug-17	ZR-NB-95	< 3.2	
09-Aug-17	I-131	< 0.473	
09-Aug-17	CS-134	< 3.4	
09-Aug-17	CS-137	< 3.3	
09-Aug-17	BA-LA-140	< 2.3	

Exposure Pathway - Waterborne
Drinking Water
Location: BW-15

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
09-Aug-17	GROSS BETA	2.039 +/- 0.606	
05-Sep-17	MN-54	< 1.8	
05-Sep-17	CO-58	< 1.3	
05-Sep-17	FE-59	< 5.3	
05-Sep-17	CO-60	< 2.1	
05-Sep-17	ZN-65	< 2.9	
05-Sep-17	ZR-NB-95	< 2.7	
05-Sep-17	I-131	< 0.411	
05-Sep-17	CS-134	< 3.1	
05-Sep-17	CS-137	< 2.8	
05-Sep-17	BA-LA-140	< 1.8	
05-Sep-17	GROSS BETA	3.343 +/- 0.713	
02-Oct-17	MN-54	< 3.9	
02-Oct-17	CO-58	< 4.3	
02-Oct-17	FE-59	< 7.2	
02-Oct-17	CO-60	< 4.4	
02-Oct-17	ZN-65	< 6.4	
02-Oct-17	ZR-NB-95	< 3.8	
02-Oct-17	I-131	< 0.455	
02-Oct-17	CS-134	< 4.2	
02-Oct-17	CS-137	< 2.8	
02-Oct-17	BA-LA-140	< 1.9	
02-Oct-17	GROSS BETA	2.793 +/- 0.662	
01-Nov-17	MN-54	< 2.1	
01-Nov-17	CO-58	< 1.9	
01-Nov-17	FE-59	< 5.1	
01-Nov-17	CO-60	< 1.9	
01-Nov-17	ZN-65	< 3.6	
01-Nov-17	ZR-NB-95	< 2.7	
01-Nov-17	I-131	< 0.328	
01-Nov-17	CS-134	< 3.5	
01-Nov-17	CS-137	< 4.2	
01-Nov-17	BA-LA-140	< 3.4	
01-Nov-17	GROSS BETA	2.700 +/- 0.653	
05-Dec-17	MN-54	< 2.6	
05-Dec-17	CO-58	< 2.9	
05-Dec-17	FE-59	< 3.0	
05-Dec-17	CO-60	< 3.0	

Exposure Pathway - Waterborne
Drinking Water
Location: BW-15

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
05-Dec-17	ZN-65	< 4.7	
05-Dec-17	ZR-NB-95	< 3.0	
05-Dec-17	I-131	< 0.295	
05-Dec-17	CS-134	< 3.1	
05-Dec-17	CS-137	< 2.3	
05-Dec-17	BA-LA-140	< 2.8	
05-Dec-17	GROSS BETA	2.806 +/- 0.662	
03-Jan-18	MN-54	< 2.2	
03-Jan-18	CO-58	< 2.5	
03-Jan-18	FE-59	< 5.0	
03-Jan-18	CO-60	< 3.8	
03-Jan-18	ZN-65	< 3.4	
03-Jan-18	ZR-NB-95	< 4.1	
03-Jan-18	I-131	< 0.303	
03-Jan-18	CS-134	< 3.5	
03-Jan-18	CS-137	< 3.8	
03-Jan-18	BA-LA-140	< 2.3	
03-Jan-18	GROSS BETA	2.845 +/- 0.672	

Exposure Pathway - Waterborne
Drinking Water
Location: BW-15 GRAB

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
02-Oct-17	MN-54	< 2.8	
02-Oct-17	CO-58	< 3.6	
02-Oct-17	FE-59	< 4.6	
02-Oct-17	CO-60	< 2.4	
02-Oct-17	ZN-65	< 2.9	
02-Oct-17	ZR-NB-95	< 3.5	
02-Oct-17	I-131	< 0.377	
02-Oct-17	CS-134	< 3.8	
02-Oct-17	CS-137	< 4.5	
02-Oct-17	BA-LA-140	< 1.5	
02-Oct-17	GROSS BETA	2.329 +/- 0.627	

Exposure Pathway - Waterborne
Drinking Water
Location: IO-DW

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
06-Feb-17	MN-54	< 1.4	
06-Feb-17	CO-58	< 2.1	
06-Feb-17	FE-59	< 4.9	
06-Feb-17	CO-60	< 2.6	
06-Feb-17	ZN-65	< 4.2	
06-Feb-17	ZR-NB-95	< 3.0	
06-Feb-17	I-131	< 0.244	
06-Feb-17	CS-134	< 3.1	
06-Feb-17	CS-137	< 3.1	
06-Feb-17	BA-LA-140	< 3.1	
06-Feb-17	GROSS BETA	2.912 +/- 0.543	
06-Mar-17	MN-54	< 2.3	
06-Mar-17	CO-58	< 2.5	
06-Mar-17	FE-59	< 4.3	
06-Mar-17	CO-60	< 2.3	
06-Mar-17	ZN-65	< 2.4	
06-Mar-17	ZR-NB-95	< 2.7	
06-Mar-17	I-131	< 0.199	
06-Mar-17	CS-134	< 2.6	
06-Mar-17	CS-137	< 3.8	
06-Mar-17	BA-LA-140	< 2.4	
06-Mar-17	GROSS BETA	2.345 +/- 0.66	
05-Apr-17	MN-54	< 2.2	
05-Apr-17	CO-58	< 1.5	
05-Apr-17	FE-59	< 3.1	
05-Apr-17	CO-60	< 1.5	
05-Apr-17	ZN-65	< 2.5	
05-Apr-17	ZR-NB-95	< 1.6	
05-Apr-17	I-131	< 0.318	
05-Apr-17	CS-134	< 2.6	
05-Apr-17	CS-137	< 2.8	
05-Apr-17	BA-LA-140	< 1.5	
05-Apr-17	GROSS BETA	3.918 +/- 0.774	
04-May-17	MN-54	< 3.8	
04-May-17	CO-58	< 3.5	
04-May-17	FE-59	< 2.3	
04-May-17	CO-60	< 2.1	
04-May-17	ZN-65	< 5.4	

Exposure Pathway - Waterborne
Drinking Water
Location: IO-DW

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
04-May-17	ZR-NB-95	< 3.9	
04-May-17	I-131	< 0.413	
04-May-17	CS-134	< 3.6	
04-May-17	CS-137	< 2.3	
04-May-17	BA-LA-140	< 1.8	
04-May-17	GROSS BETA	2.141 +/- 0.65	
06-Jun-17	MN-54	< 4.9	
06-Jun-17	CO-58	< 4.7	
06-Jun-17	FE-59	< 7.0	
06-Jun-17	CO-60	< 4.7	
06-Jun-17	ZN-65	< 3.6	
06-Jun-17	ZR-NB-95	< 4.0	
06-Jun-17	I-131	< 0.342	
06-Jun-17	CS-134	< 5.1	
06-Jun-17	CS-137	< 2.3	
06-Jun-17	BA-LA-140	< 6.0	
06-Jun-17	GROSS BETA	3.027 +/- 0.692	
10-Jul-17	MN-54	< 3.3	
10-Jul-17	CO-58	< 2.5	
10-Jul-17	FE-59	< 6.6	
10-Jul-17	CO-60	< 4.5	
10-Jul-17	ZN-65	< 2.2	
10-Jul-17	ZR-NB-95	< 4.1	
10-Jul-17	I-131	< 0.288	
10-Jul-17	CS-134	< 4.3	
10-Jul-17	CS-137	< 4.2	
10-Jul-17	BA-LA-140	< 2.6	
10-Jul-17	GROSS BETA	2.209 +/- 0.67	
09-Aug-17	MN-54	< 2.7	
09-Aug-17	CO-58	< 2.1	
09-Aug-17	FE-59	< 3.0	
09-Aug-17	CO-60	< 3.1	
09-Aug-17	ZN-65	< 5.5	
09-Aug-17	ZR-NB-95	< 3.5	
09-Aug-17	I-131	< 0.412	
09-Aug-17	CS-134	< 2.9	
09-Aug-17	CS-137	< 1.9	
09-Aug-17	BA-LA-140	< 4.6	

Exposure Pathway - Waterborne
Drinking Water
Location: IO-DW

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
09-Aug-17	GROSS BETA	1.850 +/- 0.616	
05-Sep-17	MN-54	< 2.6	
05-Sep-17	CO-58	< 1.3	
05-Sep-17	FE-59	< 4.6	
05-Sep-17	CO-60	< 1.8	
05-Sep-17	ZN-65	< 2.1	
05-Sep-17	ZR-NB-95	< 1.9	
05-Sep-17	I-131	< 0.389	
05-Sep-17	CS-134	< 1.5	
05-Sep-17	CS-137	< 3.1	
05-Sep-17	BA-LA-140	< 1.4	
05-Sep-17	GROSS BETA	2.616 +/- 0.738	
02-Oct-17	MN-54	< 2.9	
02-Oct-17	CO-58	< 2.7	
02-Oct-17	FE-59	< 3.7	
02-Oct-17	CO-60	< 1.2	
02-Oct-17	ZN-65	< 2.6	
02-Oct-17	ZR-NB-95	< 2.4	
02-Oct-17	I-131	< 0.466	
02-Oct-17	CS-134	< 2.7	
02-Oct-17	CS-137	< 3.9	
02-Oct-17	BA-LA-140	< 3.5	
02-Oct-17	GROSS BETA	3.465 +/- 0.711	
01-Nov-17	MN-54	< 2.7	
01-Nov-17	CO-58	< 2.1	
01-Nov-17	FE-59	< 3.2	
01-Nov-17	CO-60	< 1.4	
01-Nov-17	ZN-65	< 3.1	
01-Nov-17	ZR-NB-95	< 3.0	
01-Nov-17	I-131	< 0.499	
01-Nov-17	CS-134	< 3.0	
01-Nov-17	CS-137	< 2.0	
01-Nov-17	BA-LA-140	< 3.1	
01-Nov-17	GROSS BETA	3.117 +/- 0.694	
05-Dec-17	MN-54	< 2.6	
05-Dec-17	CO-58	< 2.8	
05-Dec-17	FE-59	< 3.6	
05-Dec-17	CO-60	< 1.7	

Exposure Pathway - Waterborne
Drinking Water
Location: IO-DW

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
05-Dec-17	ZN-65	< 1.9	
05-Dec-17	ZR-NB-95	< 2.4	
05-Dec-17	I-131	< 0.329	
05-Dec-17	CS-134	< 2.5	
05-Dec-17	CS-137	< 2.7	
05-Dec-17	BA-LA-140	< 1.4	
05-Dec-17	GROSS BETA	3.133 +/- 0.714	
03-Jan-18	MN-54	< 3.3	
03-Jan-18	CO-58	< 3.1	
03-Jan-18	FE-59	< 4.0	
03-Jan-18	CO-60	< 2.0	
03-Jan-18	ZN-65	< 4.1	
03-Jan-18	ZR-NB-95	< 3.3	
03-Jan-18	I-131	< 0.308	
03-Jan-18	CS-134	< 3.4	
03-Jan-18	CS-137	< 3.2	
03-Jan-18	BA-LA-140	< 4.1	
03-Jan-18	GROSS BETA	3.255 +/- 0.713	

Exposure Pathway - Waterborne
Drinking Water
Quarterly Tritium Analysis
Location: BW-15

Collection Date	Nuclide	Concentration (pCi/Liter)		Duplicate Analysis
05-Apr-17	H-3	<	151	
10-Jul-17	H-3	<	183	
02-Oct-17	H-3	<	143	
02-Oct-17	H-3	<	143	Duplicate
03-Jan-18	H-3	<	154	

Exposure Pathway - Waterborne
Drinking Water
Quarterly Tritium Analysis
Location: BW-15 GRAB

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
02-Oct-17	H-3	< 144	

Exposure Pathway - Waterborne
Drinking Water
Quarterly Tritium Analysis
Location: IO-DW

Collection Date	Nuclide	Concentration (pCi/Liter)	Duplicate Analysis
05-Apr-17	H-3	< 151	
10-Jul-17	H-3	< 183	
02-Oct-17	H-3	< 143	
03-Jan-18	H-3	< 154	
03-Jan-18	H-3	< 154	Duplicate

Exposure Pathway - Waterborne
Shoreline Sediment
Location: DC

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	SHORELINE SEDIMENT	K-40	5,911.3 +/-	551.0	
15-May-17	SHORELINE SEDIMENT	MN-54	<	25.9	
15-May-17	SHORELINE SEDIMENT	CO-58	<	30.5	
15-May-17	SHORELINE SEDIMENT	FE-59	<	39.7	
15-May-17	SHORELINE SEDIMENT	CO-60	<	19.6	
15-May-17	SHORELINE SEDIMENT	ZN-65	<	50.7	
15-May-17	SHORELINE SEDIMENT	CS-134	<	17.2	
15-May-17	SHORELINE SEDIMENT	CS-137	<	26.8	
27-Sep-17	SHORELINE SEDIMENT	K-40	6,444.9 +/-	539.0	
27-Sep-17	SHORELINE SEDIMENT	MN-54	<	14.8	
27-Sep-17	SHORELINE SEDIMENT	CO-58	<	22.3	
27-Sep-17	SHORELINE SEDIMENT	FE-59	<	54.9	
27-Sep-17	SHORELINE SEDIMENT	CO-60	<	20.6	
27-Sep-17	SHORELINE SEDIMENT	ZN-65	<	40.7	
27-Sep-17	SHORELINE SEDIMENT	CS-134	<	18.5	
27-Sep-17	SHORELINE SEDIMENT	CS-137	<	16.5	

