Exelon Generation Company, LLC

Braidwood Nuclear Power Station
35100 South Route 53, Suite 84
Braceville, IL 60407-9619

www.exeloncorp.com

May 11, 2016
BW160031

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Subject: 2015 Annual Radiological Environmental Operating Report

Attached is the 2015 Annual Radiological Environmental Operating Report for Braidwood Station. This report is being submitted in accordance with Technical Specification 5.6.2, "Annual Radiological Environmental Operating Report." This report contains information associated with the station's radiological environmental and meteorological monitoring programs. This information is consistent with the objectives described in the Offsite Dose Calculation Manual and 10 CFR 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low as is Reasonably Achievable' for Radioactive Material In Light-Water-Cooled Nuclear Power Reactor Effluents," Sections IV.B.2, IV.B.3, and IV.C. Technical Specification 5.6.2 requires the Annual Radiological Environmental Operating Report to be submitted by May 15 of each year.

If you have any questions regarding this information, please contact Steven Reynolds, Regulatory Assurance Manager, at (815) 417-2800.

Respectfully,

Marri Marchionda
Site Vice President
Braidwood Station

cc: US NRC Regional Administrator, Region III
US NRC Senior Resident Inspector - Braidwood Station
NRR Project Manager - Braidwood Station
Illinois Emergency Management Agency - Division of Nuclear Safety

Docket No: 50-456
50-457

BRAIDWOOD STATION
UNITS 1 and 2

Annual Radiological
Environmental Operating Report

1 January through 31 December 2015

Prepared By

Teledyne Brown Engineering
Environmental Services

Braidwood Station
Braceville, IL 60407

May 2016

Intentionally left blank

Table Of Contents

Appendices

I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program (REMP) conducted for Exelon's Braidwood Station covers the period January 1, 2015 through December 31, 2015. During that time period 1,645 analyses were performed on 1,333 samples. In assessing all the data gathered for this report and comparing these results with preoperational data, it was concluded that the operation of Braidwood Station had no adverse radiological impact on the environment.

Surface, public, and ground/well water samples were analyzed for concentrations of tritium and gamma emitting nuclides. Surface water and public water samples were also analyzed for concentrations of gross beta. Gross beta and tritium activities detected were consistent with those detected in previous years. No fission or activation products were detected. As part of an effort to implement industry best practices, both gaseous and liquid station effluents were evaluated for all 10CFR61 required nuclides. Nuclides exceeding 1% relative abundance in the waste stream were added to the list of nuclides that Teledyne Brown evaluates in potentially impacted REMP matrices. For Braidwood Station, Ni-63 exceeds 1% relative abundance in the radwaste resins. Occasionally, Ni-63 is observed in liquid release tank quarterly composites, therefore, beginning in the fall of 2013 the station requested that Ni-63 be evaluated in the downstream surface water, sediment, and fish analyses. Ni-63 has not been observed in downstream surface water.

Fish (commercially and/or recreationally important species) and sediment samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected in fish. Nickel-63 was not detected in any fish or sediment samples analyzed. Two sediment samples had Cs-137. The concentration was consistent with levels observed during the preoperational years. No plant produced fission or activation products were found in sediment.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. No fission or activation products were detected.

High sensitivity I-131 analyses were performed on weekly air samples. All results were less than the minimum detectable concentration for I-131.

Cow milk samples were analyzed for concentrations of I-131 and gamma emitting nuclides. Iodine-131 was not detected in any milk samples. Concentrations of naturally occurring K-40 were detected. No fission or activation products were found and all required LLDs (Lower Limit of Detection) were met.

Food Product samples were analyzed for concentrations of gamma emitting nuclides. No plant produced fission or activation products were detected.

Environmental gamma radiation measurements were performed quarterly using

Optically Stimulated Luminescence Dosimeters (OSLD). Beginning in 2012, Exelon changed the type of dosimetry used for the Radiological Environmental Monitoring Program (REMP). Optically Stimulated Luminescent Dosimetry were deployed and Thermo-luminescent Dosimetry (TLD) were discontinued. This change may result in a step change in readings, up or down, depending on site characteristics. The relative comparison to control locations remains valid. OSLD technology is different than that used in a TLD but has the same purpose (to measure direct radiation).

II. Introduction

The Braidwood Station, consisting of two 3,587 MWt pressurized water reactors owned and operated by Exelon Corporation is located in Will County, Illinois. Unit No. 1 went critical on May 29, 1987. Unit No. 2 went critical on March 08, 1988. The site is located in northeastern Illinois, 15 miles south-southwest of Joliet, Illinois, 60 miles southwest of Chicago and southwest of the Kankakee River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE), Landauer Technologies and Environmental Inc. (Midwest Labs) on samples collected during the period January 1, 2015 through December 31, 2015.

A. Objective of the REMP

The objectives of the REMP are to:

1. Provide data on measurable levels of radiation and radioactive materials in the site environs.

2. Evaluate the relationship between quantities of radioactive material released from the plant and resultant radiation doses to individuals from principal pathways of exposure.

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.

2. Establishing baseline radiological data of media within those pathways.

3. Continuously monitoring those media before and during Station operation to assess Station radiological effects (if any) on man and the environment.

III. Program Description

A. Sample Collection

Samples for the Braidwood Station REMP were collected for Exelon Nuclear by Environmental Inc. (Midwest Labs). This section describes the

general collection methods used by Environmental Inc. (Midwest Labs) to obtain environmental samples for the Braidwood Station REMP in 2015. Sample locations and descriptions can be found in Table B–1 and Figures B–1 through B–3, Appendix B. The sampling methods used by Environmental Inc. are listed in Table B-2.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, public water, well water, fish, and sediment. Two gallon water samples were collected weekly from six surface water locations (BD-10, BD-25 [control], BD-38, BD-40, BD-55 and BD-56), and one weekly composite samples of public drinking water at location (BD-22) and ground/well water samples collected quarterly from eight locations (BD-13, BD-34, BD-35, BD-36, BD-37, BD-50, BD-51 and BD-54). All samples were collected in new unused plastic bottles, which were rinsed with source water prior to collection. Fish samples comprising the flesh of largemouth bass, golden redhorse, freshwater drum, smallmouth bass, and common carp were collected semiannually at three locations, BD-25 (control), BD-28 and BD-41. Sediment samples composed of recently deposited substrate were collected at three locations semiannually, BD-10, BD-25 (control), and BD-57.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate and airborne iodine. Air particulate samples were collected and analyzed weekly at eight locations (BD-02, BD-03, BD-04, BD-05, BD-06, BD-19, BD-20 and BD-21). The control location was BD-03. Airborne iodine and particulate samples were obtained at each location, using a vacuum pump with charcoal and glass fiber filters attached. The pumps were run continuously and sampled air at the rate of approximately one cubic foot per minute. The air filters and air iodine samples were replaced weekly and sent to the laboratory for analysis.

Terrestrial Environment

The terrestrial environment was evaluated by performing radiological analyses on milk and food product samples. Milk samples were collected biweekly at one location (BD-17) from May through October and monthly from November through April. Control location (BD-18) was missed twice (January 2015 and December 2015) but milk was available for the rest of 2015. All samples were collected in new unused two gallon plastic bottles from the bulk tank at each location, preserved with sodium bisulfite and

shipped promptly to the laboratory. Food products were collected annually in September at five locations (BD-Control, BD-Quad 1, BD-Quad 2, BD-Quad 3 and BD-Quad 4). The control location was BD-Control. Food products were unavailable for collection in September 2015 for locations BD-Quad 1, BD-Quad 3 and BD-Quad 4. Various types of samples were collected and placed in new unused plastic bags and sent to the laboratory for analysis.

Ambient Gamma Radiation

Beginning in 2012, Exelon changed the type of dosimetry used for the Radiological Environmental Monitoring Program (REMP). Optically Stimulated Luminescent Dosimeters (OSLD) were deployed and the use of Thermoluminescent Dosimeters (TLD) was discontinued. This change may result in a step change in readings, up or down, depending on site characteristics. The relative comparison to control locations remains valid. OSLD technology is different than that used in a TLD but has the same purpose (to measure direct radiation).

Each location consisted of 2 OSLDs. The OSLDs were exchanged quarterly and sent to Landauer for analysis. The OSLDs were placed at locations on and around the Braidwood Station site as follows:

An inner ring consisting of 16 locations (BD-101, BD-102, BD-103, BD-104, BD-105, BD-106, BD-107, BD-108, BD-109, BD-110, BD-111a, BD-112, BD-113a, BD-114, BD-115 and BD-116) at or near the site boundary.

An outer ring consisting of 16 locations (BD-201, BD-202, BD-203, BD-204, BD-205, BD-206, BD-207, BD-208, BD-209, BD-210, BD-211, BD-212, BD-213, BD-214, BD-215 and BD-216) extending to approximately 5 miles from the site.

An additional (other) set consisting of seven locations (BD-02, BD-04, BD-05, BD-06, BD-19, BD-20 and BD-21).

The balance of one location (BD-03) represents the control area.

The specific OSLD locations were determined by the following criteria:

1. The presence of relatively dense population;

2. Site meteorological data taking into account distance and elevation for each of the sixteen–22 1/2 degree sectors around the site

3. where estimated annual dose from Braidwood Station, if any, would be most significant.

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and Environmental Inc. (Midwest Labs) to analyze the environmental samples for radioactivity for the Braidwood Station REMP in 2015. The analytical procedures used by the laboratories are listed in Table B-2.

In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of beta emitters in public and surface water and air particulates.

2. Concentrations of gamma emitters in public, ground/well and surface water, air particulates, milk, fish, sediment and food products.

3. Concentrations of tritium in public, ground/well and surface water.

4. Concentrations of I-131 in air, milk and public water.

5. Concentrations of Ni-63 in surface water, fish and sediment.

6. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

The radiological and direct radiation data collected prior to Braidwood Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, Braidwood Station was considered operational at initial criticality. In addition, data was compared to previous years' operational data for consistency and trending. Several factors were important in the interpretation of the data:

1. <u>Lower Limit of Detection and Minimum Detectable Concentration</u>

The lower limit of detection (LLD) was defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD was intended as a before the

fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criteria for the presence of activity. All analyses were designed to achieve the required Braidwood Station detection capabilities for environmental sample analysis.

The MDC is the smallest concentration of radioactive material in a sample that will yield a net count, above system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal. The MDC is an *a postori* determination.

2. Net Activity Calculation and Reporting of Results

Net activity for a sample was calculated by subtracting background activity from the sample activity. Since the REMP measures extremely small changes in radioactivity in the environment, background variations may result in sample activity being lower than the background activity resulting in a negative number. An MDC was reported in all cases where positive activity was not detected.

Gamma spectroscopy results for each type of sample were grouped as follows:

For surface, ground/well water, and fish 12 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, I-131, Cs-134, Cs-137, Ba-140 and La-140 were reported.

For public water, sediment, air particulate, milk and vegetation 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, Cs-134, Cs-137, Ba-140 and La-140 were reported.

Means and standard deviations of the results were calculated. The standard deviations represent the variability of measured results for different samples rather than the single analysis uncertainty.

D. Program Exceptions

For 2015 the Braidwood Station REMP had a sample recovery rate in excess of 98.3%. Sample anomalies and missed samples are listed in the tables below:

Table D-1 LISTING OF SAMPLE ANOMALIES

Sample Type	Location Code	Collection Date	Reason
WW	BD-34, BD-35, BD-36, BD-37, BD-50	01/08/15	No sample; homeowners absent; water shut off. Samples collected. 01/15/15.
WW	BD-54	01/08/15	No sample; valve frozen. Sample collected 01/15/15.
MI	BD-17	01/08/15	No milk available. Sample collected 01/15/15.
A/I	BD-21	02/05/15	No access; road not plowed. POC notified; will collect next week.
OSLD	BD-21	02/05/15	No access; road not plowed. Sample collected 02/12/15.
A/I	BD-02	03/05/15	No apparent reason for the low reading of 163.2 hours.
A/I	BD-21	04/30/15	Regulator malfunction; pump removed for repair. Flowrate = 72 cfh. Flow of new pump (60 cfh) used for COC.
A/I	All samplers	06/25/15	Low reading at all samplers due to storm/tornado.
A/I	BD-03	07/23/15	Low reading of 150.7 hours due to tripped circuit breaker.
A/I	BD-03	07/30/15	Low reading of 25.7 hours due to tripped circuit breaker.
A/I	BD-03	09/17/15	Timer malfunction; collector replaced timer. Estimated time @ 167.1 hours based on previous weeks' time.
A/I	BD-05	10/22/15	Timer malfunction; collector replaced timer. Estimated time @ 168.0 hours based on previous weeks' time.

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

Sample Type	Location Code	Collection Date	Reason
A/I	BD-19	11/25/15	Low reading of 46.3 hours due to recent power restoration.
A/I	BD-19	12/03/15	Low vacuum of 8mHg; collector replaced pump.
PW	BD-22	12/24/15	Unable to collect sample; new lock on utility building; no key available. New key obtained by station on 12/28/15l Sample collected 12/29/15 @ 07:45.

Table D-2 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Collection Date	Reason
MI	BD-18	01/08/15	Farmer sold cows in 2014; milk not available until 02/01/15.
SW	BD-38, BD-55, BD-56	01/08/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	01/15/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	01/22/15	No sample; water frozen.
SW	BD-55, BD-56,	01/29/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	02/05/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	02/12/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	02/19/15	No sample; water frozen.
SW	BD-38, BD-55, BD-56	02/26/15	No sample; water frozen.

Table D-2 LISTING OF MISSED SAMPLES (continued)

Sample Type	Location Code	Collection Date	Reason
SW	BD-25, BD-38, BD-55, BD-56	03/05/15	No sample; water frozen.
SW	BD-55, BD-56,	03/12/15	No sample; water frozen.
OSLD	BD-210-2	07/02/15	OSLD found missing during quarterly exchange; collector placed new 3rd quarter OSLD.
OSLD	BD-201-1	09/01/15	OSLD found missing during monthly visual check; collector placed spare 291551 00133 8619.
OSLD	BD-201-2	09/01/15	OSLD found missing during monthly visual check; collector placed spare 291551 00134 8620.
VE	BD-Quad 1, 3, 4	09/23/15	After diligent search of quadrants, no root or broad leaf vegetation located.
A/I	BD-19	11/19/15	No power to sampler; POC notified.
M	BD-18	12/03/15	No sample available; farmer not milking at this time.

Air samples collected between the period of 08/27/15 through 09/03/15 at all locations BD-02, BD-03, BD-04, BD-05, BD-06, BD-19, BD-20, and BD-21 measured slightly elevated levels of gross beta. This is due to higher levels of dust in the air as a result of crop harvesting as expected at this time of year. The air sampler filter papers were observed to be darker than normal with a very heavy material deposition. Darker filter papers and similar results were also seen at other nearby Stations during the same time period.

Each program exception was reviewed to understand the causes of the program exception. Sampling and maintenance issues were reviewed with the personnel involved to prevent recurrence. Occasional equipment breakdowns, power outages and weather related issues were unavoidable.

The overall sample recovery rate indicates that the appropriate procedures and equipment are in place to assure reliable program implementation.

E. Program Changes

There were no program changes in 2015**.**

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken weekly and composited monthly at six locations (BD-10, BD-25 (control), BD-38, BD-40, BD-55 and BD-56). Of these locations, only BD-10 could be affected by Braidwood Station's effluent releases as it is downstream of the NPDES permitted outfall. The following analyses were performed.

Gross Beta

Samples from all locations were analyzed for concentrations of gross beta (Table C–I.1, Appendix C). Gross beta was detected in 59 of 67 samples. The values ranged from 2.3 to 12.7 pCi/L. Concentrations detected were consistent with those detected in previous years (Figures C–1 through C-3, Appendix C).

Tritium

Quarterly composites of weekly collections were analyzed for tritium activity (Table C–I.2, Appendix C). Tritium activity was detected in one sample. The value was 267 pCi/l (Figures C–4 through C-6, Appendix C).

Nickel-63

Monthly samples were analyzed for Nickel-63 activity (Table C–I.3, Appendix C). Nickel-63 was not detected and the required LLD was met.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting

nuclides (Table C–I.4, Appendix C). No nuclides were detected and all required LLDs were met.

2. Public Water

Monthly composites of weekly samples were made at one location (BD-22). This location could be affected by Braidwood Station's effluent releases. The following analyses were performed:

Gross Beta

Samples from the location were analyzed for concentrations of gross beta (Tables C–II.1, Appendix C). Gross beta was detected in 10 of 12 samples. The values ranged from 2.3 to 6.4 pCi/L. Concentrations detected were consistent with those detected in previous years (Figure C–7, Appendix C).

Tritium

Monthly composites of weekly samples from BD-22 were analyzed for tritium activity (Table C–II.2, Appendix C). Tritium was detected in nine of 12 samples. The concentration ranged from 220 to 572 pCi/L. Concentrations detected were consistent with those detected in previous years (Figure C–8, Appendix C).

Iodine

Monthly composites of weekly samples from the location were analyzed for I-131 (Table C-II.3, Appendix C). Iodine was not detected in any samples and the required LLD was met.

Gamma Spectrometry

Samples from the location were analyzed for gamma emitting nuclides (Table C–II.4, Appendix C). No nuclides were detected and all required LLDs were met.

3. Ground/Well Water

Quarterly samples were collected at eight locations (BD-13, BD-34, BD-35, BD-36, BD-37, BD-50, BD-51and BD-54). The following analyses were performed:

Tritium

Quarterly grab samples from the locations were analyzed for tritium activity (Table C–III.1, Appendix C). Tritium was not detected in any sample and the required LLD was met. (Figures C–9 through C–13, Appendix C).

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). No nuclides were detected and all required LLDs were met.

4. Fish

Fish samples comprised of largemouth bass, golden redhorse, freshwater drum, smallmouth bass, common carp, and largemouth bass were collected at three locations (BD-25, BD-28, and BD-41) semiannually. Location BD-28 could be affected by Braidwood Station's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portion of fish samples from all three locations was analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). No fission or activation products were found. No nuclides were detected and all required LLDs were met.

5. Sediment

Aquatic sediment samples were collected at three locations (BD-10, BD-25, and BD-57) semiannually. The locations at the Braidwood Station outfall to the Kanakakee River and downstream of the outfall, could be affected by Braidwood Station's effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from the location were analyzed for gamma emitting nuclides (Table C–V.1, Appendix C). Concentrations of the fission product Cs-137 were found at locations BD-10 and BD-57. The concentration ranged from 142 to 168 pCi/kg dry. The concentrations of Cs-137 at locations BD-10 and BD-57 were less than the required Cs-137 in sediment LLD of 180 pCi/kg dry. The activity detected was consistent with those detected in previous

years (29 pCi/kg to 260 pCi/kg from 1995 to 2006). No other

Braidwood fission or activation products were found and all required LLDs were met.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from eight locations on a weekly basis. The eight locations were separated into three groups: Near field samplers (BD-06, BD-19, BD-20 and BD-21), far field samplers within 10 km of the site (BD-02, BD-04 and BD-05) and the Control sampler between 10 and 30 km from the site (BD-03). The following analyses were performed:

Gross Beta

Weekly samples were analyzed for concentrations of beta emitters (Table C–VI.1 and C-VI.2, Appendix C). Detectable gross beta activity was observed at all locations. Comparison of results among the three groups aid in determining the effects, if any, resulting from the operation of Braidwood Station. The results from the near field (Group I) ranged from 5 E-03 to 38 E-02 pCi/m^3 with a mean of 17 E-02 pCi/m^3. The results from the far field (Group II) ranged from 5 E-03 to 43 E-02 pCi/m^3 with a mean of 17 E-02 pCi/m^3. The results from the Control location (Group III) ranged from 6 E-03 to 32 E-02 pCi/m^3 with a mean of 17 E-02 pCi/m^3. Comparison of the 2015 air particulate data with previous years data indicate no effects from the operation of Braidwood Station. In addition a comparison of the weekly mean values for 2015 indicate no notable differences among the three groups (Figures C–14 through C-18, Appendix C).

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–VI.3, Appendix C). No nuclides were detected and all required LLDs were met.

b. Airborne Iodine

Continuous air samples were collected from eight locations (BD-02, BD-03, BD-04, BD-05, BD-06, BD-19, BD-20 and BD-21) and analyzed weekly for I-131 (Table C–VII.1, Appendix C). All results were less than the minimum detectable concentration for I-131.

C. Terrestrial Environment

1. Milk

Samples were collected from two locations (BD-17 and control location BD-18). Sampling frequencies were increased to biweekly in May and continued through October and monthly sampling was performed November through April. The following analyses were performed:

Iodine-131

Milk samples from the indicator location were analyzed for concentrations of I-131 (Table C–VIII.1, Appendix C). Iodine-131 was not detected in any samples. All required LLDs were met.

Gamma Spectrometry

Each milk sample was analyzed for concentrations of gamma emitting nuclides (Table C–VIII.2, Appendix C). No nuclides were detected and all required LLDs were met.

2. Food Products

Food product samples were collected at five locations (BD-Control, BD-Quad 1, BD-Quad 2, BD-Quad 3 and BD-Quad 4) when available. Four locations, (located downwind, BD-Quad 1, BD-Quad 2, BD-Quad 3 and BD-Quad 4) could be affected by Braidwood Station's effluent releases. Food products were unavailable for collection in September 2015 for locations BD-Quad 1, BD-Quad 3 and BD-Quad 4. The following analysis was performed:

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–IX.1, Appendix C). No nuclides were detected and all required LLDs were met.

D. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Optically Stimulated Luminescence Dosimeter (OSLD). Eighty Six OSLD locations were established around the site. Results of OSLD measurements are listed in Tables C–X.1 to C–X.3, Appendix C.

Most OSLD measurements were below 30 mrem/quarter, with a range of 13.8 to 31.3 mrem/quarter. A comparison of the Inner Ring, Outer Ring and Other data to the Control Location data, indicate that the ambient gamma radiation levels from all locations were similar.

E. Land Use Survey

A Land Use Survey conducted during August 2015 around the Braidwood Station was performed by Environmental Inc. (Midwest Labs) for Exelon Nuclear to comply with section 12.5.2 of the Braidwood Station's Offsite Dose Calculation Manual. The purpose of the survey was to document the nearest resident, milk producing animal and garden of greater than 500 ft^2 in each of the sixteen 22 ½ degree sectors around the site. For dose calculation, a garden is assumed at the nearest residence. There were no changes required to the Braidwood Station REMP, as a result of this survey. The results of this survey are summarized below.

Distance in Miles from the Braidwood Station Reactor Buildings			
Sector	Residence Miles	Livestock Miles	Milk Farm Miles
(A) N	0.5	2.6	-
(B) NNE	0.9	-	-
(C) NE	0.7	0.9	-
(D) ENE	0.8	3.3	-
(E) E	1.5	2.3	-
(F) ESE	2.2	2.3	-
(G) SE	2.7	2.7	-
(H) SSE	4.5	-	-
(J) S	4.2	4.8	-
(K) SSW	1.3	5.3	5.5
(L) SW	0.4	1.2	-
(M) WSW	0.5	-	-
(N) W	0.4	1.6	8.7
(P) WNW	0.4	-	-
(Q) NW	0.4	-	-
(R) NNW	0.4	-	-

Distance in Miles from the Braidwood Station ISFSI PAD, 2015	
Sector	Residence Miles
(N) W	0.7
(P) WNW	0.7
(Q) NW	0.7
(R) NNW	0.7

F. Errata Data

1. More accurate distances to the ISFSI pad were updated in the ODCM in 2015. The distances reported in the 2014 AREOR were incorrect. The distances to ISFSI OSLD dosimeters are included on page B-3. Exact distances for each location are included in Appendix G – Errata Data.

2. Page B-6, Figure B-1, Inner Ring and Other map, was updated to reflect the corrected distances there were included in the 2015 ODCM revision.

A. Summary of Results – Inter-Laboratory Comparison Program

The primary and secondary laboratories analyzed Performance Evaluation (PE) samples of air particulate, air iodine, milk, soil, vegetation

and water matrices (Appendix D). The PE samples supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP) were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

   Analytics' evaluation report provides a ratio of laboratory results and Analytics' known value. Since flag values are not assigned by Analytics, TBE-ES evaluates the reported ratios based on internal QC requirements, which are based on the DOE MAPEP criteria.