Exposure Pathway - Waterborne
Shoreline Sediment
Location: EEA

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
25-Aug-17	SHORELINE SEDIMENT	K-40	11,355.0 +/-	598.6	
25-Aug-17	SHORELINE SEDIMENT	MN-54	<	25.5	
25-Aug-17	SHORELINE SEDIMENT	CO-58	<	17.4	
25-Aug-17	SHORELINE SEDIMENT	FE-59	<	53.0	
25-Aug-17	SHORELINE SEDIMENT	CO-60	<	19.0	
25-Aug-17	SHORELINE SEDIMENT	ZN-65	<	61.7	
25-Aug-17	SHORELINE SEDIMENT	CS-134	<	19.2	
25-Aug-17	SHORELINE SEDIMENT	CS-137	217.7 +/-	33.0	

Exposure Pathway - Waterborne
Shoreline Sediment
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	SHORELINE SEDIMENT	K-40	10,753.0 +/-	691.8	
15-May-17	SHORELINE SEDIMENT	K-40	11,436.0 +/-	686.8	Duplicate
15-May-17	SHORELINE SEDIMENT	MN-54	<	26.5	
15-May-17	SHORELINE SEDIMENT	MN-54	<	32.3	Duplicate
15-May-17	SHORELINE SEDIMENT	CO-58	<	26.0	
15-May-17	SHORELINE SEDIMENT	CO-58	<	30.2	Duplicate
15-May-17	SHORELINE SEDIMENT	FE-59	<	67.2	Duplicate
15-May-17	SHORELINE SEDIMENT	FE-59	<	50.1	
15-May-17	SHORELINE SEDIMENT	CO-60	<	19.2	
15-May-17	SHORELINE SEDIMENT	CO-60	<	16.0	Duplicate
15-May-17	SHORELINE SEDIMENT	ZN-65	<	50.0	Duplicate
15-May-17	SHORELINE SEDIMENT	ZN-65	<	43.7	
15-May-17	SHORELINE SEDIMENT	CS-134	<	18.7	
15-May-17	SHORELINE SEDIMENT	CS-134	<	26.8	Duplicate
15-May-17	SHORELINE SEDIMENT	CS-137	143.5 +/-	33.3	Duplicate
15-May-17	SHORELINE SEDIMENT	CS-137	137.8 +/-	28.8	
27-Sep-17	SHORELINE SEDIMENT	K-40	8,267.7 +/-	555.3	
27-Sep-17	SHORELINE SEDIMENT	K-40	7,532.4 +/-	519.2	Duplicate
27-Sep-17	SHORELINE SEDIMENT	MN-54	<	25.3	Duplicate
27-Sep-17	SHORELINE SEDIMENT	MN-54	<	19.1	
27-Sep-17	SHORELINE SEDIMENT	CO-58	<	28.3	
27-Sep-17	SHORELINE SEDIMENT	CO-58	<	23.6	Duplicate
27-Sep-17	SHORELINE SEDIMENT	FE-59	<	78.6	
27-Sep-17	SHORELINE SEDIMENT	FE-59	<	40.4	Duplicate
27-Sep-17	SHORELINE SEDIMENT	CO-60	<	18.5	Duplicate
27-Sep-17	SHORELINE SEDIMENT	CO-60	<	20.3	
27-Sep-17	SHORELINE SEDIMENT	ZN-65	<	43.5	Duplicate
27-Sep-17	SHORELINE SEDIMENT	ZN-65	<	45.5	
27-Sep-17	SHORELINE SEDIMENT	CS-134	<	14.2	Duplicate
27-Sep-17	SHORELINE SEDIMENT	CS-134	<	18.3	
27-Sep-17	SHORELINE SEDIMENT	CS-137	<	18.4	Duplicate
27-Sep-17	SHORELINE SEDIMENT	CS-137	<	17.4	

Exposure Pathway - Waterborne
Shoreline Sediment
Location: SC

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
16-Jun-17	SHORELINE SEDIMENT	K-40	11,203.0 +/-	684.5	
16-Jun-17	SHORELINE SEDIMENT	K-40	11,855.0 +/-	641.7	Duplicate
16-Jun-17	SHORELINE SEDIMENT	MN-54	<	29.0	Duplicate
16-Jun-17	SHORELINE SEDIMENT	MN-54	<	25.7	
16-Jun-17	SHORELINE SEDIMENT	CO-58	<	23.1	Duplicate
16-Jun-17	SHORELINE SEDIMENT	CO-58	<	21.8	
16-Jun-17	SHORELINE SEDIMENT	FE-59	<	66.8	
16-Jun-17	SHORELINE SEDIMENT	FE-59	<	50.3	Duplicate
16-Jun-17	SHORELINE SEDIMENT	CO-60	<	16.9	
16-Jun-17	SHORELINE SEDIMENT	CO-60	<	19.0	Duplicate
16-Jun-17	SHORELINE SEDIMENT	ZN-65	<	43.5	
16-Jun-17	SHORELINE SEDIMENT	ZN-65	<	62.8	Duplicate
16-Jun-17	SHORELINE SEDIMENT	CS-134	<	21.9	Duplicate
16-Jun-17	SHORELINE SEDIMENT	CS-134	<	20.0	
16-Jun-17	SHORELINE SEDIMENT	CS-137	<	16.7	
16-Jun-17	SHORELINE SEDIMENT	CS-137	<	19.8	Duplicate

Exposure Pathway - Ingestion
Fish
Location: CCL

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-Mar-17	CHANNEL CATFISH	K-40	3,802.8 +/-	498.6	
30-Mar-17	CHANNEL CATFISH	MN-54	<	21.2	
30-Mar-17	CHANNEL CATFISH	CO-58	<	14.6	
30-Mar-17	CHANNEL CATFISH	FE-59	<	24.7	
30-Mar-17	CHANNEL CATFISH	CO-60	<	12.3	
30-Mar-17	CHANNEL CATFISH	ZN-65	<	25.9	
30-Mar-17	CHANNEL CATFISH	I-131	<	32.4	
30-Mar-17	CHANNEL CATFISH	CS-134	<	21.2	
30-Mar-17	CHANNEL CATFISH	CS-137	<	10.4	
30-Mar-17	CHANNEL CATFISH	H-3	6,895.0 +/-	226.0	
30-Mar-17	COMMON CARP	K-40	2,461.2 +/-	413.5	
30-Mar-17	COMMON CARP	K-40	3,018.1 +/-	406.4	Duplicate
30-Mar-17	COMMON CARP	MN-54	<	9.2	
30-Mar-17	COMMON CARP	MN-54	<	18.7	Duplicate
30-Mar-17	COMMON CARP	CO-58	<	11.0	
30-Mar-17	COMMON CARP	CO-58	<	19.7	Duplicate
30-Mar-17	COMMON CARP	FE-59	<	26.2	Duplicate
30-Mar-17	COMMON CARP	FE-59	<	18.8	
30-Mar-17	COMMON CARP	CO-60	<	13.2	Duplicate
30-Mar-17	COMMON CARP	CO-60	<	9.5	
30-Mar-17	COMMON CARP	ZN-65	<	21.6	
30-Mar-17	COMMON CARP	ZN-65	<	41.7	Duplicate
30-Mar-17	COMMON CARP	I-131	<	18.1	
30-Mar-17	COMMON CARP	I-131	<	18.0	Duplicate
30-Mar-17	COMMON CARP	CS-134	<	14.6	
30-Mar-17	COMMON CARP	CS-134	<	18.2	Duplicate
30-Mar-17	COMMON CARP	CS-137	<	13.4	Duplicate
30-Mar-17	COMMON CARP	CS-137	<	11.0	
30-Mar-17	COMMON CARP	H-3	4,470.0 +/-	179.0	
30-Mar-17	COMMON CARP	H-3	5,217.0 +/-	193.0	Duplicate
30-Mar-17	FRESHWATER DRUM	K-40	4,566.5 +/-	742.2	
30-Mar-17	FRESHWATER DRUM	MN-54	<	15.2	
30-Mar-17	FRESHWATER DRUM	CO-58	<	24.3	
30-Mar-17	FRESHWATER DRUM	FE-59	<	25.7	
30-Mar-17	FRESHWATER DRUM	CO-60	<	23.9	
30-Mar-17	FRESHWATER DRUM	ZN-65	<	51.3	
30-Mar-17	FRESHWATER DRUM	I-131	<	33.3	
30-Mar-17	FRESHWATER DRUM	CS-134	<	25.9	

Exposure Pathway - Ingestion
Fish
Location: CCL

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-Mar-17	FRESHWATER DRUM	CS-137	<	15.7	
30-Mar-17	FRESHWATER DRUM	H-3	6,691.0 +/-	216.0	
30-Mar-17	RIVER CARPSUCKER	K-40	3,176.4 +/-	498.5	
30-Mar-17	RIVER CARPSUCKER	MN-54	<	12.3	
30-Mar-17	RIVER CARPSUCKER	CO-58	<	13.0	
30-Mar-17	RIVER CARPSUCKER	FE-59	<	28.5	
30-Mar-17	RIVER CARPSUCKER	CO-60	<	14.0	
30-Mar-17	RIVER CARPSUCKER	ZN-65	<	22.1	
30-Mar-17	RIVER CARPSUCKER	I-131	<	21.7	
30-Mar-17	RIVER CARPSUCKER	CS-134	<	20.1	
30-Mar-17	RIVER CARPSUCKER	CS-137	<	11.1	
30-Mar-17	RIVER CARPSUCKER	H-3	4,067.0 +/-	176.0	
30-Mar-17	SMALLMOUTH BUFFALO	K-40	3,184.9 +/-	428.3	
30-Mar-17	SMALLMOUTH BUFFALO	MN-54	<	15.7	
30-Mar-17	SMALLMOUTH BUFFALO	CO-58	<	16.4	
30-Mar-17	SMALLMOUTH BUFFALO	FE-59	<	31.2	
30-Mar-17	SMALLMOUTH BUFFALO	CO-60	<	16.0	
30-Mar-17	SMALLMOUTH BUFFALO	ZN-65	<	35.9	
30-Mar-17	SMALLMOUTH BUFFALO	I-131	<	31.4	
30-Mar-17	SMALLMOUTH BUFFALO	CS-134	<	19.1	
30-Mar-17	SMALLMOUTH BUFFALO	CS-137	<	10.2	
30-Mar-17	SMALLMOUTH BUFFALO	H-3	5,118.0 +/-	196.0	
30-Mar-17	WHITE BASS	K-40	3,474.0 +/-	461.2	
30-Mar-17	WHITE BASS	MN-54	<	14.6	
30-Mar-17	WHITE BASS	CO-58	<	17.1	
30-Mar-17	WHITE BASS	FE-59	<	19.1	
30-Mar-17	WHITE BASS	CO-60	<	15.3	
30-Mar-17	WHITE BASS	ZN-65	<	24.8	
30-Mar-17	WHITE BASS	I-131	<	28.9	
30-Mar-17	WHITE BASS	CS-134	<	19.4	
30-Mar-17	WHITE BASS	CS-137	<	22.2	
30-Mar-17	WHITE BASS	H-3	5,125.0 +/-	195.0	
07-Aug-17	BLUE CATFISH	K-40	3,435.8 +/-	381.6	
07-Aug-17	BLUE CATFISH	MN-54	<	14.7	
07-Aug-17	BLUE CATFISH	CO-58	<	17.4	
07-Aug-17	BLUE CATFISH	FE-59	<	25.1	
07-Aug-17	BLUE CATFISH	CO-60	<	11.8	
07-Aug-17	BLUE CATFISH	ZN-65	<	27.5	