2. ERA Evaluation Criteria

   ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, State Specific PT program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

   MAPEP's evaluation report provides an acceptance range with associated flag values.

   The MAPEP defines three levels of performance: Acceptable (flag = "A"), Acceptable with Warning (flag = "W"), and Not Acceptable (flag = "N"). Performance is considered acceptable when a mean result for the specified analyte is ± 20% of the reference value. Performance is acceptable with warning when a mean result falls in the range from ± 20% to ± 30% of the reference value (i.e., 20% < bias < 30%). If the bias is greater than 30%, the results are deemed not acceptable.

For the TBE laboratory, 129 out of 139 analyses performed met the specified acceptance criteria. Ten analyses (AP - Cr-51, U-234/233, Gr A, Sr-90; Soil Sr-90; Water - Ni-3, Sr-89, Sr-90, U natural; Vegetation Sr-90 samples) did not meet the specified acceptance criteria for the following reasons:

Note: The Department of Energy (DOE) Mixed Analyte Performance Evaluation Program (MAPEP) samples are created to mimic conditions

found at DOE sites which do not resemble typical environmental samples obtained at commercial nuclear power facilities.

1. Teledyne Brown Engineering's Analytics' June 2015 air particulate Cr-51 result of 323 ± 45.5 pCi was higher than the known value of 233 pCi with a ratio of 1.39. The upper ratio of 1.30 (acceptable with warning) was exceeded. The air particulate sample is counted at a distance above the surface of the detector to avoid detector summing which could alter the results. Chromium-51 has the shortest half-life (27.7 days) and the lowest gamma energy (320.08 keV) of this mixed nuclide sample. Additionally, Cr-51 has only one gamma energy and also has a low intensity (9.38 gamma photons produced per 100 disintegrations). This geometry produces a larger error for the Cr-51 and other gamma emitters as any distance from the detector decreases the counting rate and the probability of accurately detecting the nuclide energy. Taking into consideration the uncertainty, the activity of Cr-51 overlaps with the known value at a ratio of 1.19, which would statistically be considered acceptable. NCR 15-18

2. Teledyne Brown Engineering's MAPEP March 2015 soil Sr-90 result of 286 Total Bq/kg was lower than the known value of 653 Bq/kg, exceeding the lower acceptance range of 487 Bq/kg. The failure was due to incomplete digestion of the sample. Incomplete digestion of samples causes some of the sample to be left behind and is not present in the digested sample utilized for analysis. The procedure has been updated to include a more robust digestion using stirring during the heating phase. The MAPEP September 2014 soil Sr-90 series prior to this study was evaluated as acceptable with a result of 694 and an acceptance range of 601 – 1115 Bq/kg. The MAPEP September 2015 series soil Sr-90 after this study was evaluated as acceptable with a result of 429 and an acceptance range of 298 – 553 Bq/kg. We feel the issue is specific to the March 2015 MAPEP sample. NCR 15-13

3. Teledyne Brown Engineering's MAPEP March 2015 air particulate U-234/233 result of 0.0211 ± 0.0120 Bq/sample was higher than the known value of 0.0155 Bq/sample, exceeding the upper acceptance range of 0.0202 Bq/sample. Although evaluated as a failure, taking into consideration the uncertainty, TBE's result would overlap with the known value, which is statistically considered acceptable. MAPEP spiked the sample with significantly more U-238 activity (a found to known ratio of 0.96) than the normal U-234/233. Due to the extremely low activity, it was difficult to quantify the U-234/233. NCR 15-13

4. Teledyne Brown Engineering's MAPEP March 2015 air particulate gross alpha result of 0.448 Bq/sample was lower than the known value of 1.77 Bq/sample, exceeding the lower acceptance range of 0.53 Bq/sample. The instrument efficiency used for gross alpha is determined using a non-attenuated alpha standard. The MAPEP filter has the alphas embedded in the filter, requiring an attenuated efficiency. When samples contain alpha particles that are embedded in the sample media, due to the size of the alpha particle, some of the alpha particles are absorbed by the media and cannot escape to be counted. When the sample media absorbs the alpha particles this is known as self-absorption or attenuation. The calibration must include a similar configuration/media to correct for the attenuation. In order to correct the low bias, TBE will create an attenuated efficiency for MAPEP air particulate filters. The MAPEP September series air particulate gross alpha result of 0.47 Bq/sample was evaluated as acceptable with a range of 0.24 – 1.53 Bq/sample. Unlike the MAPEP samples, air particulate Gross alpha analyses for power plants are not evaluated as a direct count sample. Power plant air particulate filters for gross alpha go through an acid digestion process prior to counting and the digested material is analyzed. NCR 15-13

5. Teledyne Brown Engineering's MAPEP September water Ni-63 result of 11.8 ± 10.8 Bq/L was higher than the known value of 8.55 Bq/L, exceeding the upper acceptance range of 11.12 Bq/L. The Ni-63 half-life is approximately 100 years. Nickel-63 is considered to be a "soft" or low energy beta emitter, which means that the beta energy is very low. The maximum beta energy for Ni-63 is approximately 65 keV, much lower than other more common nuclides such as Co-60 (maximum beta energy of 1549 keV). The original sample was run with a 10 mL aliquot which was not sufficient for the low level of Ni-63 in the sample. The rerun aliquot of 30 mL produced an acceptable result of 8.81 Bq/L. NCR 15-21

6. Teledyne Brown Engineering's MAPEP September air particulate Sr-90 result of 1.48 Bq/sample was lower than the known value of 2.18 Bq/sample, exceeding the lower acceptance range of 1.53 Bq/sample. In the past, MAPEP has added substances (unusual compounds found in DOE complexes) to various matrices that have resulted in incomplete removal of the isotope of interest for the laboratories analyzing the cross checks. TBE suspects that this may be the cause of this error. Many compounds, if not properly accounted for or removed in the sample matrix, can cause interferences to either indicate lower activity or higher activity. TBE will no longer analyze the air particulate Sr-90 through MAPEP but

will participate in the Analytics cross check program to perform both Sr-89 and Sr-90 in the air particulate matrix. NCR 15-21

7. Teledyne Brown Engineering's MAPEP September vegetation Sr-90 result of 0.386 Bq/sample was lower than the known value of 1.30 Bq/sample, exceeding the lower acceptance range of 0.91 Bq/sample. In the past, MAPEP has added substances (unusual compounds found in DOE complexes) to various matrices that have resulted in incomplete removal of the isotope of interest for the laboratories analyzing the cross checks. TBE suspects that this maybe the cause of this error. Many compounds, if not properly accounted for or removed in the sample matrix, can cause interferences to either indicate lower activity or higher activity. Results from previous performance evaluations were reviewed and shown to be acceptable. NCR 15-21

8. & 9. Teledyne Brown Engineering's ERA May water Sr-89/90 results of 45.2 and 28.0 pCi/L, respectively were lower than the known values of 63.2 and 41.9 pCi/L, respectively, exceeding the lower acceptance limits of 51.1 and 30.8 pCi/L, respectively. The yields were on the high side of the TBE acceptance range, which indicates the present of excess calcium contributed to the yield, resulting in low results. NCR 15-09

10. Teledyne Brown Engineering's ERA November water Uranium natural result of 146.9 pCi/L was higher than the known value of 56.2 pCi/L, exceeding the upper acceptance limit of 62.4 pCi/L. The technician failed to dilute the original sample, but used the entire 12 mL sample. When the results were recalculated without the dilution and using the 12 mL aliquot, the result of 57.16 agreed with the assigned value of 56.2. NCR 15-19

The Inter-Laboratory Comparison Program provides evidence of "in control" counting systems and methods, and that the laboratories are producing accurate and reliable data.

Intentionally left blank

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT ANNUAL SUMMARY

Intentionally left blank

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	GR-B	67	4	5.5 (48/55) (2.3/12.7)	6.7 (11/12) (3.9/12.7)	9.1 (12/12) (6.0/12.7)	BD-40 INDICATOR BRAIDWOOD STATION COOLING LAKE ONSITE	0
	H-3	24	200	267 (1/20)	<LLD	267 (1/4)	BD-10 INDICATOR KANKAKEE RIVER DOWNSTREAM 5.4 MILES NE OF SITE	0
	NI-63	67	30	<LLD	<LLD	-		0
	GAMMA	67						
	MN-54		15	<LLD	<LLD	-		0
	CO-58		15	<LLD	<LLD	-		0
	FE-59		30	<LLD	<LLD	-		0
	CO-60		15	<LLD	<LLD	-		0
	ZN-65		30	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	NB-95		15	<LLD	<LLD	-		0
	ZR-95		30	<LLD	<LLD	-		0
	I-131		15	<LLD	<LLD	-		0
	CS-134		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0
	BA-140		60	<LLD	<LLD	-		0
	LA-140		15	<LLD	<LLD	-		0
PUBLIC WATER (PCI/LITER)	GR-B	12	4	3.7 (10/12) (2.3/6.4)	NA	3.7 (10/12) (2.3/6.4)	BD-22 INDICATOR WILMINGTON 6.0 MILES NE OF SITE	0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
PUBLIC WATER (PCI/LITER)	H-3	12	200	330 (9/12) (220/572)	NA	330 (9/12) (220/572)	BD-22 INDICATOR WILMINGTON 6.0 MILES NE OF SITE	0
	I-131	12	1	<LLD	NA	-		0
	GAMMA	12						
	MN-54		15	<LLD	NA	-		0
	CO-58		15	<LLD	NA	-		0
	FE-59		30	<LLD	NA	-		0
	CO-60		15	<LLD	NA	-		0
	ZN-65		30	<LLD	NA	-		0
	NB-95		15	<LLD	NA	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
PUBLIC WATER (PCI/LITER)	ZR-95		30	<LLD	NA	-		0
	CS-134		15	<LLD	NA	-		0
	CS-137		18	<LLD	NA	-		0
	BA-140		60	<LLD	NA	-		0
	LA-140		15	<LLD	NA	-		0
GROUND WATER (PCI/LITER)	H-3	32	200	<LLD	NA	-		0
	GAMMA	30						
	MN-54		15	<LLD	NA	-		0
	CO-58		15	<LLD	NA	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUND WATER (PCI/LITER)	FE-59		30	<LLD	NA	-		0
	CO-60		15	<LLD	NA	-		0
	ZN-65		30	<LLD	NA	-		0
	NB-95		15	<LLD	NA	-		0
	ZR-95		30	<LLD	NA	-		0
	I-131		15	<LLD	NA	-		0
	CS-134		15	<LLD	NA	-		0
	CS-137		18	<LLD	NA	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUND WATER (PCI/LITER)	BA-140		60	<LLD	NA	-		0
	LA-140		15	<LLD	NA	-		0
FISH (PCI/KG WET)	NI-63	12	260	<LLD	<LLD	-		0
	GAMMA MN-54	12	130	<LLD	<LLD	-		0
	CO-58		130	<LLD	<LLD	-		0
	FE-59		260	<LLD	<LLD	-		0
	CO-60		130	<LLD	<LLD	-		0
	ZN-65		260	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
FISH (PCI/KG WET)	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	I-131		NA	<LLD	<LLD	-		0
	CS-134		130	<LLD	<LLD	-		0
	CS-137		150	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
FISH (PCI/KG WET)	LA-140		NA	<LLD	<LLD	-		0
SEDIMENT (PCI/KG DRY)	NI-63	6	260	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SEDIMENT (PCI/KG DRY)	GAMMA	6						
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	CS-134		150	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SEDIMENT (PCI/KG DRY)	CS-137		180	155 (2/4) (142/168)	<LLD	168 (1/2)	BD-10 INDICATOR KANKAKEE RIVER DOWNSTREAM 5.4 MILES NE OF SITE	0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	412	10	17 (361/362) (5/43)	17 (50/50) (6/32)	18 (52/52) (5/34)	BD-04 INDICATOR ESSEX 4.8 MILES SSE OF SITE	0
	GAMMA	32						
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
AIR PARTICULATE (E-3 PCI/CU.METER)	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	CS-134		50	<LLD	<LLD	-		0
	CS-137		60	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	411	70	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
MILK (PCI/LITER)	I-131	36	1	<LLD	NA	-		0
	GAMMA	36						
	MN-54		NA	<LLD	NA	-		0
	CO-58		NA	<LLD	NA	-		0
	FE-59		NA	<LLD	NA	-		0
	CO-60		NA	<LLD	NA	-		0
	ZN-65		NA	<LLD	NA	-		0
	NB-95		NA	<LLD	NA	-		0
	ZR-95		NA	<LLD	NA	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD | **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL | **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
MILK (PCI/LITER)	CS-134		15	<LLD	NA	-		0
	CS-137		18	<LLD	NA	-		0
	BA-140		60	<LLD	NA	-		0
	LA-140		15	<LLD	NA	-		0
VEGETATION (PCI/KG WET)	GAMMA	4						
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR BRAIDWOOD STATION, 2015