Exposure Pathway - Ingestion
Fish
Location: CCL

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
07-Aug-17	BLUE CATFISH	I-131	<	35.1	
07-Aug-17	BLUE CATFISH	CS-134	<	15.7	
07-Aug-17	BLUE CATFISH	CS-137	<	21.4	
07-Aug-17	BLUE CATFISH	H-3	5,132.0 +/-	203.0	
07-Aug-17	BLUE CATFISH (BONES)	SR-89	<	142.8	
07-Aug-17	BLUE CATFISH (BONES)	SR-90	194.6 +/-	58.3	
31-Oct-17	BLUE CATFISH	K-40	3,177.2 +/-	439.9	
31-Oct-17	BLUE CATFISH	MN-54	<	12.4	
31-Oct-17	BLUE CATFISH	CO-58	<	12.1	
31-Oct-17	BLUE CATFISH	FE-59	<	21.4	
31-Oct-17	BLUE CATFISH	CO-60	<	13.3	
31-Oct-17	BLUE CATFISH	ZN-65	<	34.4	
31-Oct-17	BLUE CATFISH	I-131	<	19.7	
31-Oct-17	BLUE CATFISH	CS-134	<	13.3	
31-Oct-17	BLUE CATFISH	CS-137	<	8.1	
31-Oct-17	BLUE CATFISH	H-3	7,021.0 +/-	226.0	
31-Oct-17	CHANNEL CATFISH	K-40	3,110.5 +/-	437.8	
31-Oct-17	CHANNEL CATFISH	MN-54	<	17.8	
31-Oct-17	CHANNEL CATFISH	CO-58	<	16.3	
31-Oct-17	CHANNEL CATFISH	FE-59	<	20.8	
31-Oct-17	CHANNEL CATFISH	CO-60	<	14.2	
31-Oct-17	CHANNEL CATFISH	ZN-65	<	19.8	
31-Oct-17	CHANNEL CATFISH	I-131	<	38.4	
31-Oct-17	CHANNEL CATFISH	CS-134	<	18.6	
31-Oct-17	CHANNEL CATFISH	CS-137	<	22.5	
31-Oct-17	CHANNEL CATFISH	H-3	7,072.0 +/-	229.0	
31-Oct-17	WALLEYE	K-40	3,883.6 +/-	432.1	
31-Oct-17	WALLEYE	MN-54	<	15.8	
31-Oct-17	WALLEYE	CO-58	<	15.9	
31-Oct-17	WALLEYE	FE-59	<	32.1	
31-Oct-17	WALLEYE	CO-60	<	14.9	
31-Oct-17	WALLEYE	ZN-65	<	30.7	
31-Oct-17	WALLEYE	I-131	<	35.8	
31-Oct-17	WALLEYE	CS-134	<	16.1	
31-Oct-17	WALLEYE	CS-137	<	16.7	
31-Oct-17	WALLEYE	H-3	6,964.0 +/-	224.0	
31-Oct-17	WHITE BASS	K-40	3,125.6 +/-	416.3	
31-Oct-17	WHITE BASS	MN-54	<	10.6	

Exposure Pathway - Ingestion
Fish
Location: CCL

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
31-Oct-17	WHITE BASS	CO-58	<	9.6	
31-Oct-17	WHITE BASS	FE-59	<	20.0	
31-Oct-17	WHITE BASS	CO-60	<	17.4	
31-Oct-17	WHITE BASS	ZN-65	<	18.6	
31-Oct-17	WHITE BASS	I-131	<	16.6	
31-Oct-17	WHITE BASS	CS-134	<	12.1	
31-Oct-17	WHITE BASS	CS-137	<	10.7	
31-Oct-17	WHITE BASS	H-3	7,724.0 +/-	234.0	
31-Oct-17	WHITE CRAPPIE	K-40	3,849.6 +/-	469.6	
31-Oct-17	WHITE CRAPPIE	MN-54	<	13.3	
31-Oct-17	WHITE CRAPPIE	CO-58	<	11.0	
31-Oct-17	WHITE CRAPPIE	FE-59	<	23.3	
31-Oct-17	WHITE CRAPPIE	CO-60	<	20.3	
31-Oct-17	WHITE CRAPPIE	ZN-65	<	21.7	
31-Oct-17	WHITE CRAPPIE	I-131	<	20.9	
31-Oct-17	WHITE CRAPPIE	CS-134	<	14.2	
31-Oct-17	WHITE CRAPPIE	CS-137	<	13.2	
31-Oct-17	WHITE CRAPPIE	H-3	6,805.0 +/-	223.0	

Exposure Pathway - Ingestion
Fish
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
24-Apr-17	BIGMOUTH BUFFALO	K-40	2,876.2 +/-	300.4	
24-Apr-17	BIGMOUTH BUFFALO	MN-54	<	10.4	
24-Apr-17	BIGMOUTH BUFFALO	CO-58	<	11.5	
24-Apr-17	BIGMOUTH BUFFALO	FE-59	<	13.8	
24-Apr-17	BIGMOUTH BUFFALO	CO-60	<	10.1	
24-Apr-17	BIGMOUTH BUFFALO	ZN-65	<	22.6	
24-Apr-17	BIGMOUTH BUFFALO	I-131	<	35.6	
24-Apr-17	BIGMOUTH BUFFALO	CS-134	<	11.9	
24-Apr-17	BIGMOUTH BUFFALO	CS-137	<	14.1	
24-Apr-17	BIGMOUTH BUFFALO	H-3	<	114.0	
24-Apr-17	BLUE CATFISH	K-40	3,296.8 +/-	290.9	
24-Apr-17	BLUE CATFISH	MN-54	<	12.1	
24-Apr-17	BLUE CATFISH	CO-58	<	11.7	
24-Apr-17	BLUE CATFISH	FE-59	<	23.9	
24-Apr-17	BLUE CATFISH	CO-60	<	8.3	
24-Apr-17	BLUE CATFISH	ZN-65	<	22.7	
24-Apr-17	BLUE CATFISH	I-131	<	24.9	
24-Apr-17	BLUE CATFISH	CS-134	<	11.4	
24-Apr-17	BLUE CATFISH	CS-137	<	12.0	
24-Apr-17	BLUE CATFISH	H-3	<	124.0	
24-Apr-17	CHANNEL CATFISH	K-40	3,337.6 +/-	325.8	
24-Apr-17	CHANNEL CATFISH	MN-54	<	10.0	
24-Apr-17	CHANNEL CATFISH	CO-58	<	9.0	
24-Apr-17	CHANNEL CATFISH	FE-59	<	17.2	
24-Apr-17	CHANNEL CATFISH	CO-60	<	10.2	
24-Apr-17	CHANNEL CATFISH	ZN-65	<	15.6	
24-Apr-17	CHANNEL CATFISH	I-131	<	43.8	
24-Apr-17	CHANNEL CATFISH	CS-134	<	11.0	
24-Apr-17	CHANNEL CATFISH	CS-137	<	12.8	
24-Apr-17	CHANNEL CATFISH	H-3	<	115.0	
24-Apr-17	COMMON CARP	K-40	3,150.9 +/-	396.1	
24-Apr-17	COMMON CARP	MN-54	<	16.8	
24-Apr-17	COMMON CARP	CO-58	<	14.1	
24-Apr-17	COMMON CARP	FE-59	<	34.1	
24-Apr-17	COMMON CARP	CO-60	<	11.5	
24-Apr-17	COMMON CARP	ZN-65	<	24.2	
24-Apr-17	COMMON CARP	I-131	<	27.7	
24-Apr-17	COMMON CARP	CS-134	<	10.8	

Exposure Pathway - Ingestion
Fish
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
24-Apr-17	COMMON CARP	CS-137	<	14.4	
24-Apr-17	COMMON CARP	H-3	<	119.0	
24-Apr-17	FRESHWATER DRUM	K-40	3,261.3 +/-	314.6	
24-Apr-17	FRESHWATER DRUM	MN-54	<	10.3	
24-Apr-17	FRESHWATER DRUM	CO-58	<	13.3	
24-Apr-17	FRESHWATER DRUM	FE-59	<	22.3	
24-Apr-17	FRESHWATER DRUM	CO-60	<	11.8	
24-Apr-17	FRESHWATER DRUM	ZN-65	<	12.7	
24-Apr-17	FRESHWATER DRUM	I-131	<	47.7	
24-Apr-17	FRESHWATER DRUM	CS-134	<	11.5	
24-Apr-17	FRESHWATER DRUM	CS-137	<	9.8	
24-Apr-17	FRESHWATER DRUM	H-3	<	121.0	
24-Apr-17	LARGEMOUTH BASS	K-40	3,273.3 +/-	316.9	
24-Apr-17	LARGEMOUTH BASS	MN-54	<	10.3	
24-Apr-17	LARGEMOUTH BASS	CO-58	<	10.2	
24-Apr-17	LARGEMOUTH BASS	FE-59	<	18.3	
24-Apr-17	LARGEMOUTH BASS	CO-60	<	12.0	
24-Apr-17	LARGEMOUTH BASS	ZN-65	<	14.2	
24-Apr-17	LARGEMOUTH BASS	I-131	<	29.6	
24-Apr-17	LARGEMOUTH BASS	CS-134	<	11.3	
24-Apr-17	LARGEMOUTH BASS	CS-137	<	12.2	
24-Apr-17	LARGEMOUTH BASS	H-3	<	120.0	
24-Apr-17	RIVER CARPSUCKER	K-40	3,100.1 +/-	319.2	
24-Apr-17	RIVER CARPSUCKER	MN-54	<	10.4	
24-Apr-17	RIVER CARPSUCKER	CO-58	<	11.0	
24-Apr-17	RIVER CARPSUCKER	FE-59	<	32.4	
24-Apr-17	RIVER CARPSUCKER	CO-60	<	10.9	
24-Apr-17	RIVER CARPSUCKER	ZN-65	<	17.7	
24-Apr-17	RIVER CARPSUCKER	I-131	<	43.5	
24-Apr-17	RIVER CARPSUCKER	CS-134	<	11.3	
24-Apr-17	RIVER CARPSUCKER	CS-137	<	11.6	
24-Apr-17	RIVER CARPSUCKER	H-3	<	115.0	
24-Apr-17	SMALLMOUTH BUFFALO	K-40	3,327.2 +/-	352.0	
24-Apr-17	SMALLMOUTH BUFFALO	MN-54	<	7.4	
24-Apr-17	SMALLMOUTH BUFFALO	CO-58	<	10.1	
24-Apr-17	SMALLMOUTH BUFFALO	FE-59	<	31.9	
24-Apr-17	SMALLMOUTH BUFFALO	CO-60	<	10.8	
24-Apr-17	SMALLMOUTH BUFFALO	ZN-65	<	15.6	

Exposure Pathway - Ingestion
Fish
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
24-Apr-17	SMALLMOUTH BUFFALO	I-131	<	28.0	
24-Apr-17	SMALLMOUTH BUFFALO	CS-134	<	14.4	
24-Apr-17	SMALLMOUTH BUFFALO	CS-137	<	13.9	
24-Apr-17	SMALLMOUTH BUFFALO	H-3	<	122.0	
24-Apr-17	WHITE CRAPPIE	K-40	3,356.1 +/-	341.1	
24-Apr-17	WHITE CRAPPIE	K-40	3,353.8 +/-	369.6	Duplicate
24-Apr-17	WHITE CRAPPIE	MN-54	<	12.1	Duplicate
24-Apr-17	WHITE CRAPPIE	MN-54	<	11.5	
24-Apr-17	WHITE CRAPPIE	CO-58	<	9.9	Duplicate
24-Apr-17	WHITE CRAPPIE	CO-58	<	10.8	
24-Apr-17	WHITE CRAPPIE	FE-59	<	36.5	Duplicate
24-Apr-17	WHITE CRAPPIE	FE-59	<	24.6	
24-Apr-17	WHITE CRAPPIE	CO-60	<	8.0	Duplicate
24-Apr-17	WHITE CRAPPIE	CO-60	<	10.2	
24-Apr-17	WHITE CRAPPIE	ZN-65	<	28.1	
24-Apr-17	WHITE CRAPPIE	ZN-65	<	20.5	Duplicate
24-Apr-17	WHITE CRAPPIE	I-131	<	33.5	
24-Apr-17	WHITE CRAPPIE	I-131	<	51.5	Duplicate
24-Apr-17	WHITE CRAPPIE	CS-134	<	14.0	Duplicate
24-Apr-17	WHITE CRAPPIE	CS-134	<	13.3	
24-Apr-17	WHITE CRAPPIE	CS-137	<	12.4	
24-Apr-17	WHITE CRAPPIE	CS-137	<	12.9	Duplicate
24-Apr-17	WHITE CRAPPIE	H-3	<	120.0	Duplicate
24-Apr-17	WHITE CRAPPIE	H-3	<	120.0	
10-Oct-17	BASS	K-40	3,196.4 +/-	430.9	
10-Oct-17	BASS	MN-54	<	12.8	
10-Oct-17	BASS	CO-58	<	10.0	
10-Oct-17	BASS	FE-59	<	29.0	
10-Oct-17	BASS	CO-60	<	10.3	
10-Oct-17	BASS	ZN-65	<	23.4	
10-Oct-17	BASS	I-131	<	35.5	
10-Oct-17	BASS	CS-134	<	15.7	
10-Oct-17	BASS	CS-137	<	11.9	
10-Oct-17	BASS	H-3	<	121.0	
10-Oct-17	BIGMOUTH BUFFALO	K-40	2,832.8 +/-	413.1	
10-Oct-17	BIGMOUTH BUFFALO	MN-54	<	12.6	
10-Oct-17	BIGMOUTH BUFFALO	CO-58	<	10.5	
10-Oct-17	BIGMOUTH BUFFALO	FE-59	<	25.4	