NAME OF FACILITY: BRAIDWOOD **DOCKET NUMBER: 50-456 & 50-457 2015**

LOCATION OF FACILITY: BRACEVILLE, IL **REPORTING PERIOD: ANNUAL**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
VEGETATION (PCI/KG WET)	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	CS-134		60	<LLD	<LLD	-		0
	CS-137		80	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLIREM/QTR.)	OSLD-QUARTERLY	341	NA	20.9 (333/333) (13.8/31.3)	20.6 (8/8) (19.1/23.8)	26.3 (4/4) (22.8/31.3)	BD-105-4 INDICATOR 0.20 MILES SE	0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

Intentionally left blank

APPENDIX B

LOCATION DESIGNATION, DISTANCE & DIRECTION, AND SAMPLE COLLECTION & ANALYTICAL METHODS

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Braidwood Station, 2015

Location	Location Description	Distance & Direction From Site
A. Surface Water		
BD-10	Kankakee River Downstream (indicator)	5.4 miles NE
BD-25	Kankakee River Upstream (control)	9.6 miles E
BD-38	Main Drainage Ditch (indicator)	1.5 miles SE
BD-40	Braidwood Station Cooling Lake (indicator)	Onsite
BD-55	North Pond Fatlan Site (indicator)	0.6 miles NE
BD-56	South Pond Fatlan Site (indictor)	0.6 miles NE
B. Drinking (Potable) Water		
BD-22	Wilmington (indicator)	6.0 miles NE
C. Ground/Well Water		
BD-13	Braidwood City Hall Well (indicator)	1.7 miles NNE
BD-34	Gibson Well (indicator)	4.7 miles E
BD-35	Joly Well (indicator)	4.7 miles E
BD-36	Hutton Well (indicator)	4.7 miles E
BD-37	Nurczyk Well (indicator)	4.7 miles E
BD-50	Skole Well (indicator)	4.7 miles E
BD-51	Fatlan Well (indicator)	0.6 miles NE
BD-54	Cash Well (indicator)	0.9 miles NE
D. Milk - bi-weekly / monthly		
BD-17	Halpin's Dairy (indicator)	5.5 miles SSW
BD-18	Biros' Farm (control)	8.7 miles W
E. Air Particulates / Air Iodine		
BD-02	Custer Park (indicator)	5.0 miles E
BD-03	County Line Road (control)	6.2 miles ESE
BD-04	Essex (indicator)	4.8 miles SSE
BD-05	Gardner (indicator)	5.5 miles SW
BD-06	Godley (indicator)	0.5 miles WSW
BD-19	Nearsite NW (indicator)	0.3 miles NW
BD-20	Nearsite N (indicator)	0.6 miles N
BD-21	Nearsite NE (indicator)	0.5 miles NE
F. Fish		
BD-25	Kankakee River, Upstream (control)	9.6 miles E
BD-28	Kankakee River, Discharge (indicator)	5.4 miles E
BD-41	Cooling Lake (indicator)	1.0 mile E
G. Sediment		
BD-10	Kankakee River, Downstream (indicator)	5.4 miles NE
BD-25	Kankakee River Upstream (control)	9.6 miles E
BD-57	Circulating Water Blowdown Discharge (indicator)	5.4 miles E

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Braidwood Station, 2015

Location	Location Description	Distance & Direction From Site
H. Food Products		
Quadrant 1	Clark Farm	3.8 miles ENE
Quadrant 2	W.F. Soltwisch	4.5 miles SSE
Quadrant 3	Terri Schultz	4.8 miles SSW
Quadrant 4	Bruce Sinkular	1.9 miles NNW
Control	Gorman Farm	9.0 miles NE
I. Environmental Dosimetry - OSLD		
Inner Ring		
BD-101-3 and -4		0.5 miles N
BD-102-1 and -2		1.1 miles NNE
BD-103-1 and -2		1.0 mile NE
BD-104-1 and -2		0.7 miles ENE
BD-105-1 and -2		2.2 miles E
BD-106-1 and -2		2.5 miles ESE
BD-107-1 and -2		3.2 miles SE
BD-108-1 and -2		3.2 miles SSE
BD-109-1 and -2		3.8 miles S
BD-110-1 and -2		2.8 miles SSW
BD-111a-1 and -2		1.4 miles SW
BD-112-1 and -2		0.7 miles WSW
BD-113a-1 and -2		0.5 miles W
BD-114-1 and -2		0.4 miles WNW
BD-115-1 and -2		0.3 miles NW
BD-116-1		0.4 miles NNW
BD-116-2		0.5 miles NNW
Outer Ring		
BD-201-1 and -2		4.2 miles N
BD-202-1 and -2		4.8 miles NNE
BD-203-1 and -2		4.9 miles NE
BD-204-1 and -2		4.3 miles ENE
BD-205-1 and -2		4.0 miles E
BD-206-1 and -2		4.5 miles ESE
BD-207-1 and -2		4.5 miles SE
BD-208-1 and -2		4.5 miles SSE
BD-209-1 and -2		4.8 miles S
BD-210-1 and -2		5.3 miles SSW
BD-211-1 and -2		4.8 miles SW
BD-212-3 and -4		5.0 miles WSW
BD-213-3 and -4		4.8 miles W
BD-214-1 and -2		4.3 miles WNW
BD-215-1 and -2		4.5 miles NW
BD-216-1 and -2		4.0 miles NNW
Other		
BD-02-1 and -2	Custer Park (indicator)	5.0 miles E
BD-04-1 and -2	Essex (indicator)	4.8 miles SSE
BD-05-1 and -2	Gardner (indicator)	5.5 miles SW
BD-06-1 and -2	Godley (indicator)	0.5 miles WSW
BD-19-1 and -2	Nearsite NW (indicator)	0.3 miles NW
BD-20-1 and -2	Nearsite N (indicator)	0.6 miles N
BD-21-1 and -2	Nearsite NE (indicator)	0.5 miles NE

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Braidwood Station, 2015

Location	Location Description	Distance & Direction From Site
I. Environmental Dosimetry – OSLD (cont'd)		
Control		
BD-03-1 and -2	13000 W. Road	6.2 miles ESE
ISFSI		
BD-104-3 and -4		0.12 miles E
BD-105-3 and -4		0.22 miles SE
BD-110-3 and -4		0.17 miles SE

Distance in Miles from the Braidwood Station ISFSI Pad, 2015

Sector	Residence Miles
(N) W	0.7
(P) WNW	0.7
(Q) NW	0.7
(R) NNW	0.7

Distance in Miles from the Braidwood Station Reactor Buildings, 2015

Sector	Residence Miles	Livestock Miles	Milk Farm Miles
(A) N	0.5	2.6	-
(B) NNE	0.9	-	-
(C) NE	0.7	0.9	-
(D) ENE	0.8	3.3	-
(E) E	1.5	2.3	-
(F) ESE	2.2	2.3	-
(G) SE	2.7	2.7	-
(H) SSE	4.5	-	-
(J) S	4.2	4.8	-
(K) SSW	1.3	5.3	5.5
(L) SW	0.4	1.2	-
(M) WSW	0.5	-	-
(N) W	0.4	1.6	8.7
(P) WNW	0.4	-	-
(Q) NW	0.4	-	-
(R) NNW	0.4	-	-

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Braidwood Station, 2015

Sample Medium	Analysis	Sampling Method	Analytical Procedure Number
Surface Water	Gamma Spectroscopy	Monthly composite from weekly grab samples.	TBE, TBE-2007 Gamma emitting radioisotope analysis
Surface Water	Gross Beta	Monthly composite from weekly grab samples.	TBE, TBE-2008 Gross Alpha and/or Gross Beta activity in various matrices
Surface Water	Tritium	Quarterly composite from weekly grab samples.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Surface Water	Nickel-63	Monthly composite from weekly grab samples.	TBE, TBE-2013 Radionickel activity in various matrices
Drinking Water	Gross Beta	Monthly composite from weekly composite samples.	TBE, TBE-2008 Gross Alpha and/or Gross Beta activity in various matrices
Drinking Water	Gamma Spectroscopy	Monthly composite from weekly composite samples.	TBE, TBE-2007 Gamma emitting radioisotope analysis
Drinking Water	Tritium	Monthly composite from weekly composite samples.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Drinking Water	Iodine	Monthly composite from weekly composite samples.	TBE, TBE-2031 Radioactive Iodine in drinking water
Ground/Well Water	Gamma Spectroscopy	Quarterly grab samples.	TBE, TBE-2007 Gamma emitting radioisotope analysis
Ground/Well Water	Tritium	Quarterly grab samples.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Fish	Nickel-63	Semi-annual samples collected via electroshocking or other techniques	TBE, TBE-2013 Radionickel activity in various matrices
Fish	Gamma Spectroscopy	Samples collected twice annually via electro-shocking or other techniques	TBE-2007 Gamma emitting radioisotope analysis
Sediment	Gamma Spectroscopy	Semi-annual grab samples	TBE, TBE-2007 Gamma emitting radioisotope analysis
Sediment	Nickel-63	Semi-annual grab samples	TBE, TBE-2013 Radionickel activity in various matrices

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Braidwood Station, 2015

Sample Medium	Analysis	Sampling Method	Analytical Procedure Number
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices
Air Particulates	Gamma Spectroscopy	Quarterly composite of each station	TBE, TBE-2007 Gamma emitting radioisotope analysis
Air Iodine	Gamma Spectroscopy	Weekly composite of continuous air sampling through charcoal filter	TBE, TBE-2007 Gamma emitting radioisotope analysis
Milk	I-131	Bi-weekly grab sample May through October. Monthly all other times	TBE, TBE-2012 Radioiodine in various matrices
Milk	Gamma Spectroscopy	Bi-weekly grab sample May through October. Monthly all other times	TBE, TBE-2007 Gamma emitting radioisotope analysis
Food Products	Gamma Spectroscopy	Annual grab samples.	TBE, TBE-2007 Gamma emitting radioisotope analysis
OSLD	Optically Stimulated Luminescence Dosimetry	Quarterly OSLDs comprised of two Al_2O_3:C Landauer Incorporated elements.	Landauer Incorporated