Exposure Pathway - Ingestion
Fish
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
10-Oct-17	BIGMOUTH BUFFALO	CO-60	<	17.2	
10-Oct-17	BIGMOUTH BUFFALO	ZN-65	<	27.6	
10-Oct-17	BIGMOUTH BUFFALO	I-131	<	32.1	
10-Oct-17	BIGMOUTH BUFFALO	CS-134	<	14.4	
10-Oct-17	BIGMOUTH BUFFALO	CS-137	<	14.1	
10-Oct-17	BIGMOUTH BUFFALO	H-3	<	127.0	
10-Oct-17	CHANNEL CATFISH	K-40	3,692.2 +/-	462.4	
10-Oct-17	CHANNEL CATFISH	MN-54	<	9.9	
10-Oct-17	CHANNEL CATFISH	CO-58	<	10.3	
10-Oct-17	CHANNEL CATFISH	FE-59	<	28.5	
10-Oct-17	CHANNEL CATFISH	CO-60	<	16.0	
10-Oct-17	CHANNEL CATFISH	ZN-65	<	24.2	
10-Oct-17	CHANNEL CATFISH	I-131	<	39.9	
10-Oct-17	CHANNEL CATFISH	CS-134	<	12.0	
10-Oct-17	CHANNEL CATFISH	CS-137	<	14.0	
10-Oct-17	CHANNEL CATFISH	H-3	<	123.0	
10-Oct-17	COMMON CARP	K-40	3,132.3 +/-	450.8	
10-Oct-17	COMMON CARP	MN-54	<	11.8	
10-Oct-17	COMMON CARP	CO-58	<	20.9	
10-Oct-17	COMMON CARP	FE-59	<	46.9	
10-Oct-17	COMMON CARP	CO-60	<	14.7	
10-Oct-17	COMMON CARP	ZN-65	<	32.2	
10-Oct-17	COMMON CARP	I-131	<	53.1	
10-Oct-17	COMMON CARP	CS-134	<	17.1	
10-Oct-17	COMMON CARP	CS-137	<	16.9	
10-Oct-17	COMMON CARP	H-3	<	123.0	
10-Oct-17	CRAPPIE	K-40	3,485.1 +/-	462.7	
10-Oct-17	CRAPPIE	MN-54	<	15.2	
10-Oct-17	CRAPPIE	CO-58	<	11.8	
10-Oct-17	CRAPPIE	FE-59	<	25.1	
10-Oct-17	CRAPPIE	CO-60	<	18.2	
10-Oct-17	CRAPPIE	ZN-65	<	29.2	
10-Oct-17	CRAPPIE	I-131	<	38.2	
10-Oct-17	CRAPPIE	CS-134	<	17.5	
10-Oct-17	CRAPPIE	CS-137	<	13.7	
10-Oct-17	CRAPPIE	H-3	<	123.0	
10-Oct-17	FRESHWATER DRUM	K-40	3,659.0 +/-	460.8	
10-Oct-17	FRESHWATER DRUM	MN-54	<	11.7	

Exposure Pathway - Ingestion
Fish
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
10-Oct-17	FRESHWATER DRUM	CO-58	<	14.6	
10-Oct-17	FRESHWATER DRUM	FE-59	<	20.9	
10-Oct-17	FRESHWATER DRUM	CO-60	<	14.8	
10-Oct-17	FRESHWATER DRUM	ZN-65	<	22.4	
10-Oct-17	FRESHWATER DRUM	I-131	<	29.3	
10-Oct-17	FRESHWATER DRUM	CS-134	<	14.2	
10-Oct-17	FRESHWATER DRUM	CS-137	<	14.8	
10-Oct-17	FRESHWATER DRUM	H-3	<	121.0	
10-Oct-17	SMALLMOUTH BUFFALO	K-40	3,446.8 +/-	470.3	
10-Oct-17	SMALLMOUTH BUFFALO	MN-54	<	15.5	
10-Oct-17	SMALLMOUTH BUFFALO	CO-58	<	13.7	
10-Oct-17	SMALLMOUTH BUFFALO	FE-59	<	27.6	
10-Oct-17	SMALLMOUTH BUFFALO	CO-60	<	13.2	
10-Oct-17	SMALLMOUTH BUFFALO	ZN-65	<	23.6	
10-Oct-17	SMALLMOUTH BUFFALO	I-131	<	34.0	
10-Oct-17	SMALLMOUTH BUFFALO	CS-134	<	12.5	
10-Oct-17	SMALLMOUTH BUFFALO	CS-137	<	15.1	
10-Oct-17	SMALLMOUTH BUFFALO	H-3	<	120.0	
25-Oct-17	BLUE CATFISH (BONES)	SR-90	<	160.2	
25-Oct-17	BLUE CATFISH (BONES)	SR-89	<	252.7	

Exposure Pathway - Ingestion
Food/Garden
Location: A-3

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-May-17	HORSERADISH LEAVES	BE-7	1,013.1	+/- 182.4	
30-May-17	HORSERADISH LEAVES	K-40	5,987.5	+/- 470.1	
30-May-17	HORSERADISH LEAVES	MN-54	<	15.5	
30-May-17	HORSERADISH LEAVES	CO-58	<	15.2	
30-May-17	HORSERADISH LEAVES	FE-59	<	20.6	
30-May-17	HORSERADISH LEAVES	CO-60	<	11.7	
30-May-17	HORSERADISH LEAVES	ZN-65	<	15.7	
30-May-17	HORSERADISH LEAVES	ZR-NB-95	<	13.6	
30-May-17	HORSERADISH LEAVES	I-131	<	37.3	
30-May-17	HORSERADISH LEAVES	CS-134	<	15.7	
30-May-17	HORSERADISH LEAVES	CS-137	<	17.6	
19-Jun-17	HORSERADISH LEAVES	BE-7	1,376.2	+/- 107.9	
19-Jun-17	HORSERADISH LEAVES	K-40	5,435.9	+/- 212.6	
19-Jun-17	HORSERADISH LEAVES	MN-54	<	7.9	
19-Jun-17	HORSERADISH LEAVES	CO-58	<	8.1	
19-Jun-17	HORSERADISH LEAVES	FE-59	<	16.0	
19-Jun-17	HORSERADISH LEAVES	CO-60	<	6.1	
19-Jun-17	HORSERADISH LEAVES	ZN-65	<	15.3	
19-Jun-17	HORSERADISH LEAVES	ZR-NB-95	<	7.3	
19-Jun-17	HORSERADISH LEAVES	I-131	<	17.0	
19-Jun-17	HORSERADISH LEAVES	CS-134	<	7.3	
19-Jun-17	HORSERADISH LEAVES	CS-137	<	9.2	
17-Jul-17	HORSERADISH LEAVES	BE-7	792.6	+/- 98.9	
17-Jul-17	HORSERADISH LEAVES	K-40	5,934.0	+/- 284.2	
17-Jul-17	HORSERADISH LEAVES	MN-54	<	9.3	
17-Jul-17	HORSERADISH LEAVES	CO-58	<	9.0	
17-Jul-17	HORSERADISH LEAVES	FE-59	<	21.4	
17-Jul-17	HORSERADISH LEAVES	CO-60	<	9.0	
17-Jul-17	HORSERADISH LEAVES	ZN-65	<	20.2	
17-Jul-17	HORSERADISH LEAVES	ZR-NB-95	<	8.8	
17-Jul-17	HORSERADISH LEAVES	I-131	<	23.3	
17-Jul-17	HORSERADISH LEAVES	CS-134	<	8.4	
17-Jul-17	HORSERADISH LEAVES	CS-137	<	8.0	

Exposure Pathway - Ingestion
Food/Garden
Location: B-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-May-17	HORSERADISH LEAVES	BE-7	1,972.9 +/-	282.3	
30-May-17	HORSERADISH LEAVES	K-40	8,365.7 +/-	563.6	
30-May-17	HORSERADISH LEAVES	MN-54	<	19.1	
30-May-17	HORSERADISH LEAVES	CO-58	<	11.9	
30-May-17	HORSERADISH LEAVES	FE-59	<	25.8	
30-May-17	HORSERADISH LEAVES	CO-60	<	15.0	
30-May-17	HORSERADISH LEAVES	ZN-65	<	22.5	
30-May-17	HORSERADISH LEAVES	ZR-NB-95	<	17.1	
30-May-17	HORSERADISH LEAVES	I-131	<	31.1	
30-May-17	HORSERADISH LEAVES	CS-134	<	17.2	
30-May-17	HORSERADISH LEAVES	CS-137	<	18.5	
14-Aug-17	HORSERADISH LEAVES	BE-7	697.7 +/-	132.9	
14-Aug-17	HORSERADISH LEAVES	K-40	5,754.1 +/-	381.5	
14-Aug-17	HORSERADISH LEAVES	MN-54	<	12.4	
14-Aug-17	HORSERADISH LEAVES	CO-58	<	11.0	
14-Aug-17	HORSERADISH LEAVES	FE-59	<	23.4	
14-Aug-17	HORSERADISH LEAVES	CO-60	<	10.8	
14-Aug-17	HORSERADISH LEAVES	ZN-65	<	25.7	
14-Aug-17	HORSERADISH LEAVES	ZR-NB-95	<	13.5	
14-Aug-17	HORSERADISH LEAVES	I-131	<	32.0	
14-Aug-17	HORSERADISH LEAVES	CS-134	<	10.1	
14-Aug-17	HORSERADISH LEAVES	CS-137	<	10.9	
14-Sep-17	HORSERADISH LEAVES	BE-7	<	208.6	
14-Sep-17	HORSERADISH LEAVES	K-40	5,508.1 +/-	487.8	
14-Sep-17	HORSERADISH LEAVES	MN-54	<	15.7	
14-Sep-17	HORSERADISH LEAVES	CO-58	<	16.8	
14-Sep-17	HORSERADISH LEAVES	FE-59	<	40.2	
14-Sep-17	HORSERADISH LEAVES	CO-60	<	17.0	
14-Sep-17	HORSERADISH LEAVES	ZN-65	<	26.4	
14-Sep-17	HORSERADISH LEAVES	ZR-NB-95	<	17.1	
14-Sep-17	HORSERADISH LEAVES	I-131	<	32.1	
14-Sep-17	HORSERADISH LEAVES	CS-134	<	14.9	
14-Sep-17	HORSERADISH LEAVES	CS-137	<	12.2	
17-Oct-17	HORSERADISH LEAVES	BE-7	765.4 +/-	197.2	
17-Oct-17	HORSERADISH LEAVES	K-40	5,538.4 +/-	525.2	
17-Oct-17	HORSERADISH LEAVES	MN-54	<	14.4	
17-Oct-17	HORSERADISH LEAVES	CO-58	<	12.4	
17-Oct-17	HORSERADISH LEAVES	FE-59	<	19.8	

Exposure Pathway - Ingestion
Food/Garden
Location: B-1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
17-Oct-17	HORSERADISH LEAVES	CO-60	<	12.1	
17-Oct-17	HORSERADISH LEAVES	ZN-65	<	31.5	
17-Oct-17	HORSERADISH LEAVES	ZR-NB-95	<	9.7	
17-Oct-17	HORSERADISH LEAVES	I-131	<	28.4	
17-Oct-17	HORSERADISH LEAVES	CS-134	<	14.6	
17-Oct-17	HORSERADISH LEAVES	CS-137	<	14.6	
07-Nov-17	HORSERADISH LEAVES	BE-7	681.9 +/-	170.5	
07-Nov-17	HORSERADISH LEAVES	K-40	4,775.9 +/-	400.1	
07-Nov-17	HORSERADISH LEAVES	MN-54	<	9.0	
07-Nov-17	HORSERADISH LEAVES	CO-58	<	16.3	
07-Nov-17	HORSERADISH LEAVES	FE-59	<	33.0	
07-Nov-17	HORSERADISH LEAVES	CO-60	<	13.5	
07-Nov-17	HORSERADISH LEAVES	ZN-65	<	20.8	
07-Nov-17	HORSERADISH LEAVES	ZR-NB-95	<	15.9	
07-Nov-17	HORSERADISH LEAVES	I-131	<	21.5	
07-Nov-17	HORSERADISH LEAVES	CS-134	<	12.6	
07-Nov-17	HORSERADISH LEAVES	CS-137	<	16.1	