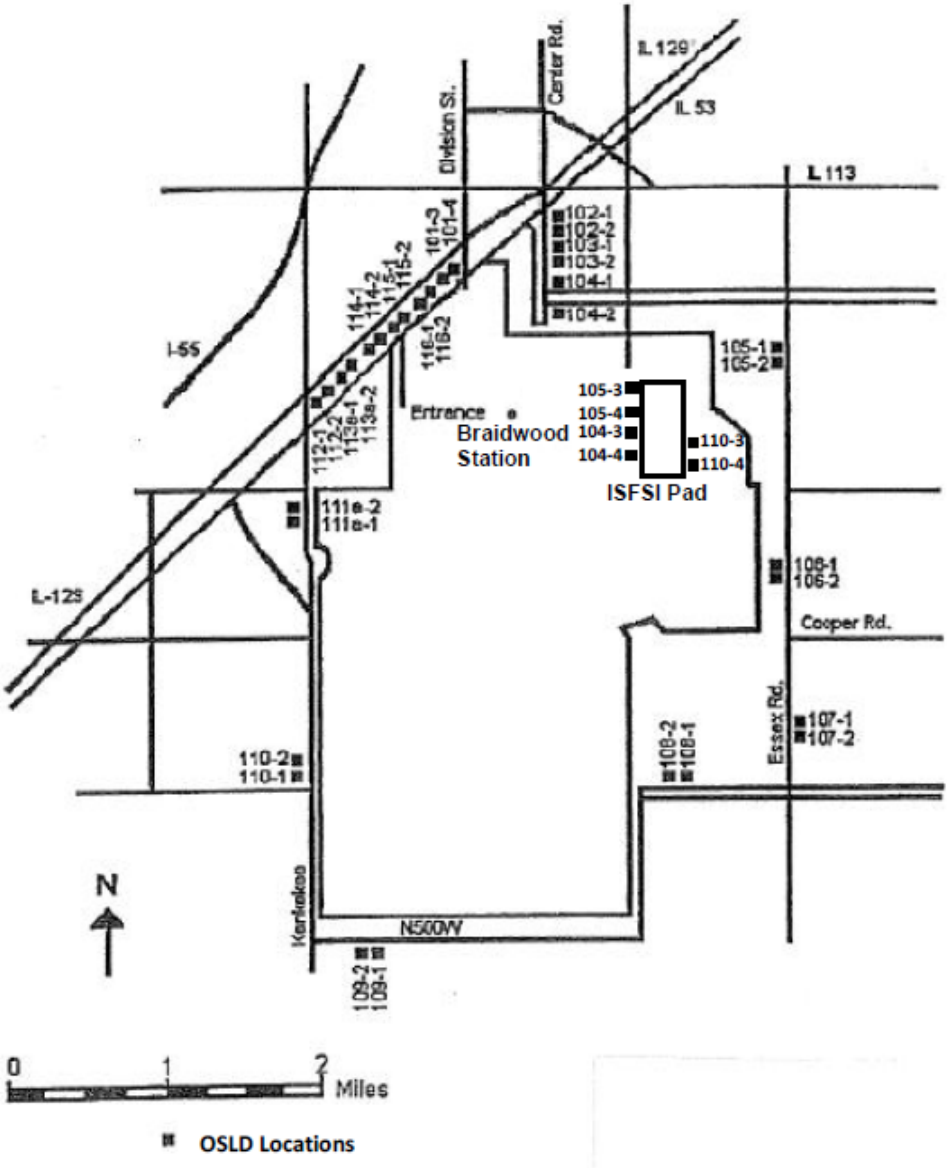


Figure B-1
Inner Ring and Other OSLD Locations of the
Braidwood Station, 2015

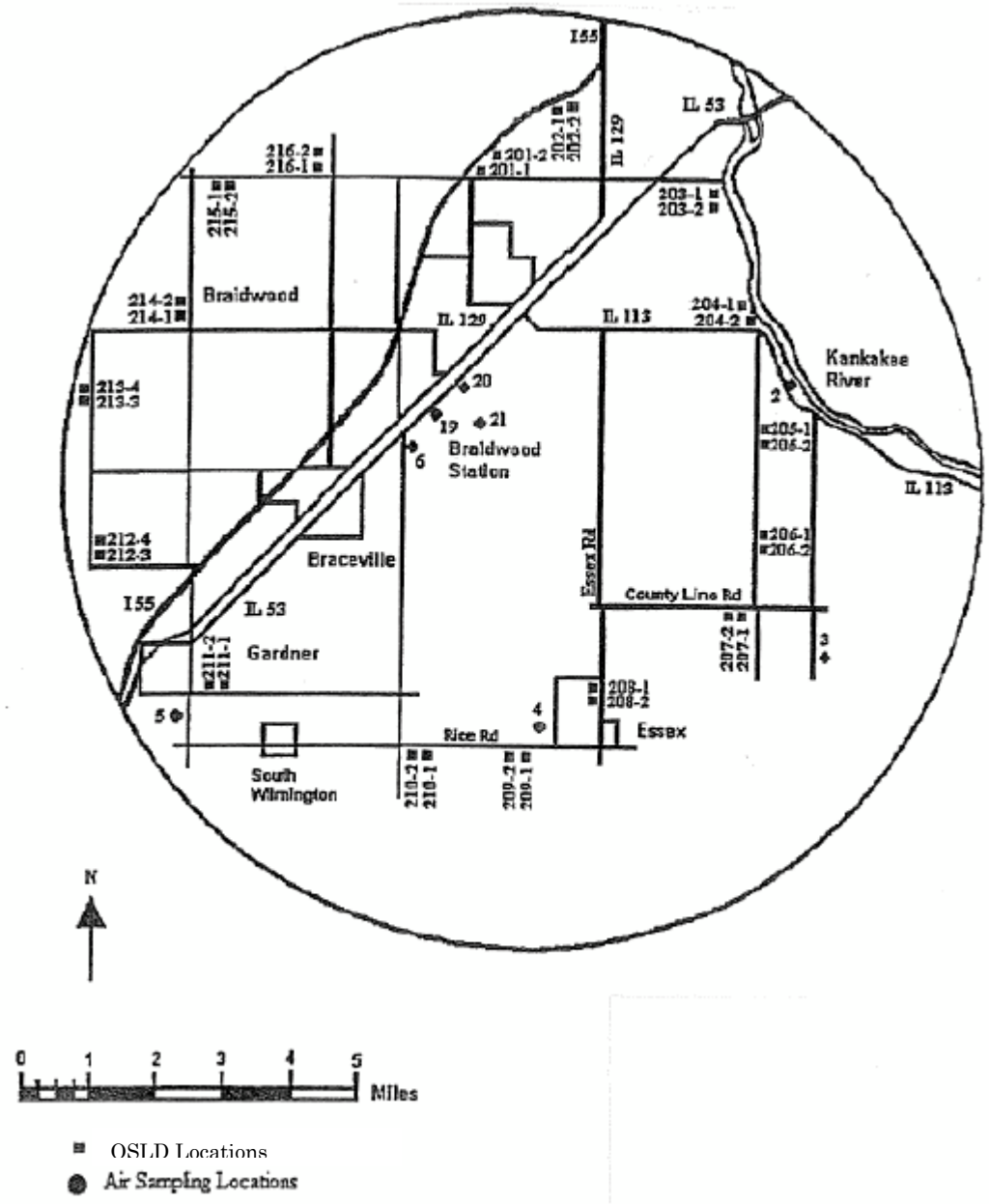


Figure B-2
Fixed Air Sampling and Outer Ring OSLD Locations
of the Braidwood Station, 2015

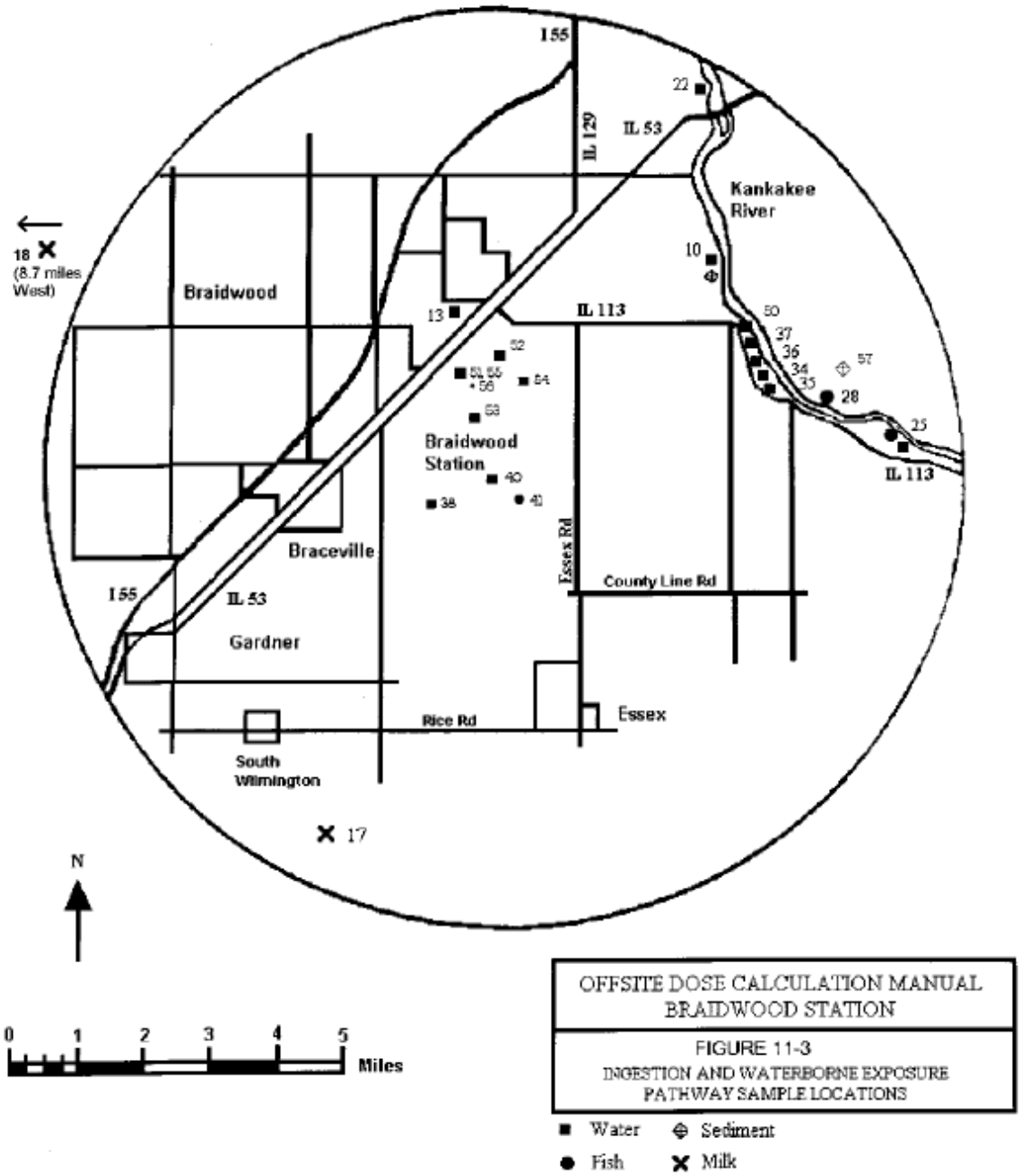


Figure B-3
Ingestion and Waterborne Exposure Pathway Sample Locations
of the Braidwood Station, 2015

Intentionally left blank

APPENDIX C

DATA TABLES AND FIGURES
PRIMARY LABORATORY

Intentionally left blank

Table C-I.1 **CONCENTRATIONS OF GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-10	BD-25	BD-38	BD-40	BD-55	BD-56
01/08/15 - 01/29/15	6.2 ± 2.2	12.7 ± 3.4	5.4 ± 3.0 (1)	10.0 ± 2.9	(1)	(1)
02/05/15 - 02/26/15	4.5 ± 2.0	11.8 ± 2.9	(1)	8.3 ± 2.4	(1)	(1)
03/19/15 - 03/26/15	5.3 ± 2.0	5.8 ± 2.4	3.9 ± 2.1	6.0 ± 2.4	2.6 ± 1.7	< 2.4 (1)
04/01/15 - 04/30/15	3.6 ± 2.5	6.7 ± 2.9	7.2 ± 3.3	11.1 ± 3.4	2.8 ± 1.8	< 3.6
05/07/15 - 05/28/15	3.3 ± 2.0	4.5 ± 2.2	4.0 ± 2.2	6.4 ± 2.4	< 2.5	< 3.0
06/04/15 - 06/25/15	4.7 ± 2.0	6.1 ± 2.3	< 3.1	7.2 ± 2.4	3.1 ± 1.8	< 2.9
07/02/15 - 07/30/15	4.0 ± 1.8	6.9 ± 2.2	< 3.1	9.0 ± 2.4	3.5 ± 1.7	4.8 ± 2.0
08/06/15 - 08/27/15	5.2 ± 2.1	4.9 ± 2.1	5.5 ± 2.6	11.7 ± 2.6	3.2 ± 1.7	5.2 ± 2.2
09/03/15 - 09/24/15	3.4 ± 1.8	3.9 ± 1.8	3.3 ± 2.2	8.7 ± 2.4	2.3 ± 1.5	5.1 ± 2.0
10/01/15 - 10/29/15	3.4 ± 1.9	< 2.7	3.4 ± 2.2	7.8 ± 2.4	2.5 ± 1.6	5.6 ± 2.1
11/05/15 - 11/25/15	3.9 ± 1.9	4.7 ± 2.1	8.8 ± 3.1	12.7 ± 3.0	3.3 ± 1.7	6.7 ± 2.3
12/03/15 - 12/31/15	3.3 ± 1.7	5.5 ± 1.9	4.4 ± 2.1	10.5 ± 2.5	3.7 ± 1.6	4.8 ± 2.0
MEAN	4.2 ± 1.9	6.7 ± 5.8	5.1 ± 3.7	9.1 ± 4.2	3.0 ± 0.9	5.4 ± 1.4