Exposure Pathway - Ingestion
Food/Garden
Location: D-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-May-17	HORSERADISH LEAVES	BE-7	841.7 +/-	180.2	
30-May-17	HORSERADISH LEAVES	K-40	4,954.4 +/-	385.3	
30-May-17	HORSERADISH LEAVES	MN-54	<	11.8	
30-May-17	HORSERADISH LEAVES	CO-58	<	10.2	
30-May-17	HORSERADISH LEAVES	FE-59	<	31.4	
30-May-17	HORSERADISH LEAVES	CO-60	<	11.0	
30-May-17	HORSERADISH LEAVES	ZN-65	<	23.3	
30-May-17	HORSERADISH LEAVES	ZR-NB-95	<	12.2	
30-May-17	HORSERADISH LEAVES	I-131	<	23.3	
30-May-17	HORSERADISH LEAVES	CS-134	<	12.9	
30-May-17	HORSERADISH LEAVES	CS-137	<	11.5	
19-Jun-17	HORSERADISH LEAVES	BE-7	1,185.4 +/-	75.1	
19-Jun-17	HORSERADISH LEAVES	K-40	6,501.0 +/-	194.1	
19-Jun-17	HORSERADISH LEAVES	MN-54	<	6.9	
19-Jun-17	HORSERADISH LEAVES	CO-58	<	6.9	
19-Jun-17	HORSERADISH LEAVES	FE-59	<	18.8	
19-Jun-17	HORSERADISH LEAVES	CO-60	<	8.0	
19-Jun-17	HORSERADISH LEAVES	ZN-65	<	12.1	
19-Jun-17	HORSERADISH LEAVES	ZR-NB-95	<	7.1	
19-Jun-17	HORSERADISH LEAVES	I-131	<	19.5	
19-Jun-17	HORSERADISH LEAVES	CS-134	<	6.1	
19-Jun-17	HORSERADISH LEAVES	CS-137	<	8.0	
17-Jul-17	HORSERADISH LEAVES	BE-7	1,012.5 +/-	178.8	
17-Jul-17	HORSERADISH LEAVES	K-40	6,593.7 +/-	409.9	
17-Jul-17	HORSERADISH LEAVES	MN-54	<	9.6	
17-Jul-17	HORSERADISH LEAVES	CO-58	<	10.6	
17-Jul-17	HORSERADISH LEAVES	FE-59	<	28.2	
17-Jul-17	HORSERADISH LEAVES	CO-60	<	9.8	
17-Jul-17	HORSERADISH LEAVES	ZN-65	<	23.6	
17-Jul-17	HORSERADISH LEAVES	ZR-NB-95	<	13.7	
17-Jul-17	HORSERADISH LEAVES	I-131	<	29.0	
17-Jul-17	HORSERADISH LEAVES	CS-134	<	11.7	
17-Jul-17	HORSERADISH LEAVES	CS-137	<	9.9	
14-Aug-17	HORSERADISH LEAVES	BE-7	1,235.7 +/-	181.6	
14-Aug-17	HORSERADISH LEAVES	K-40	7,243.1 +/-	403.4	
14-Aug-17	HORSERADISH LEAVES	MN-54	<	9.2	
14-Aug-17	HORSERADISH LEAVES	CO-58	<	16.0	
14-Aug-17	HORSERADISH LEAVES	FE-59	<	29.8	

Exposure Pathway - Ingestion
Food/Garden
Location: D-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
14-Aug-17	HORSERADISH LEAVES	CO-60	<	9.2	
14-Aug-17	HORSERADISH LEAVES	ZN-65	<	31.5	
14-Aug-17	HORSERADISH LEAVES	ZR-NB-95	<	16.7	
14-Aug-17	HORSERADISH LEAVES	I-131	<	48.3	
14-Aug-17	HORSERADISH LEAVES	CS-134	<	11.7	
14-Aug-17	HORSERADISH LEAVES	CS-137	<	7.6	
14-Sep-17	HORSERADISH LEAVES	BE-7	<	179.6	
14-Sep-17	HORSERADISH LEAVES	K-40	7,024.2 +/-	582.9	
14-Sep-17	HORSERADISH LEAVES	MN-54	<	13.6	
14-Sep-17	HORSERADISH LEAVES	CO-58	<	19.2	
14-Sep-17	HORSERADISH LEAVES	FE-59	<	51.4	
14-Sep-17	HORSERADISH LEAVES	CO-60	<	10.0	
14-Sep-17	HORSERADISH LEAVES	ZN-65	<	29.4	
14-Sep-17	HORSERADISH LEAVES	ZR-NB-95	<	18.1	
14-Sep-17	HORSERADISH LEAVES	I-131	<	45.2	
14-Sep-17	HORSERADISH LEAVES	CS-134	<	17.2	
14-Sep-17	HORSERADISH LEAVES	CS-137	<	10.6	
17-Oct-17	HORSERADISH LEAVES	BE-7	657.5 +/-	167.8	Duplicate
17-Oct-17	HORSERADISH LEAVES	BE-7	648.9 +/-	180.2	
17-Oct-17	HORSERADISH LEAVES	K-40	5,758.3 +/-	416.5	Duplicate
17-Oct-17	HORSERADISH LEAVES	K-40	5,704.4 +/-	494.8	
17-Oct-17	HORSERADISH LEAVES	MN-54	<	9.7	Duplicate
17-Oct-17	HORSERADISH LEAVES	MN-54	<	12.4	
17-Oct-17	HORSERADISH LEAVES	CO-58	<	8.1	Duplicate
17-Oct-17	HORSERADISH LEAVES	CO-58	<	17.1	
17-Oct-17	HORSERADISH LEAVES	FE-59	<	29.2	Duplicate
17-Oct-17	HORSERADISH LEAVES	FE-59	<	18.8	
17-Oct-17	HORSERADISH LEAVES	CO-60	<	13.3	Duplicate
17-Oct-17	HORSERADISH LEAVES	CO-60	<	14.0	
17-Oct-17	HORSERADISH LEAVES	ZN-65	<	13.0	Duplicate
17-Oct-17	HORSERADISH LEAVES	ZN-65	<	29.7	
17-Oct-17	HORSERADISH LEAVES	ZR-NB-95	<	8.9	Duplicate
17-Oct-17	HORSERADISH LEAVES	ZR-NB-95	<	16.3	
17-Oct-17	HORSERADISH LEAVES	I-131	<	23.3	Duplicate
17-Oct-17	HORSERADISH LEAVES	I-131	<	16.7	
17-Oct-17	HORSERADISH LEAVES	CS-134	<	15.7	
17-Oct-17	HORSERADISH LEAVES	CS-134	<	10.7	Duplicate
17-Oct-17	HORSERADISH LEAVES	CS-137	<	16.0	

Exposure Pathway - Ingestion
Food/Garden
Location: D-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
17-Oct-17	HORSERADISH LEAVES	CS-137	<	11.2	Duplicate
07-Nov-17	HORSERADISH LEAVES	BE-7	638.9 +/-	234.5	Duplicate
07-Nov-17	HORSERADISH LEAVES	BE-7	790.6 +/-	181.7	
07-Nov-17	HORSERADISH LEAVES	K-40	6,018.2 +/-	525.8	Duplicate
07-Nov-17	HORSERADISH LEAVES	K-40	5,879.1 +/-	486.1	
07-Nov-17	HORSERADISH LEAVES	MN-54	<	11.8	Duplicate
07-Nov-17	HORSERADISH LEAVES	MN-54	<	12.7	
07-Nov-17	HORSERADISH LEAVES	CO-58	<	15.4	Duplicate
07-Nov-17	HORSERADISH LEAVES	CO-58	<	11.6	
07-Nov-17	HORSERADISH LEAVES	FE-59	<	24.9	Duplicate
07-Nov-17	HORSERADISH LEAVES	FE-59	<	21.0	
07-Nov-17	HORSERADISH LEAVES	CO-60	<	14.3	Duplicate
07-Nov-17	HORSERADISH LEAVES	CO-60	<	15.8	
07-Nov-17	HORSERADISH LEAVES	ZN-65	<	37.9	
07-Nov-17	HORSERADISH LEAVES	ZN-65	<	22.1	Duplicate
07-Nov-17	HORSERADISH LEAVES	ZR-NB-95	<	11.4	Duplicate
07-Nov-17	HORSERADISH LEAVES	ZR-NB-95	<	8.6	
07-Nov-17	HORSERADISH LEAVES	I-131	<	38.3	
07-Nov-17	HORSERADISH LEAVES	I-131	<	27.9	Duplicate
07-Nov-17	HORSERADISH LEAVES	CS-134	<	16.9	Duplicate
07-Nov-17	HORSERADISH LEAVES	CS-134	<	16.3	
07-Nov-17	HORSERADISH LEAVES	CS-137	<	15.4	Duplicate
07-Nov-17	HORSERADISH LEAVES	CS-137	<	14.2	

Exposure Pathway - Ingestion
Food/Garden
Location: H-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
30-May-17	HORSERADISH LEAVES	BE-7	635.6 +/-	142.6	
30-May-17	HORSERADISH LEAVES	K-40	4,270.7 +/-	380.5	
30-May-17	HORSERADISH LEAVES	MN-54	<	10.6	
30-May-17	HORSERADISH LEAVES	CO-58	<	14.5	
30-May-17	HORSERADISH LEAVES	FE-59	<	9.6	
30-May-17	HORSERADISH LEAVES	CO-60	<	11.2	
30-May-17	HORSERADISH LEAVES	ZN-65	<	35.7	
30-May-17	HORSERADISH LEAVES	ZR-NB-95	<	13.1	
30-May-17	HORSERADISH LEAVES	I-131	<	38.1	
30-May-17	HORSERADISH LEAVES	CS-134	<	13.4	
30-May-17	HORSERADISH LEAVES	CS-137	<	13.3	
19-Jun-17	HORSERADISH LEAVES	BE-7	1,121.3 +/-	85.9	
19-Jun-17	HORSERADISH LEAVES	K-40	5,555.7 +/-	211.2	
19-Jun-17	HORSERADISH LEAVES	MN-54	<	6.6	
19-Jun-17	HORSERADISH LEAVES	CO-58	<	7.6	
19-Jun-17	HORSERADISH LEAVES	FE-59	<	19.7	
19-Jun-17	HORSERADISH LEAVES	CO-60	<	8.4	
19-Jun-17	HORSERADISH LEAVES	ZN-65	<	11.4	
19-Jun-17	HORSERADISH LEAVES	ZR-NB-95	<	10.3	
19-Jun-17	HORSERADISH LEAVES	I-131	<	20.7	
19-Jun-17	HORSERADISH LEAVES	CS-134	<	7.1	
19-Jun-17	HORSERADISH LEAVES	CS-137	<	7.1	
17-Jul-17	HORSERADISH LEAVES	BE-7	1,178.1 +/-	157.1	
17-Jul-17	HORSERADISH LEAVES	K-40	6,996.2 +/-	441.5	
17-Jul-17	HORSERADISH LEAVES	MN-54	<	11.3	
17-Jul-17	HORSERADISH LEAVES	CO-58	<	12.4	
17-Jul-17	HORSERADISH LEAVES	FE-59	<	15.4	
17-Jul-17	HORSERADISH LEAVES	CO-60	<	12.7	
17-Jul-17	HORSERADISH LEAVES	ZN-65	<	13.3	
17-Jul-17	HORSERADISH LEAVES	ZR-NB-95	<	10.6	
17-Jul-17	HORSERADISH LEAVES	I-131	<	32.7	
17-Jul-17	HORSERADISH LEAVES	CS-134	<	11.3	
17-Jul-17	HORSERADISH LEAVES	CS-137	<	11.7	
14-Aug-17	HORSERADISH LEAVES	BE-7	1,028.8 +/-	221.9	
14-Aug-17	HORSERADISH LEAVES	BE-7	872.4 +/-	229.6	Duplicate
14-Aug-17	HORSERADISH LEAVES	K-40	6,137.2 +/-	505.2	Duplicate
14-Aug-17	HORSERADISH LEAVES	K-40	6,308.6 +/-	438.3	
14-Aug-17	HORSERADISH LEAVES	MN-54	<	11.0	Duplicate

Exposure Pathway - Ingestion
Food/Garden
Location: H-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
14-Aug-17	HORSERADISH LEAVES	MN-54	<	14.7	
14-Aug-17	HORSERADISH LEAVES	CO-58	<	16.2	
14-Aug-17	HORSERADISH LEAVES	CO-58	<	8.9	Duplicate
14-Aug-17	HORSERADISH LEAVES	FE-59	<	19.1	
14-Aug-17	HORSERADISH LEAVES	FE-59	<	46.7	Duplicate
14-Aug-17	HORSERADISH LEAVES	CO-60	<	16.5	Duplicate
14-Aug-17	HORSERADISH LEAVES	CO-60	<	16.8	
14-Aug-17	HORSERADISH LEAVES	ZN-65	<	34.5	
14-Aug-17	HORSERADISH LEAVES	ZN-65	<	20.5	Duplicate
14-Aug-17	HORSERADISH LEAVES	ZR-NB-95	<	18.6	Duplicate
14-Aug-17	HORSERADISH LEAVES	ZR-NB-95	<	13.6	
14-Aug-17	HORSERADISH LEAVES	I-131	<	49.4	Duplicate
14-Aug-17	HORSERADISH LEAVES	I-131	<	46.3	
14-Aug-17	HORSERADISH LEAVES	CS-134	<	14.9	Duplicate
14-Aug-17	HORSERADISH LEAVES	CS-134	<	15.6	
14-Aug-17	HORSERADISH LEAVES	CS-137	<	13.1	Duplicate
14-Aug-17	HORSERADISH LEAVES	CS-137	<	17.6	
14-Sep-17	HORSERADISH LEAVES	BE-7	283.8 +/-	148.0	
14-Sep-17	HORSERADISH LEAVES	K-40	6,379.7 +/-	439.6	
14-Sep-17	HORSERADISH LEAVES	MN-54	<	13.6	
14-Sep-17	HORSERADISH LEAVES	CO-58	<	9.3	
14-Sep-17	HORSERADISH LEAVES	FE-59	<	21.5	
14-Sep-17	HORSERADISH LEAVES	CO-60	<	13.4	
14-Sep-17	HORSERADISH LEAVES	ZN-65	<	17.1	
14-Sep-17	HORSERADISH LEAVES	ZR-NB-95	<	10.8	
14-Sep-17	HORSERADISH LEAVES	I-131	<	36.6	
14-Sep-17	HORSERADISH LEAVES	CS-134	<	13.2	
14-Sep-17	HORSERADISH LEAVES	CS-137	<	12.4	
17-Oct-17	HORSERADISH LEAVES	BE-7	1,150.5 +/-	223.1	
17-Oct-17	HORSERADISH LEAVES	K-40	6,389.9 +/-	567.1	
17-Oct-17	HORSERADISH LEAVES	MN-54	<	19.9	
17-Oct-17	HORSERADISH LEAVES	CO-58	<	12.5	
17-Oct-17	HORSERADISH LEAVES	FE-59	<	30.2	
17-Oct-17	HORSERADISH LEAVES	CO-60	<	12.0	
17-Oct-17	HORSERADISH LEAVES	ZN-65	<	25.6	
17-Oct-17	HORSERADISH LEAVES	ZR-NB-95	<	24.6	
17-Oct-17	HORSERADISH LEAVES	I-131	<	38.1	
17-Oct-17	HORSERADISH LEAVES	CS-134	<	15.7	