Table C-I.2 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-10	BD-25	BD-38	BD-40	BD-55	BD-56
01/08/15 - 03/26/15	267 ± 139	< 199	< 198	< 199	< 195	< 196
04/01/15 - 06/25/15	< 188	< 185	< 191	< 189	< 183	< 187
07/02/15 - 09/24/15	< 187	< 196	< 196	< 197	< 194	< 193
10/01/15 - 12/31/15	< 188	< 190	< 187	< 189	< 185	< 187
MEAN	267 ± 0	-	-	-	-	-

Table C-I.3 **CONCENTRATIONS OF NI-63 IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-10	BD-25	BD-38	BD-40	BD-55	BD-56
01/29/15 - 01/29/15	< 17	< 18	< 17 (1)	< 16	(1)	(1)
02/05/15 - 02/26/15	< 25	< 25	(1)	< 21	(1)	(1)
03/19/15 - 03/26/15	< 14	< 14	< 15	< 15	< 14 (1)	< 14 (1)
04/01/15 - 04/30/15	< 14	< 16	< 14	< 14	< 14	< 15
05/07/15 - 05/28/15	< 4	< 4	< 4	< 4	< 4	< 4
06/04/15 - 06/25/15	< 28	< 28	< 28	< 29	< 27	< 28
07/02/15 - 07/30/15	< 14	< 14	< 11	< 14	< 13	< 13
08/06/15 - 08/27/15	< 15	< 15	< 15	< 15	< 15	< 4
09/03/15 - 09/24/15	< 16	< 16	< 15	< 15	< 15	< 15
10/01/15 - 10/29/15	< 18	< 18	< 18	< 18	< 17	< 17
11/05/15 - 11/25/15	< 15	< 15	< 14	< 15	< 14	< 14
12/03/15 - 12/31/15	< 14	< 14	< 14	< 14	< 14	< 14
MEAN	-	-				

THE MEAN AND TWO STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-I.4 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-10	01/08/15 - 01/29/15	< 4	< 4	< 9	< 4	< 7	< 5	< 8	< 13	< 4	< 5	< 30	< 9
	02/05/15 - 02/26/15	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 9	< 1	< 1	< 16	< 6
	03/05/15 - 03/26/15	< 4	< 4	< 8	< 3	< 7	< 4	< 6	< 10	< 3	< 4	< 23	< 8
	04/01/15 - 04/30/15	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 9	< 1	< 1	< 16	< 5
	05/07/15 - 05/28/15	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 9	< 1	< 2	< 15	< 5
	06/04/15 - 06/25/15	< 4	< 4	< 9	< 4	< 7	< 4	< 8	< 14	< 4	< 4	< 27	< 8
	07/02/15 - 07/30/15	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 15	< 5
	08/06/15 - 08/27/15	< 3	< 4	< 9	< 3	< 8	< 4	< 7	< 12	< 4	< 4	< 28	< 10
	09/03/15 - 09/24/15	< 8	< 8	< 12	< 8	< 16	< 7	< 13	< 14	< 7	< 7	< 38	< 12
	10/01/15 - 10/29/15	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 22	< 7
	11/05/15 - 11/25/15	< 4	< 5	< 10	< 4	< 9	< 5	< 9	< 14	< 4	< 5	< 33	< 10
	12/03/15 - 12/31/15	< 4	< 4	< 8	< 4	< 7	< 4	< 6	< 14	< 3	< 4	< 30	< 10
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-25	01/08/15 - 01/29/15	< 5	< 6	< 13	< 6	< 10	< 5	< 8	< 12	< 4	< 5	< 31	< 11
	02/05/15 - 02/26/15	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 12	< 2	< 2	< 19	< 7
	03/12/15 - 03/26/15	< 3	< 4	< 8	< 4	< 7	< 4	< 6	< 11	< 4	< 4	< 26	< 8
	04/01/15 - 04/30/15	< 2	< 2	< 6	< 2	< 4	< 3	< 5	< 14	< 2	< 2	< 23	< 6
	05/07/15 - 05/28/15	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 12	< 2	< 3	< 23	< 8
	06/04/15 - 06/25/15	< 4	< 5	< 9	< 4	< 8	< 6	< 8	< 14	< 4	< 5	< 32	< 12
	07/02/15 - 07/30/15	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 14	< 2	< 3	< 26	< 9
	08/06/15 - 08/27/15	< 3	< 3	< 8	< 4	< 7	< 4	< 6	< 13	< 3	< 3	< 25	< 9
	09/03/15 - 09/24/15	< 7	< 5	< 13	< 7	< 14	< 7	< 10	< 13	< 6	< 6	< 34	< 7
	10/01/15 - 10/29/15	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 7	< 1	< 1	< 14	< 4
	11/05/15 - 11/25/15	< 3	< 3	< 7	< 3	< 7	< 3	< 7	< 12	< 3	< 3	< 22	< 6
	12/03/15 - 12/31/15	< 4	< 5	< 10	< 4	< 9	< 5	< 8	< 13	< 4	< 4	< 27	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

Table C-I.4 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-38	01/29/15 - 01/29/15	< 4	< 5	< 10	< 5	< 8	< 5	< 9	< 14	< 5	< 5	< 30	< 9
	02/05/15 - 02/26/15	(1)											
	03/12/15 - 03/26/15	< 4	< 4	< 8	< 4	< 7	< 4	< 6	< 11	< 4	< 4	< 25	< 8
	04/01/15 - 04/30/15	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 11	< 2	< 2	< 18	< 6
	05/07/15 - 05/28/15	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 9	< 1	< 2	< 16	< 5
	06/04/15 - 06/25/15	< 5	< 5	< 11	< 5	< 10	< 5	< 10	< 13	< 4	< 6	< 27	< 9
	07/02/15 - 07/30/15	< 2	< 2	< 3	< 1	< 3	< 2	< 3	< 10	< 1	< 2	< 17	< 5
	08/06/15 - 08/27/15	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 7	< 1	< 1	< 12	< 4
	09/03/15 - 09/24/15	< 6	< 6	< 13	< 6	< 15	< 7	< 13	< 12	< 6	< 7	< 30	< 9
	10/01/15 - 10/29/15	< 3	< 3	< 7	< 2	< 6	< 3	< 5	< 11	< 2	< 3	< 23	< 8
	11/05/15 - 11/25/15	< 4	< 4	< 8	< 3	< 8	< 4	< 7	< 13	< 4	< 4	< 29	< 8
	12/03/15 - 12/31/15	< 4	< 5	< 10	< 4	< 8	< 5	< 9	< 15	< 4	< 5	< 32	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-40	01/08/15 - 01/29/15	< 5	< 6	< 13	< 8	< 10	< 6	< 9	< 14	< 4	< 6	< 39	< 15
	02/05/15 - 02/26/15	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 10	< 1	< 1	< 16	< 4
	03/05/15 - 03/26/15	< 4	< 5	< 9	< 4	< 8	< 4	< 8	< 11	< 4	< 5	< 26	< 7
	04/01/15 - 04/30/15	< 1	< 1	< 3	< 1	< 2	< 1	< 3	< 7	< 1	< 1	< 13	< 3
	05/07/15 - 05/28/15	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 20	< 6
	06/04/15 - 06/25/15	< 4	< 4	< 10	< 6	< 7	< 4	< 7	< 15	< 4	< 4	< 28	< 10
	07/02/15 - 07/30/15	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 10	< 1	< 2	< 17	< 5
	08/06/15 - 08/27/15	< 3	< 4	< 9	< 3	< 8	< 4	< 7	< 12	< 3	< 4	< 26	< 8
	09/03/15 - 09/24/15	< 5	< 5	< 12	< 5	< 11	< 6	< 7	< 12	< 5	< 6	< 31	< 8
	10/01/15 - 10/29/15	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 9	< 2	< 2	< 17	< 5
	11/05/15 - 11/25/15	< 4	< 5	< 10	< 5	< 7	< 5	< 8	< 12	< 4	< 5	< 31	< 14
	12/03/15 - 12/31/15	< 3	< 5	< 9	< 5	< 8	< 5	< 9	< 14	< 4	< 5	< 28	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-I.4 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD		Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-55	01/08/15 - 01/29/15	(1)												
	02/05/15 - 02/26/15	(1)												
	03/19/15 - 03/26/15		< 6	< 6	< 12	< 6	< 11	< 6	< 11	< 15	< 5	< 6	< 34	< 10
	04/01/15 - 04/30/15		< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 15	< 2	< 2	< 24	< 7
	05/07/15 - 05/28/15		< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 10	< 2	< 2	< 19	< 6
	06/04/15 - 06/25/15		< 4	< 4	< 9	< 6	< 8	< 4	< 7	< 15	< 4	< 4	< 29	< 9
	07/02/15 - 07/30/15		< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 20	< 7
	08/06/15 - 08/27/15		< 3	< 3	< 7	< 4	< 6	< 4	< 7	< 11	< 3	< 3	< 23	< 7
	09/03/15 - 09/24/15		< 7	< 7	< 17	< 6	< 11	< 6	< 12	< 11	< 6	< 7	< 36	< 11
	10/01/15 - 10/29/15		< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 11	< 2	< 2	< 20	< 6
	11/05/15 - 11/25/15		< 4	< 5	< 10	< 4	< 9	< 5	< 8	< 14	< 4	< 4	< 34	< 9
	12/03/15 - 12/31/15		< 4	< 4	< 10	< 4	< 8	< 4	< 7	< 12	< 4	< 4	< 27	< 9
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-
BD-56	01/08/15 - 01/29/15	(1)	-	-	-	-	-	-	-	-	-	-	-	-
	02/05/15 - 02/26/15	(1)	-	-	-	-	-	-	-	-	-	-	-	-
	03/19/15 - 03/26/15		< 5	< 6	< 13	< 6	< 9	< 6	< 9	< 14	< 5	< 6	< 32	< 11
	04/01/15 - 04/30/15		< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 20	< 8
	05/07/15 - 05/28/15		< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 10	< 2	< 2	< 16	< 6
	06/04/15 - 06/25/15		< 5	< 5	< 12	< 4	< 10	< 5	< 9	< 15	< 4	< 5	< 34	< 11
	07/02/15 - 07/30/15		< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 10	< 2	< 2	< 18	< 7
	08/06/15 - 08/27/15		< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 13	< 3	< 4	< 28	< 9
	09/03/15 - 09/24/15		< 5	< 6	< 11	< 5	< 11	< 5	< 9	< 10	< 6	< 5	< 29	< 8
	10/01/15 - 10/29/15		< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 19	< 6
	11/05/15 - 11/25/15		< 4	< 4	< 10	< 4	< 9	< 4	< 6	< 13	< 3	< 4	< 30	< 10
	12/03/15 - 12/31/15		< 4	< 4	< 9	< 4	< 8	< 5	< 7	< 12	< 3	< 4	< 27	< 10
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-II.1 **CONCENTRATIONS OF GROSS BETA IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-22
12/31/14 - 01/29/15	2.3 ± 1.5
01/29/15 - 02/26/15	4.0 ± 1.6
02/26/15 - 04/01/15	6.4 ± 1.8
04/01/15 - 04/30/15	2.5 ± 1.4
04/30/15 - 05/28/15	< 2.0
05/28/15 - 07/02/15	3.8 ± 1.6
07/02/15 - 07/30/15	< 2.2
07/30/15 - 08/27/15	3.8 ± 1.5
08/27/15 - 10/01/15	3.0 ± 1.5
10/01/15 - 10/29/15	3.3 ± 1.6
10/29/15 - 12/03/15	3.9 ± 1.7
12/03/15 - 12/31/15	3.7 ± 1.4
MEAN	3.7 ± 2.3

Table C-II.2 **CONCENTRATIONS OF TRITIUM IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-22
12/31/14 - 01/29/15	280 ± 112
01/29/15 - 02/26/15	364 ± 137
02/26/15 - 04/01/15	329 ± 140
04/01/15 - 04/30/15	< 196
04/30/15 - 05/28/15	< 173
05/28/15 - 07/02/15	272 ± 128
07/02/15 - 07/30/15	278 ± 135
07/30/15 - 08/27/15	257 ± 124
08/27/15 - 10/01/15	< 195
10/01/15 - 10/29/15	220 ± 125
10/29/15 - 12/03/15	572 ± 152
12/03/15 - 12/31/15	395 ± 134
MEAN	330 ± 212

Table C-II.3 **CONCENTRATIONS OF I-131 IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-22
12/31/14 - 01/29/15	< 0.8
01/29/15 - 02/26/15	< 0.8
02/26/15 - 04/01/15	< 0.7
04/01/15 - 04/30/15	< 0.6
04/30/15 - 05/28/15	< 0.8
05/28/15 - 07/02/15	< 0.7
07/02/15 - 07/30/15	< 0.8
07/30/15 - 08/27/15	< 0.6
08/27/15 - 10/01/15	< 0.9
10/01/15 - 10/29/15	< 0.8
10/29/15 - 12/03/15	< 0.3
12/03/15 - 12/31/15	< 0.3
MEAN	-

THE MEAN AND TWO STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES

Table C-II.4 **CONCENTRATIONS OF GAMMA EMITTERS IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-22	12/31/14 - 01/29/15	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 19	< 7
	01/29/15 - 02/26/15	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 16	< 4
	02/26/15 - 04/01/15	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 17	< 6
	04/01/15 - 04/30/15	< 1	< 1	< 2	< 1	< 2	< 1	< 1	< 1	< 1	< 16	< 4
	04/30/15 - 05/28/15	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 1	< 1	< 18	< 5
	05/28/15 - 07/02/15	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 21	< 6
	07/02/15 - 07/30/15	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 21	< 7
	07/30/15 - 08/27/15	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 2	< 2	< 18	< 5
	08/27/15 - 10/01/15	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 24	< 7
	10/01/15 - 10/29/15	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 3	< 3	< 23	< 6
	10/29/15 - 12/03/15	< 7	< 7	< 15	< 4	< 12	< 8	< 12	< 6	< 6	< 38	< 12
	12/03/15 - 12/31/15	< 5	< 4	< 9	< 4	< 10	< 5	< 8	< 5	< 4	< 31	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-

Table C-III.1 **CONCENTRATIONS OF TRITIUM IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-13	BD-34	BD-35	BD-36	BD-37	BD-50	BD-51	BD-54
01/15/15 - 01/15/15	< 159	< 190	< 191	< 191	< 195	< 190	< 154	< 195
04/09/15 - 04/09/15	< 200	< 200	< 200	< 199	< 200	< 198	< 197	< 200
07/10/15 - 07/10/15	< 184	< 188	< 193	< 179	< 193	< 193	< 193	< 190
10/06/15 - 10/06/15	< 184	< 199	< 200	< 196	< 200	< 199	< 195	< 200
MEAN	-	-	-	-	-	-	-	-

Table C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-13	01/08/15 - 01/08/15	< 5	< 7	< 10	< 7	< 16	< 6	< 9	< 12	< 6	< 6	< 34	< 10
	04/09/15 - 04/09/15	< 4	< 5	< 11	< 4	< 9	< 6	< 8	< 14	< 4	< 5	< 28	< 8
	07/10/15 - 07/10/15	< 5	< 5	< 12	< 7	< 13	< 7	< 9	< 10	< 5	< 6	< 29	< 9
	10/06/15 - 10/06/15	< 5	< 5	< 11	< 6	< 12	< 6	< 11	< 12	< 5	< 6	< 34	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-34	01/15/15 - 01/15/15	< 5	< 5	< 9	< 5	< 10	< 5	< 8	< 8	< 4	< 5	< 24	< 8
	04/09/15 - 04/09/15	< 4	< 4	< 8	< 3	< 8	< 4	< 6	< 12	< 4	< 4	< 24	< 8
	07/10/15 - 07/10/15	< 7	< 7	< 16	< 7	< 16	< 7	< 11	< 12	< 6	< 7	< 34	< 12
	10/06/15 - 10/06/15	< 5	< 5	< 8	< 4	< 9	< 6	< 9	< 15	< 6	< 5	< 33	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-35	01/15/15 - 01/15/15	< 6	< 6	< 11	< 7	< 13	< 7	< 11	< 14	< 6	< 9	< 36	< 13
	04/09/15 - 04/09/15	< 3	< 5	< 5	< 4	< 6	< 5	< 7	< 12	< 4	< 4	< 28	< 13
	07/10/15 - 07/10/15	< 5	< 4	< 10	< 6	< 10	< 5	< 9	< 8	< 5	< 5	< 21	< 8
	10/06/15 - 10/06/15	< 6	< 6	< 12	< 5	< 12	< 6	< 11	< 12	< 5	< 6	< 33	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-36	01/15/15 - 01/15/15	< 7	< 8	< 16	< 5	< 15	< 8	< 13	< 14	< 7	< 8	< 36	< 11
	04/09/15 - 04/09/15	< 3	< 4	< 8	< 3	< 6	< 4	< 6	< 10	< 3	< 3	< 22	< 6
	07/10/15 - 07/10/15	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 8	< 5	< 5	< 24	< 6
	10/06/15 - 10/06/15	< 4	< 7	< 12	< 7	< 9	< 7	< 11	< 14	< 7	< 6	< 35	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-37	01/15/15 - 01/15/15	< 6	< 5	< 12	< 5	< 10	< 6	< 9	< 10	< 5	< 5	< 28	< 8
	04/09/15 - 04/09/15	< 5	< 4	< 10	< 5	< 9	< 5	< 9	< 13	< 4	< 4	< 28	< 10
	07/10/15 - 07/10/15	< 5	< 5	< 8	< 6	< 10	< 5	< 8	< 8	< 5	< 5	< 23	< 8
	10/06/15 - 10/06/15	< 5	< 5	< 11	< 5	< 10	< 6	< 10	< 12	< 5	< 5	< 28	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

Table C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-50	01/15/15 - 01/15/15	< 5	< 6	< 11	< 6	< 14	< 7	< 10	< 11	< 6	< 7	< 31	< 10
	04/09/15 - 04/09/15	< 5	< 5	< 11	< 6	< 11	< 5	< 9	< 14	< 5	< 5	< 32	< 10
	07/10/15 - 07/10/15	< 6	< 7	< 11	< 6	< 8	< 6	< 9	< 10	< 6	< 8	< 32	< 9
	10/06/15 - 10/06/15	< 4	< 6	< 14	< 4	< 10	< 5	< 7	< 11	< 4	< 4	< 30	< 12
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-51	01/08/15 - 01/08/15	< 4	< 5	< 8	< 5	< 9	< 5	< 8	< 8	< 4	< 5	< 24	< 8
	04/09/15 - 04/09/15	< 4	< 5	< 11	< 5	< 9	< 5	< 9	< 14	< 5	< 4	< 29	< 8
	07/10/15 - 07/10/15	< 8	< 9	< 19	< 9	< 18	< 8	< 14	< 11	< 7	< 9	< 37	< 15
	10/06/15 - 10/06/15	< 6	< 7	< 14	< 7	< 15	< 8	< 13	< 15	< 7	< 7	< 38	< 10
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-54	01/15/15 - 01/15/15	< 7	< 5	< 14	< 5	< 12	< 7	< 8	< 10	< 5	< 8	< 26	< 11
	04/09/15 - 04/09/15	< 5	< 6	< 13	< 5	< 11	< 7	< 12	< 14	< 5	< 6	< 36	< 13
	07/10/15 - 07/10/15	< 5	< 7	< 13	< 6	< 12	< 7	< 12	< 10	< 6	< 7	< 29	< 8
	10/06/15 - 10/06/15	< 6	< 6	< 9	< 7	< 11	< 6	< 9	< 13	< 6	< 6	< 29	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

Table C-IV.1 **CONCENTRATIONS OF NICKEL-63 AND GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	Ni-63	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
BD-25														
Golden Redhorse	05/04/15	< 39	< 59	< 56	< 132	< 58	< 107	< 67	< 121	< 695	< 51	< 54	< 1050	< 377
Freshwater Drum	05/04/15	< 39	< 79	< 97	< 219	< 68	< 137	< 105	< 173	< 930	< 66	< 76	< 1259	< 249
Golden Redhorse	10/22/15	< 38	< 41	< 58	< 115	< 60	< 109	< 53	< 96	< 281	< 53	< 43	< 520	< 96
Smallmouth Bass	10/22/15	< 33	< 65	< 84	< 194	< 127	< 165	< 86	< 124	< 254	< 87	< 79	< 539	< 69
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-	-
BD-28														
Golden Redhorse	05/04/15	< 37	< 56	< 70	< 160	< 68	< 118	< 87	< 148	< 747	< 68	< 57	< 1105	< 306
Common Carp	05/04/15	< 38	< 70	< 85	< 212	< 63	< 157	< 90	< 171	< 1032	< 81	< 78	< 1291	< 404
Golden Redhorse	10/22/15	< 41	< 66	< 85	< 153	< 28	< 140	< 56	< 116	< 218	< 64	< 62	< 499	< 73
Smallmouth Bass	10/22/15	< 43	< 65	< 84	< 222	< 66	< 235	< 119	< 195	< 290	< 85	< 98	< 592	< 157
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-	-
BD-41														
Largemouth Bass	05/04/15	< 40	< 63	< 76	< 167	< 57	< 128	< 67	< 136	< 742	< 56	< 67	< 1041	< 275
Common Carp	05/04/15	< 32	< 51	< 70	< 138	< 47	< 136	< 69	< 110	< 694	< 51	< 52	< 965	< 247
Largemouth Bass	10/22/15	< 34	< 56	< 47	< 157	< 55	< 119	< 78	< 130	< 188	< 55	< 53	< 441	< 106
Common Carp	10/22/15	< 35	< 55	< 73	< 167	< 72	< 162	< 67	< 150	< 247	< 81	< 90	< 426	< 111
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-	-

Table C-V.1 CONCENTRATIONS OF NICKEL-63 AND GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

SITE	COLLECTION PERIOD	Ni-63	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-10	05/14/15	< 255	< 68	< 79	< 189	< 99	< 202	< 100	< 156	< 70	168 ± 88	< 571	< 132
	10/06/15	< 239	< 127	< 103	< 283	< 90	< 206	< 127	< 211	< 109	< 146	< 626	< 136
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-25	05/14/15	< 253	< 83	< 89	< 220	< 72	< 203	< 115	< 190	< 88	< 141	< 583	< 179
	10/06/15	< 227	< 78	< 68	< 213	< 97	< 232	< 98	< 167	< 95	< 100	< 473	< 107
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-57	05/14/15	< 238	< 106	< 97	< 254	< 101	< 275	< 123	< 195	< 92	142 ± 85	< 740	< 258
	10/06/15	< 225	< 74	< 69	< 107	< 82	< 194	< 86	< 142	< 48	< 104	< 442	< 82
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