Exposure Pathway - Ingestion
Food/Garden
Location: H-2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
17-Oct-17	HORSERADISH LEAVES	CS-137	<	13.6	
07-Nov-17	HORSERADISH LEAVES	BE-7	836.6 +/-	237.0	
07-Nov-17	HORSERADISH LEAVES	K-40	6,222.7 +/-	537.6	
07-Nov-17	HORSERADISH LEAVES	MN-54	<	18.1	
07-Nov-17	HORSERADISH LEAVES	CO-58	<	9.9	
07-Nov-17	HORSERADISH LEAVES	FE-59	<	24.2	
07-Nov-17	HORSERADISH LEAVES	CO-60	<	15.4	
07-Nov-17	HORSERADISH LEAVES	ZN-65	<	48.6	
07-Nov-17	HORSERADISH LEAVES	ZR-NB-95	<	13.6	
07-Nov-17	HORSERADISH LEAVES	I-131	<	43.3	
07-Nov-17	HORSERADISH LEAVES	CS-134	<	18.6	
07-Nov-17	HORSERADISH LEAVES	CS-137	<	20.9	

Exposure Pathway - Ingestion
Food/Garden
Location: Q-6

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
19-Jun-17	HORSERADISH LEAVES	BE-7	1,225.2 +/-	118.3	
19-Jun-17	HORSERADISH LEAVES	K-40	6,795.6 +/-	253.2	
19-Jun-17	HORSERADISH LEAVES	MN-54	<	9.2	
19-Jun-17	HORSERADISH LEAVES	CO-58	<	6.1	
19-Jun-17	HORSERADISH LEAVES	FE-59	<	18.1	
19-Jun-17	HORSERADISH LEAVES	CO-60	<	9.4	
19-Jun-17	HORSERADISH LEAVES	ZN-65	<	19.0	
19-Jun-17	HORSERADISH LEAVES	ZR-NB-95	<	11.1	
19-Jun-17	HORSERADISH LEAVES	I-131	<	25.2	
19-Jun-17	HORSERADISH LEAVES	CS-134	<	9.4	
19-Jun-17	HORSERADISH LEAVES	CS-137	<	10.0	
17-Jul-17	HORSERADISH LEAVES	BE-7	607.4 +/-	146.9	
17-Jul-17	HORSERADISH LEAVES	K-40	5,817.4 +/-	428.0	
17-Jul-17	HORSERADISH LEAVES	MN-54	<	12.9	
17-Jul-17	HORSERADISH LEAVES	CO-58	<	15.4	
17-Jul-17	HORSERADISH LEAVES	FE-59	<	22.8	
17-Jul-17	HORSERADISH LEAVES	CO-60	<	8.7	
17-Jul-17	HORSERADISH LEAVES	ZN-65	<	26.6	
17-Jul-17	HORSERADISH LEAVES	ZR-NB-95	<	13.2	
17-Jul-17	HORSERADISH LEAVES	I-131	<	26.3	
17-Jul-17	HORSERADISH LEAVES	CS-134	<	10.8	
17-Jul-17	HORSERADISH LEAVES	CS-137	<	8.9	
14-Aug-17	HORSERADISH LEAVES	BE-7	996.8 +/-	181.7	
14-Aug-17	HORSERADISH LEAVES	K-40	5,873.0 +/-	397.1	
14-Aug-17	HORSERADISH LEAVES	MN-54	<	8.7	
14-Aug-17	HORSERADISH LEAVES	CO-58	<	11.9	
14-Aug-17	HORSERADISH LEAVES	FE-59	<	12.2	
14-Aug-17	HORSERADISH LEAVES	CO-60	<	9.2	
14-Aug-17	HORSERADISH LEAVES	ZN-65	<	19.1	
14-Aug-17	HORSERADISH LEAVES	ZR-NB-95	<	11.2	
14-Aug-17	HORSERADISH LEAVES	I-131	<	40.7	
14-Aug-17	HORSERADISH LEAVES	CS-134	<	11.5	
14-Aug-17	HORSERADISH LEAVES	CS-137	<	13.4	
14-Sep-17	HORSERADISH LEAVES	BE-7	322.5 +/-	153.5	Duplicate
14-Sep-17	HORSERADISH LEAVES	BE-7	411.3 +/-	146.4	
14-Sep-17	HORSERADISH LEAVES	K-40	4,946.9 +/-	431.5	Duplicate
14-Sep-17	HORSERADISH LEAVES	K-40	5,150.7 +/-	395.9	
14-Sep-17	HORSERADISH LEAVES	MN-54	<	13.1	Duplicate

Exposure Pathway - Ingestion
Food/Garden
Location: Q-6

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
14-Sep-17	HORSERADISH LEAVES	MN-54	<	9.9	
14-Sep-17	HORSERADISH LEAVES	CO-58	<	9.4	Duplicate
14-Sep-17	HORSERADISH LEAVES	CO-58	<	14.1	
14-Sep-17	HORSERADISH LEAVES	FE-59	<	14.5	
14-Sep-17	HORSERADISH LEAVES	FE-59	<	32.5	Duplicate
14-Sep-17	HORSERADISH LEAVES	CO-60	<	10.8	Duplicate
14-Sep-17	HORSERADISH LEAVES	CO-60	<	9.7	
14-Sep-17	HORSERADISH LEAVES	ZN-65	<	25.3	Duplicate
14-Sep-17	HORSERADISH LEAVES	ZN-65	<	28.9	
14-Sep-17	HORSERADISH LEAVES	ZR-NB-95	<	18.1	Duplicate
14-Sep-17	HORSERADISH LEAVES	ZR-NB-95	<	9.1	
14-Sep-17	HORSERADISH LEAVES	I-131	<	51.3	Duplicate
14-Sep-17	HORSERADISH LEAVES	I-131	<	27.8	
14-Sep-17	HORSERADISH LEAVES	CS-134	<	16.1	Duplicate
14-Sep-17	HORSERADISH LEAVES	CS-134	<	12.7	
14-Sep-17	HORSERADISH LEAVES	CS-137	<	12.1	
14-Sep-17	HORSERADISH LEAVES	CS-137	<	10.1	Duplicate
17-Oct-17	HORSERADISH LEAVES	BE-7	425.6 +/-	144.2	
17-Oct-17	HORSERADISH LEAVES	K-40	4,771.3 +/-	435.2	
17-Oct-17	HORSERADISH LEAVES	MN-54	<	11.1	
17-Oct-17	HORSERADISH LEAVES	CO-58	<	14.6	
17-Oct-17	HORSERADISH LEAVES	FE-59	<	26.9	
17-Oct-17	HORSERADISH LEAVES	CO-60	<	10.6	
17-Oct-17	HORSERADISH LEAVES	ZN-65	<	24.4	
17-Oct-17	HORSERADISH LEAVES	ZR-NB-95	<	15.5	
17-Oct-17	HORSERADISH LEAVES	I-131	<	23.7	
17-Oct-17	HORSERADISH LEAVES	CS-134	<	12.6	
17-Oct-17	HORSERADISH LEAVES	CS-137	<	8.7	
07-Nov-17	HORSERADISH LEAVES	BE-7	599.1 +/-	190.7	
07-Nov-17	HORSERADISH LEAVES	K-40	5,455.2 +/-	478.7	
07-Nov-17	HORSERADISH LEAVES	MN-54	<	14.5	
07-Nov-17	HORSERADISH LEAVES	CO-58	<	13.0	
07-Nov-17	HORSERADISH LEAVES	FE-59	<	21.4	
07-Nov-17	HORSERADISH LEAVES	CO-60	<	11.0	
07-Nov-17	HORSERADISH LEAVES	ZN-65	<	22.7	
07-Nov-17	HORSERADISH LEAVES	ZR-NB-95	<	20.7	
07-Nov-17	HORSERADISH LEAVES	I-131	<	33.8	
07-Nov-17	HORSERADISH LEAVES	CS-134	<	15.4	

Exposure Pathway - Ingestion
Food/Garden
Location: Q-6

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
07-Nov-17	HORSERADISH LEAVES	CS-137	<	17.3	

Exposure Pathway - Ingestion
Food/Crops
Location: NR-D1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
09-Nov-17	IRRIGATED CORN	BE-7	<	94.7	
09-Nov-17	IRRIGATED CORN	K-40	2,616.2 +/-	229.4	
09-Nov-17	IRRIGATED CORN	MN-54	<	6.5	
09-Nov-17	IRRIGATED CORN	CO-58	<	9.3	
09-Nov-17	IRRIGATED CORN	FE-59	<	24.9	
09-Nov-17	IRRIGATED CORN	CO-60	<	6.9	
09-Nov-17	IRRIGATED CORN	ZN-65	<	20.8	
09-Nov-17	IRRIGATED CORN	ZR-NB-95	<	5.2	
09-Nov-17	IRRIGATED CORN	I-131	<	26.1	
09-Nov-17	IRRIGATED CORN	CS-134	<	6.9	
09-Nov-17	IRRIGATED CORN	CS-137	<	8.6	

Exposure Pathway - Ingestion
Food/Crops
Location: NR-D2

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
18-Oct-17	IRRIGATED SOYBEANS	BE-7	<	86.0	
18-Oct-17	IRRIGATED SOYBEANS	K-40	15,448.0 +/-	566.5	
18-Oct-17	IRRIGATED SOYBEANS	MN-54	<	9.8	
18-Oct-17	IRRIGATED SOYBEANS	CO-58	<	10.7	
18-Oct-17	IRRIGATED SOYBEANS	FE-59	<	43.0	
18-Oct-17	IRRIGATED SOYBEANS	CO-60	<	13.8	
18-Oct-17	IRRIGATED SOYBEANS	ZN-65	<	31.2	
18-Oct-17	IRRIGATED SOYBEANS	ZR-NB-95	<	9.0	
18-Oct-17	IRRIGATED SOYBEANS	I-131	<	19.6	
18-Oct-17	IRRIGATED SOYBEANS	CS-134	<	11.4	
18-Oct-17	IRRIGATED SOYBEANS	CS-137	<	14.4	

Exposure Pathway - Ingestion
Food/Crops
Location: NR-U1

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
01-Oct-17	IRRIGATED CORN	BE-7	<	67.2	
01-Oct-17	IRRIGATED CORN	K-40	2,485.2 +/-	213.3	
01-Oct-17	IRRIGATED CORN	MN-54	<	5.6	
01-Oct-17	IRRIGATED CORN	CO-58	<	5.4	
01-Oct-17	IRRIGATED CORN	FE-59	<	9.5	
01-Oct-17	IRRIGATED CORN	CO-60	<	4.2	
01-Oct-17	IRRIGATED CORN	ZN-65	<	11.7	
01-Oct-17	IRRIGATED CORN	ZR-NB-95	<	5.5	
01-Oct-17	IRRIGATED CORN	I-131	<	9.1	
01-Oct-17	IRRIGATED CORN	CS-134	<	6.3	
01-Oct-17	IRRIGATED CORN	CS-137	<	4.6	
06-Nov-17	IRRIGATED SOYBEANS	BE-7	<	63.6	
06-Nov-17	IRRIGATED SOYBEANS	K-40	12,416.0 +/-	560.6	
06-Nov-17	IRRIGATED SOYBEANS	MN-54	<	11.7	
06-Nov-17	IRRIGATED SOYBEANS	CO-58	<	10.6	
06-Nov-17	IRRIGATED SOYBEANS	FE-59	<	21.1	
06-Nov-17	IRRIGATED SOYBEANS	CO-60	<	10.6	
06-Nov-17	IRRIGATED SOYBEANS	ZN-65	<	24.5	
06-Nov-17	IRRIGATED SOYBEANS	ZR-NB-95	<	9.2	
06-Nov-17	IRRIGATED SOYBEANS	I-131	<	12.7	
06-Nov-17	IRRIGATED SOYBEANS	CS-134	<	11.5	
06-Nov-17	IRRIGATED SOYBEANS	CS-137	<	8.5	

Exposure Pathway - Aquatic
Bottom Sediment
Location: DC

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	10,783.0	+/- 1,024.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	53.9	
15-May-17	BOTTOM SEDIMENT	CO-58	<	48.5	
15-May-17	BOTTOM SEDIMENT	FE-59	<	72.3	
15-May-17	BOTTOM SEDIMENT	CO-60	<	32.4	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	91.2	
15-May-17	BOTTOM SEDIMENT	CS-134	<	29.8	
15-May-17	BOTTOM SEDIMENT	CS-137	99.1	+/- 53.7	
15-May-17	BOTTOM SEDIMENT	FE-55	<	18,151.0	
27-Sep-17	BOTTOM SEDIMENT	K-40	8,970.3	+/- 1,064.0	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	50.1	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	57.5	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	69.1	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	30.4	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	97.5	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	32.8	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	59.2	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	16,837.0	

Exposure Pathway - Aquatic
Bottom Sediment
Location: EEA

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
03-Oct-17	BOTTOM SEDIMENT	K-40	12,066.0 +/-	750.7	
03-Oct-17	BOTTOM SEDIMENT	MN-54	<	33.8	
03-Oct-17	BOTTOM SEDIMENT	CO-58	<	29.2	
03-Oct-17	BOTTOM SEDIMENT	FE-59	<	76.4	
03-Oct-17	BOTTOM SEDIMENT	CO-60	<	14.1	
03-Oct-17	BOTTOM SEDIMENT	ZN-65	<	68.7	
03-Oct-17	BOTTOM SEDIMENT	CS-134	<	18.6	
03-Oct-17	BOTTOM SEDIMENT	CS-137	59.9 +/-	26.5	

Exposure Pathway - Aquatic
Bottom Sediment
Location: ESW 2017-13

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	9,758.2 +/-	1,038.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	51.7	
15-May-17	BOTTOM SEDIMENT	CO-58	<	54.9	
15-May-17	BOTTOM SEDIMENT	FE-59	<	50.8	
15-May-17	BOTTOM SEDIMENT	CO-60	<	27.2	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	74.2	
15-May-17	BOTTOM SEDIMENT	CS-134	<	39.0	
15-May-17	BOTTOM SEDIMENT	CS-137	<	47.0	
15-May-17	BOTTOM SEDIMENT	FE-55	<	18,315.5	

Exposure Pathway - Aquatic
Bottom Sediment
Location: ESW 2017-14

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
27-Sep-17	BOTTOM SEDIMENT	K-40	5,804.6 +/-	947.0	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	46.6	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	49.7	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	133.8	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	31.6	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	114.6	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	37.0	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	33.1	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	15,623.5	

Exposure Pathway - Aquatic
Bottom Sediment
Location: JRR

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	18,138.0 +/-	1,043.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	41.0	
15-May-17	BOTTOM SEDIMENT	CO-58	<	49.9	
15-May-17	BOTTOM SEDIMENT	FE-59	<	116.5	
15-May-17	BOTTOM SEDIMENT	CO-60	<	47.7	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	100.8	
15-May-17	BOTTOM SEDIMENT	CS-134	<	46.1	
15-May-17	BOTTOM SEDIMENT	CS-137	<	51.2	
27-Sep-17	BOTTOM SEDIMENT	K-40	15,862.0 +/-	1,191.0	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	51.9	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	33.6	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	124.4	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	49.0	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	115.0	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	50.9	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	67.9	

Exposure Pathway - Aquatic
Bottom Sediment
Location: MUDS

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
22-Feb-17	BOTTOM SEDIMENT	K-40	9,757.3 +/-	627.2	
22-Feb-17	BOTTOM SEDIMENT	MN-54	<	25.3	
22-Feb-17	BOTTOM SEDIMENT	CO-58	<	16.5	
22-Feb-17	BOTTOM SEDIMENT	FE-59	<	36.8	
22-Feb-17	BOTTOM SEDIMENT	CO-60	<	18.3	
22-Feb-17	BOTTOM SEDIMENT	ZN-65	<	50.8	
22-Feb-17	BOTTOM SEDIMENT	CS-134	<	16.9	
22-Feb-17	BOTTOM SEDIMENT	CS-137	<	16.8	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-49

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	9,868.3 +/-	1,062.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	42.7	
15-May-17	BOTTOM SEDIMENT	CO-58	<	52.6	
15-May-17	BOTTOM SEDIMENT	FE-59	<	72.0	
15-May-17	BOTTOM SEDIMENT	CO-60	<	30.1	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	107.6	
15-May-17	BOTTOM SEDIMENT	CS-134	<	35.3	
15-May-17	BOTTOM SEDIMENT	CS-137	<	48.5	
15-May-17	BOTTOM SEDIMENT	FE-55	<	18,343.7	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-50

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	10,893.0 +/-	831.8	
15-May-17	BOTTOM SEDIMENT	MN-54	<	37.3	
15-May-17	BOTTOM SEDIMENT	CO-58	<	37.9	
15-May-17	BOTTOM SEDIMENT	FE-59	<	59.8	
15-May-17	BOTTOM SEDIMENT	CO-60	<	25.3	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	81.3	
15-May-17	BOTTOM SEDIMENT	CS-134	<	25.2	
15-May-17	BOTTOM SEDIMENT	CS-137	<	38.1	
15-May-17	BOTTOM SEDIMENT	FE-55	<	17,384.0	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-51

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	10,945.0 +/-	1,073.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	47.8	
15-May-17	BOTTOM SEDIMENT	CO-58	<	52.5	
15-May-17	BOTTOM SEDIMENT	FE-59	<	112.4	
15-May-17	BOTTOM SEDIMENT	CO-60	<	45.8	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	114.9	
15-May-17	BOTTOM SEDIMENT	CS-134	<	36.3	
15-May-17	BOTTOM SEDIMENT	CS-137	<	57.9	
15-May-17	BOTTOM SEDIMENT	FE-55	<	18,794.6	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-52

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	12,504.0 +/-	1,206.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	57.8	
15-May-17	BOTTOM SEDIMENT	CO-58	<	47.4	
15-May-17	BOTTOM SEDIMENT	FE-59	<	123.2	
15-May-17	BOTTOM SEDIMENT	CO-60	<	49.4	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	113.8	
15-May-17	BOTTOM SEDIMENT	CS-134	<	45.6	
15-May-17	BOTTOM SEDIMENT	CS-137	<	55.0	
15-May-17	BOTTOM SEDIMENT	FE-55	<	18,789.1	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-53

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
27-Sep-17	BOTTOM SEDIMENT	K-40	9,644.7 +/-	1,012.0	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	57.3	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	48.4	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	62.1	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	55.6	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	90.1	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	35.4	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	45.4	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	16,911.9	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-54

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
27-Sep-17	BOTTOM SEDIMENT	K-40	12,047.0 +/-	1,365.7	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	50.1	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	57.0	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	124.4	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	37.2	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	101.1	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	46.8	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	44.0	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	16,801.7	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-55

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
27-Sep-17	BOTTOM SEDIMENT	K-40	10,465.0 +/-	1,302.9	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	52.8	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	60.2	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	126.9	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	46.6	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	97.3	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	38.2	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	41.6	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	16,146.6	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS 2017-56

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
29-Nov-17	BOTTOM SEDIMENT	K-40	10,154.0 +/-	1,033.0	
29-Nov-17	BOTTOM SEDIMENT	MN-54	<	52.5	
29-Nov-17	BOTTOM SEDIMENT	CO-58	<	37.6	
29-Nov-17	BOTTOM SEDIMENT	FE-59	<	67.9	
29-Nov-17	BOTTOM SEDIMENT	CO-60	<	22.9	
29-Nov-17	BOTTOM SEDIMENT	ZN-65	<	95.7	
29-Nov-17	BOTTOM SEDIMENT	CS-134	<	32.2	
29-Nov-17	BOTTOM SEDIMENT	CS-137	<	47.7	
29-Nov-17	BOTTOM SEDIMENT	FE-55	<	16,865.0	
29-Nov-17	BOTTOM SEDIMENT	SR-90	<	43.5	
29-Nov-17	BOTTOM SEDIMENT	NI-63	<	349.2	
29-Nov-17	BOTTOM SEDIMENT	SR-89	<	84.6	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS HS-13

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
15-May-17	BOTTOM SEDIMENT	K-40	12,541.0 +/-	1,142.0	
15-May-17	BOTTOM SEDIMENT	MN-54	<	55.2	
15-May-17	BOTTOM SEDIMENT	CO-58	<	47.6	
15-May-17	BOTTOM SEDIMENT	FE-59	<	108.9	
15-May-17	BOTTOM SEDIMENT	CO-60	<	22.8	
15-May-17	BOTTOM SEDIMENT	ZN-65	<	79.1	
15-May-17	BOTTOM SEDIMENT	CS-134	<	35.8	
15-May-17	BOTTOM SEDIMENT	CS-137	104.7 +/-	49.7	
15-May-17	BOTTOM SEDIMENT	FE-55	<	19,020.0	
15-May-17	BOTTOM SEDIMENT	SR-90	<	89.5	
15-May-17	BOTTOM SEDIMENT	SR-89	<	268.5	
15-May-17	BOTTOM SEDIMENT	NI-63	<	225.2	

Exposure Pathway - Aquatic
Bottom Sediment
Location: UHS HS-14

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
27-Sep-17	BOTTOM SEDIMENT	K-40	14,433.0 +/-	1,508.6	
27-Sep-17	BOTTOM SEDIMENT	MN-54	<	74.3	
27-Sep-17	BOTTOM SEDIMENT	CO-58	<	79.2	
27-Sep-17	BOTTOM SEDIMENT	FE-59	<	150.4	
27-Sep-17	BOTTOM SEDIMENT	CO-60	<	42.4	
27-Sep-17	BOTTOM SEDIMENT	ZN-65	<	121.8	
27-Sep-17	BOTTOM SEDIMENT	CS-134	<	65.6	
27-Sep-17	BOTTOM SEDIMENT	CS-137	<	57.3	
27-Sep-17	BOTTOM SEDIMENT	FE-55	<	16,896.8	

Exposure Pathway - Aquatic Vegetation
Location: DC-ALT

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
28-Aug-17	AMERICAN PONDWEED	BE-7	328.9 +/-	81.0	
28-Aug-17	AMERICAN PONDWEED	K-40	1,664.6 +/-	173.2	
28-Aug-17	AMERICAN PONDWEED	MN-54	<	6.5	
28-Aug-17	AMERICAN PONDWEED	CO-58	<	5.2	
28-Aug-17	AMERICAN PONDWEED	FE-59	<	12.9	
28-Aug-17	AMERICAN PONDWEED	CO-60	<	3.4	
28-Aug-17	AMERICAN PONDWEED	ZN-65	<	16.9	
28-Aug-17	AMERICAN PONDWEED	ZR-NB-95	<	5.2	
28-Aug-17	AMERICAN PONDWEED	I-131	<	19.5	
28-Aug-17	AMERICAN PONDWEED	CS-134	<	6.5	
28-Aug-17	AMERICAN PONDWEED	CS-137	<	6.3	

Exposure Pathway - Aquatic Vegetation
Location: EEA

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
02-Aug-17	WATER PRIMROSE	BE-7	518.6 +/-	100.6	
02-Aug-17	WATER PRIMROSE	K-40	2,160.3 +/-	175.0	
02-Aug-17	WATER PRIMROSE	MN-54	<	6.0	
02-Aug-17	WATER PRIMROSE	CO-58	<	5.2	
02-Aug-17	WATER PRIMROSE	FE-59	<	17.1	
02-Aug-17	WATER PRIMROSE	CO-60	<	5.2	
02-Aug-17	WATER PRIMROSE	ZN-65	<	11.6	
02-Aug-17	WATER PRIMROSE	ZR-NB-95	<	9.7	
02-Aug-17	WATER PRIMROSE	I-131	<	22.7	
02-Aug-17	WATER PRIMROSE	CS-134	<	6.1	
02-Aug-17	WATER PRIMROSE	CS-137	17.8 +/-	7.5	

Exposure Pathway - Aquatic Vegetation
Location: MUDS

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
02-Aug-17	AMERICAN PONDWEED	BE-7	190.2 +/-	83.4	
02-Aug-17	AMERICAN PONDWEED	K-40	2,126.0 +/-	185.6	
02-Aug-17	AMERICAN PONDWEED	MN-54	<	6.4	
02-Aug-17	AMERICAN PONDWEED	CO-58	<	5.6	
02-Aug-17	AMERICAN PONDWEED	FE-59	<	8.8	
02-Aug-17	AMERICAN PONDWEED	CO-60	<	5.8	
02-Aug-17	AMERICAN PONDWEED	ZN-65	<	7.5	
02-Aug-17	AMERICAN PONDWEED	ZR-NB-95	<	8.1	
02-Aug-17	AMERICAN PONDWEED	I-131	<	23.2	
02-Aug-17	AMERICAN PONDWEED	CS-134	<	6.7	
02-Aug-17	AMERICAN PONDWEED	CS-137	<	6.7	

Exposure Pathway - Aquatic Vegetation
Location: SC

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
16-Jun-17	CATTAILS	BE-7	728.2 +/-	60.4	
16-Jun-17	CATTAILS	K-40	2,588.8 +/-	120.7	
16-Jun-17	CATTAILS	MN-54	<	4.5	
16-Jun-17	CATTAILS	CO-58	<	4.9	
16-Jun-17	CATTAILS	FE-59	<	10.6	
16-Jun-17	CATTAILS	CO-60	<	3.3	
16-Jun-17	CATTAILS	ZN-65	<	8.2	
16-Jun-17	CATTAILS	ZR-NB-95	<	4.9	
16-Jun-17	CATTAILS	I-131	<	18.5	
16-Jun-17	CATTAILS	CS-134	<	4.5	
16-Jun-17	CATTAILS	CS-137	<	3.2	

Exposure Pathway - Terrestrial
Vegetation
Location: EEA

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
17-May-17	PASTURAGE	BE-7	493.1+/-	155.1	
17-May-17	PASTURAGE	K-40	6,536.1+/-	425.4	
17-May-17	PASTURAGE	MN-54	<	12.0	
17-May-17	PASTURAGE	CO-58	<	7.8	
17-May-17	PASTURAGE	FE-59	<	22.7	
17-May-17	PASTURAGE	CO-60	<	10.3	
17-May-17	PASTURAGE	ZN-65	<	25.6	
17-May-17	PASTURAGE	ZR-NB-95	<	8.8	
17-May-17	PASTURAGE	I-131	<	15.3	
17-May-17	PASTURAGE	CS-134	<	10.5	
17-May-17	PASTURAGE	CS-137	<	12.0	

Exposure Pathway - Terrestrial
Vegetation
Location: MUDS

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
16-Jun-17	PASTURAGE	BE-7	2,319.4 +/-	156.4	
16-Jun-17	PASTURAGE	K-40	4,695.2 +/-	295.3	
16-Jun-17	PASTURAGE	MN-54	<	8.0	
16-Jun-17	PASTURAGE	CO-58	<	11.3	
16-Jun-17	PASTURAGE	FE-59	<	17.5	
16-Jun-17	PASTURAGE	CO-60	<	6.1	
16-Jun-17	PASTURAGE	ZN-65	<	12.7	
16-Jun-17	PASTURAGE	ZR-NB-95	<	11.2	
16-Jun-17	PASTURAGE	I-131	<	21.4	
16-Jun-17	PASTURAGE	CS-134	<	10.0	
16-Jun-17	PASTURAGE	CS-137	<	10.6	

Exposure Pathway - Terrestrial
Soil
Location: EEA

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
17-May-17	SOIL	K-40	12,020.0 +/-	787.8	
17-May-17	SOIL	MN-54	<	18.6	
17-May-17	SOIL	CO-58	<	24.8	
17-May-17	SOIL	FE-59	<	49.5	
17-May-17	SOIL	CO-60	<	21.9	
17-May-17	SOIL	ZN-65	<	62.9	
17-May-17	SOIL	CS-134	<	19.4	
17-May-17	SOIL	CS-137	162.4 +/-	34.3	

Exposure Pathway - Terrestrial
Soil
Location: MUDS

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Dry)		Duplicate Analysis
22-Feb-17	SOIL	K-40	9,730.1	+/- 623.0	
22-Feb-17	SOIL	MN-54	<	16.5	
22-Feb-17	SOIL	CO-58	<	19.6	
22-Feb-17	SOIL	FE-59	<	35.4	
22-Feb-17	SOIL	CO-60	<	19.9	
22-Feb-17	SOIL	ZN-65	<	37.3	
22-Feb-17	SOIL	CS-134	<	15.7	
22-Feb-17	SOIL	CS-137	144.8	+/- 26.5	
03-Oct-17	SOIL	K-40	10,485.0	+/- 735.4	
03-Oct-17	SOIL	MN-54	<	23.6	
03-Oct-17	SOIL	CO-58	<	35.5	
03-Oct-17	SOIL	FE-59	<	57.2	
03-Oct-17	SOIL	CO-60	<	23.7	
03-Oct-17	SOIL	ZN-65	<	48.0	
03-Oct-17	SOIL	CS-134	<	23.7	
03-Oct-17	SOIL	CS-137	74.7	+/- 25.7	

Exposure Pathway - Ingestion
Meat
Location: P2.0

Collection Date	Sample Description	Nuclide	Concentration (pCi/Kg Wet)		Duplicate Analysis
21-Nov-17	DEER	K-40	2,424.4 +/-	367.4	
21-Nov-17	DEER	MN-54	<	18.4	
21-Nov-17	DEER	CO-58	<	18.0	
21-Nov-17	DEER	FE-59	<	28.1	
21-Nov-17	DEER	CO-60	<	13.5	
21-Nov-17	DEER	ZN-65	<	38.8	
21-Nov-17	DEER	CS-134	<	18.2	
21-Nov-17	DEER	CS-137	<	10.3	
21-Nov-17	DEER	H-3	3,140.0 +/-	150.0	

APPENDIX D

LAND USE CENSUS REPORT

WOLF CREEK GENERATING STATION

2017 LAND USE CENSUS REPORT

Prepared by:	Teresa L. Rice	10-17-17
	Teresa L. Rice	Date
Peer Review:	Craig T. Adkinson	
	Craig T. Adkinson	10-18-17 Date
Approved by:	James K. Rudeen	10-25-17
	James K. Rudeen	Date

EXECUTIVE SUMMARY

The annual Land Use Census of rural residents within five miles of the Wolf Creek Generating Station (WCGS) has been completed in 2017 in accordance with AP 07B-004, [Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)].

No program changes are necessary regarding milk locations. Again, no milk sampling locations were identified.

The two broadleaf vegetation locations with the highest calculated annual average D/Q rankings are A2.60-17TE1527 and Q2.35-MILA1619. Since these gardens are currently listed as sample locations for the Radiological Environmental Monitoring Program in procedure AP 07B-004 (locations A-3 and Q-6), no program changes are necessary regarding broadleaf vegetation locations.

BACKGROUND

Section 5.2, Attachment A, of procedure AP 07B-004, directs that "a Land Use Census shall be conducted annually during the growing season to identify the nearest (1) milk animal, (2) residence, and (3) garden of greater than 500 square feet producing broadleaf vegetation in each of the 16 meteorological sections within five miles of the WCGS site."

Table 5-1, Attachment A, of procedure AP 07B-004, requires that broadleaf vegetation samples be collected from "two indicator locations (using the criteria from the "Land Use Census" section) with highest calculated annual average D/Q."

Table 5-1, Attachment A, of procedure AP 07B-004, also requires that milk samples be collected from "three indicator locations within 5 miles of the site having the highest dose potential."

METHODOLOGY

Over two hundred surveys were mailed to the rural residents living within five miles of WCGS. The survey excluded the residents of New Strawn and Burlington. These locations were excluded due to the large number of households and the low likelihood that information gained from these residences would affect the locations chosen for REMP sampling. Drive-by information was collected for the nearest residences in each sector that did not return surveys.

The information collected was compiled and the results are identified in Tables 1-3. Calculations were performed so that garden locations could be ranked by their respective D/Q. These results are contained in Table 4.

RESULTS

Three changes were identified for the nearest occupied residence in each sector. Five changes were noted for the nearest garden producing broadleaf vegetation. There were no changes regarding milk sample locations. Again, no locations were identified that milked animals for human consumption.

TABLE 1

2017 Land Use Census Data

Location of Nearest:

Sector	Residence	Milking Animals	Broadleaf Garden
A	A2.60-17TE1527	None	A2.60-17TE1527
B	B3.53-QURD1755	None	B4.09-18RD1739
C	C2.00-16RD1715	None	C3.58-RERD1675
D	D2.33-RERD1520	None	D3.00-16RD1829
E	E1.78-QULA1451	None	None
F	F1.84-QULA1419	None	F3.37-14RD1904
G	G3.03-13RD1820	None	G3.60-RERD1198
H	H3.09-12RD1711	None	H3.09-12RD1711
J	J3.70-11RD1540	None	J3.75-11RD1580
K	K2.70-12LA1439	None	K4.10-NARD1120
L	L2.10-NARD1339	None	L2.39-NARD1309
M	M2.34-14RD1346	None	M3.69-LYLA1290
N	N2.08-15RD1350	None	N2.08-15RD1350
P	P2.76-HW751534	None	P4.95-LADR339
Q	Q2.35-MILA1619	None	Q2.35-MILA1619
R	R2.08-NALN1650	None	None

Identifiers are based upon the following protocol:

EXAMPLE: A2.60-17TE1527

"A" = Sector A

"2.60" = 2.60 miles from the reactor

"17TE1527" = address

TABLE 2

SECTOR	2016 NEAREST RESIDENCE	2017 NEAREST RESIDENCE
A	A2.47-17RD1474	A2.60-17TE1527
B	B3.53-QURD1755	B3.53-QURD1755
C	C1.92-16RD1703	C2.00-16RD1715
D	D2.03-QULA1571	D2.33-RERD1520
E	E1.78-QULA1451	E1.78-QULA1451
F	F1.84-QULA1419	F1.84-QULA1419
G	G3.03-13RD1820	G3.03-13RD1820
H	H3.09-12RD1711	H3.09-12RD1711
J	J3.70-11RD1540	J3.70-11RD1540
K	K2.70-12LA1439	K2.70-12LA1439
L	L2.10-NARD1339	L2.10-NARD1339
M	M2.34-14RD1346	M2.34-14RD1346
N	N2.08-15RD1350	N2.08-15RD1350
P	P2.76-HW751534	P2.76-HW751534
Q	Q2.35-MILA1619	Q2.35-MILA1619
R	R2.08-NALN1650	R2.08-NALN1650

NOTE: Entries underlined indicate changes from the 2016 Land Use Census.

TABLE 3

2017 Land Use Census Milk and Garden Data

SECTOR	2016 MILKING ANIMALS	2017 MILKING ANIMALS	2016 NEAREST GARDEN PRODUCING BROADLEAF VEGETATION	2017 NEAREST GARDEN PRODUCING BROADLEAF VEGETATION
A	None	None	A2.60-17TE1527	A2.60-17TE1527
B	None	None	B4.12-QURD1823	B4.09-18RD1739
C	None	None	C4.89-18RD1859	C3.58-RERD1675
D	None	None	D3.00-16RD1829	D3.00-16RD1829
E	None	None	None	None
F	None	None	F2.44-RERD1391	F3.37-14RD1904
G	None	None	G3.60-RERD1198	G3.60-RERD1198
H	None	None	None	H3.09-12RD1711
J	None	None	J3.75-11RD1580	J3.75-11RD1580
K	None	None	K4.10-NARD1120	K4.10-NARD1120
L	None	None	L2.39-NARD1309	L2.39-NARD1309
M	None	None	M3.69-LYLA1290	M3.69-LYLA1290
N	None	None	N2.08-15RD1350	N2.08-15RD1350
P	None	None	P2.94-16RD1309	P4.95-LADR339
Q	None	None	Q2.35-MILA1619	Q2.35-MILA1619
R	None	None	None	None

NOTE: Underlined entries indicate changes from the 2016 Land Use Census.

TABLE 4

Information Used for D/Q Calculations on Gardens Producing Broadleaf Vegetation

FROM LAND USE			FROM SA-16-004					
	DIST	CALC	NEAR	NEAR	FAR	FAR		SECTOR
SECTOR	(MI)	(METERS)	DIST	D / Q	DIST	D / Q	CALC	RANKING
A	2.60	4184	4000	1.85E-09	5000	1.26E-09	1.74E-09	1
B	4.09	6582	6000	4.84E-10	7000	3.59E-10	4.11E-10	7
C	3.58	5761	5000	2.77E-10	6000	2.04E-10	2.21E-10	12
D	3.00	4828	4000	2.93E-10	5000	1.99E-10	2.15E-10	14
E								
F	3.37	5423	5000	2.86E-10	6000	2.10E-10	2.54E-10	11
G	3.60	5794	5000	5.02E-10	6000	3.69E-10	3.96E-10	8
H	3.09	4973	4000	8.53E-10	5000	5.80E-10	5.87E-10	5
J	3.75	6035	6000	4.46E-10	7000	3.31E-10	4.42E-10	6
K	4.10	6598	6000	3.88E-10	7000	2.88E-10	3.28E-10	9
L	2.39	3846	3000	1.12E-09	4000	6.75E-10	7.44E-10	4
M	3.69	5938	5000	3.46E-10	6000	2.55E-10	2.61E-10	10
N	2.08	3347	3000	1.15E-09	4000	6.88E-10	9.90E-10	3
P	4.95	7966	7000	2.70E-10	8000	2.18E-10	2.20E-10	13
Q	2.35	3782	3000	1.51E-09	4000	9.04E-10	1.04E-09	2
R								

Originated by: Teresa L. Rice Date: 10-17-17

Verified by: Craig T. Atkinson Date: 10-18-17