Table C-VI.1 **CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP I - NEAR FIELD				GROUP II - FAR FIELD			GROUP III - CONTROL LOCATION
	BD-06	BD-19	BD-20	BD-21	BD-02	BD-04	BD-05	BD-03
12/31/14 - 01/08/15	31 ± 5	25 ± 4	21 ± 4	26 ± 5	28 ± 5	22 ± 4	30 ± 5	18 ± 4
01/08/15 - 01/15/15	21 ± 5	22 ± 5	17 ± 4	18 ± 4	21 ± 5	21 ± 5	22 ± 5	22 ± 5
01/15/15 - 01/22/15	23 ± 5	28 ± 5	21 ± 5	26 ± 5	18 ± 4	23 ± 5	22 ± 5	20 ± 5
01/22/15 - 01/29/15	14 ± 4	9 ± 4	12 ± 4	14 ± 4	13 ± 4	13 ± 4	12 ± 4	16 ± 4
01/29/15 - 02/05/15	13 ± 4	12 ± 4	13 ± 4	19 ± 3	13 ± 4	17 ± 4	15 ± 4	16 ± 4
02/05/15 - 02/12/15	23 ± 4	21 ± 4	20 ± 4	(1)	21 ± 4	22 ± 4	22 ± 4	24 ± 4
02/12/15 - 02/19/15	23 ± 5	21 ± 5	23 ± 5	22 ± 5	19 ± 5	17 ± 5	20 ± 5	25 ± 5
02/19/15 - 02/26/15	32 ± 5	35 ± 5	30 ± 5	37 ± 5	36 ± 5	29 ± 5	31 ± 5	28 ± 5
02/26/15 - 03/05/15	17 ± 4	15 ± 4	14 ± 4	17 ± 4	12 ± 4	17 ± 4	18 ± 4	21 ± 5
03/05/15 - 03/12/15	15 ± 4	14 ± 4	13 ± 4	14 ± 4	15 ± 4	14 ± 4	15 ± 4	15 ± 4
03/12/15 - 03/19/15	13 ± 4	16 ± 4	17 ± 4	12 ± 4	15 ± 4	12 ± 4	13 ± 4	14 ± 4
03/19/15 - 03/26/15	14 ± 4	18 ± 4	14 ± 4	22 ± 5	17 ± 4	18 ± 4	18 ± 4	17 ± 4
03/26/15 - 04/01/15	17 ± 5	17 ± 5	14 ± 4	13 ± 4	18 ± 5	13 ± 4	16 ± 4	14 ± 4
04/01/15 - 04/09/15	11 ± 3	8 ± 3	14 ± 4	13 ± 3	14 ± 3	13 ± 3	9 ± 3	12 ± 3
04/09/15 - 04/16/15	16 ± 4	15 ± 4	18 ± 4	14 ± 4	14 ± 4	17 ± 4	17 ± 4	17 ± 4
04/16/15 - 04/23/15	12 ± 4	9 ± 4	15 ± 4	13 ± 4	13 ± 4	17 ± 4	12 ± 4	11 ± 4
04/23/15 - 04/30/15	14 ± 4	9 ± 3	12 ± 4	11 ± 4	12 ± 4	12 ± 4	10 ± 3	14 ± 4
04/30/15 - 05/07/15	9 ± 4	15 ± 4	15 ± 4	10 ± 4	12 ± 4	13 ± 4	13 ± 4	11 ± 4
05/07/15 - 05/14/15	6 ± 3	5 ± 3	5 ± 3	5 ± 3	5 ± 3	5 ± 3	6 ± 3	6 ± 3
05/14/15 - 05/21/15	11 ± 4	9 ± 3	13 ± 4	14 ± 4	10 ± 3	14 ± 4	9 ± 3	10 ± 4
05/21/15 - 05/28/15	17 ± 5	14 ± 4	13 ± 4	12 ± 4	14 ± 4	12 ± 4	12 ± 4	13 ± 4
05/28/15 - 06/04/15	9 ± 4	13 ± 4	13 ± 4	11 ± 4	11 ± 4	12 ± 4	11 ± 4	10 ± 4
06/04/15 - 06/11/15	14 ± 4	16 ± 4	14 ± 4	14 ± 4	18 ± 4	15 ± 4	15 ± 4	13 ± 4
06/11/15 - 06/18/15	6 ± 3	10 ± 4	9 ± 4	< 3	9 ± 4	11 ± 4	9 ± 4	11 ± 4
06/18/15 - 06/25/15	16 ± 4	12 ± 4	12 ± 5	12 ± 5	15 ± 4	12 ± 4	11 ± 4	15 ± 5
06/25/15 - 07/02/15	9 ± 4	10 ± 4	10 ± 4	10 ± 4	10 ± 4	8 ± 4	10 ± 4	12 ± 4
07/02/15 - 07/09/15	10 ± 4	8 ± 4	11 ± 4	12 ± 4	14 ± 4	11 ± 4	12 ± 4	7 ± 3
07/09/15 - 07/16/15	8 ± 4	11 ± 4	13 ± 4	11 ± 4	9 ± 4	12 ± 4	9 ± 4	8 ± 4
07/16/15 - 07/23/15	15 ± 4	14 ± 4	15 ± 4	16 ± 4	14 ± 4	18 ± 4	16 ± 4	12 ± 4
07/23/15 - 07/30/15	14 ± 5	17 ± 5	21 ± 5	14 ± 5	17 ± 5	15 ± 5	13 ± 4	(1)
07/30/15 - 08/06/15	21 ± 5	14 ± 4	21 ± 5	23 ± 5	21 ± 5	23 ± 5	22 ± 5	(1)
08/06/15 - 08/13/15	19 ± 4	18 ± 4	16 ± 4	20 ± 4	20 ± 4	21 ± 4	21 ± 4	18 ± 4
08/13/15 - 08/20/15	20 ± 5	17 ± 5	16 ± 4	19 ± 5	21 ± 5	18 ± 5	19 ± 5	15 ± 4
08/20/15 - 08/27/15	14 ± 4	18 ± 4	17 ± 4	18 ± 4	17 ± 4	20 ± 4	19 ± 4	17 ± 4
08/27/15 - 09/03/15	38 ± 6	36 ± 5	36 ± 5	36 ± 5	33 ± 5	34 ± 5	43 ± 6	32 ± 5
09/03/15 - 09/10/15	33 ± 5	30 ± 5	30 ± 5	30 ± 5	32 ± 5	24 ± 5	30 ± 5	31 ± 6
09/10/15 - 09/17/15	17 ± 4	18 ± 4	17 ± 4	20 ± 4	16 ± 4	24 ± 4	18 ± 4	20 ± 4
09/17/15 - 09/24/15	20 ± 4	16 ± 4	17 ± 4	16 ± 4	14 ± 4	15 ± 4	15 ± 4	20 ± 4
09/24/15 - 10/01/15	20 ± 4	22 ± 5	21 ± 4	19 ± 4	16 ± 4	19 ± 4	21 ± 5	20 ± 4
10/01/15 - 10/08/15	15 ± 4	13 ± 4	12 ± 4	12 ± 4	12 ± 4	15 ± 4	15 ± 4	9 ± 3
10/08/15 - 10/15/15	20 ± 5	25 ± 5	21 ± 5	19 ± 4	20 ± 5	19 ± 5	23 ± 5	18 ± 4
10/15/15 - 10/22/15	29 ± 5	23 ± 5	25 ± 5	27 ± 5	23 ± 5	27 ± 5	27 ± 5	26 ± 5
10/22/15 - 10/29/15	14 ± 4	14 ± 4	13 ± 4	11 ± 4	16 ± 4	18 ± 4	14 ± 4	12 ± 4
10/29/15 - 11/05/15	19 ± 4	16 ± 4	18 ± 4	14 ± 4	17 ± 4	19 ± 4	20 ± 4	19 ± 4
11/05/15 - 11/12/15	21 ± 5	17 ± 4	21 ± 5	24 ± 5	18 ± 5	24 ± 5	20 ± 5	20 ± 5
11/12/15 - 11/19/15	17 ± 4	(1)	19 ± 4	19 ± 4	18 ± 4	25 ± 5	19 ± 4	18 ± 4
11/19/15 - 11/25/15	15 ± 5	19 ± 13	14 ± 5	13 ± 5	13 ± 5	14 ± 5	15 ± 5	18 ± 5
11/25/15 - 12/03/15	19 ± 4	16 ± 4	20 ± 4	14 ± 3	17 ± 4	15 ± 3	18 ± 4	14 ± 3
12/03/15 - 12/10/15	29 ± 5	25 ± 5	26 ± 5	30 ± 5	33 ± 6	34 ± 6	26 ± 5	27 ± 5
12/10/15 - 12/17/15	13 ± 4	16 ± 4	15 ± 4	18 ± 4	14 ± 4	13 ± 4	15 ± 4	15 ± 4
12/17/15 - 12/24/15	26 ± 5	21 ± 4	30 ± 5	22 ± 5	24 ± 5	28 ± 5	26 ± 5	21 ± 4
12/24/15 - 12/31/15	16 ± 4	15 ± 4	14 ± 4	14 ± 4	14 ± 4	20 ± 4	15 ± 4	14 ± 4
MEAN	17 ± 14	17 ± 13	17 ± 12	17 ± 13	17 ± 13	18 ± 12	17 ± 14	17 ± 12

THE MEAN AND TWO STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-VI.2 **MONTHLY AND YEARLY VALUES OF GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

GROUP I - NEAR FIELD LOCATIONS				GROUP II - FAR FIELD LOCATIONS				GROUP III - CONTROL LOCATIONS			
COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD
12/31/14 - 01/29/15	9	31	20 ± 12	12/31/14 - 01/29/15	12	30	20 ± 12	12/31/14 - 01/29/15	16	22	19 ± 6
01/29/15 - 02/26/15	12	37	23 ± 15	01/29/15 - 02/26/15	13	36	22 ± 13	01/29/15 - 02/26/15	16	28	23 ± 10
02/26/15 - 04/01/15	12	22	15 ± 5	02/26/15 - 04/01/15	12	18	15 ± 4	02/26/15 - 04/01/15	14	21	16 ± 6
04/01/15 - 04/30/15	8	18	13 ± 5	04/01/15 - 04/30/15	9	17	13 ± 5	04/01/15 - 04/30/15	11	17	13 ± 6
04/30/15 - 05/28/15	5	17	11 ± 8	04/30/15 - 05/28/15	5	14	10 ± 7	04/30/15 - 05/28/15	6	13	10 ± 5
05/28/15 - 07/02/15	6	16	12 ± 5	05/28/15 - 07/02/15	8	18	12 ± 6	05/28/15 - 07/02/15	10	15	12 ± 4
07/02/15 - 07/30/15	8	21	13 ± 7	07/02/15 - 07/30/15	9	18	13 ± 6	07/02/15 - 07/23/15	7	12	9 ± 6
07/30/15 - 09/03/15	14	38	22 ± 16	07/30/15 - 09/03/15	17	43	23 ± 15	08/06/15 - 09/03/15	15	32	20 ± 15
09/03/15 - 10/01/15	16	33	22 ± 11	09/03/15 - 10/01/15	14	32	20 ± 12	09/03/15 - 10/01/15	20	31	23 ± 11
10/01/15 - 10/29/15	11	29	18 ± 12	10/01/15 - 10/29/15	12	27	19 ± 10	10/01/15 - 10/29/15	9	26	16 ± 14
10/29/15 - 12/03/15	13	24	18 ± 6	10/29/15 - 12/03/15	13	25	18 ± 6	10/29/15 - 12/03/15	14	20	18 ± 5
12/03/15 - 12/31/15	13	30	21 ± 13	12/03/15 - 12/31/15	13	34	22 ± 15	12/03/15 - 12/31/15	14	27	19 ± 12
12/31/14 - 12/31/15	5	38	17 ± 13	12/31/14 - 12/31/15	5	43	17 ± 13	12/31/14 - 12/31/15	6	32	17 ± 12

THE MEAN AND TWO STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES

Table C-VI.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-02	12/31/14 - 04/01/15	< 4	< 4	< 12	< 3	< 11	< 5	< 11	< 4	< 3	< 147	< 63
	04/01/15 - 07/02/15	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 2	< 3	< 34	< 16
	07/02/15 - 10/01/15	< 2	< 3	< 7	< 2	< 5	< 3	< 3	< 2	< 2	< 53	< 19
	10/01/15 - 12/31/15	< 2	< 2	< 4	< 3	< 3	< 3	< 5	< 3	< 2	< 27	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-03	12/31/14 - 04/01/15	< 4	< 6	< 21	< 5	< 13	< 8	< 12	< 5	< 5	< 217	< 84
	04/01/15 - 07/02/15	< 3	< 6	< 7	< 5	< 7	< 4	< 7	< 4	< 3	< 54	< 18
	07/02/15 - 10/01/15	< 2	< 4	< 10	< 3	< 8	< 3	< 4	< 3	< 3	< 72	< 24
	10/01/15 - 12/31/15	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 23	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-04	12/31/14 - 04/01/15	< 4	< 4	< 10	< 3	< 7	< 6	< 4	< 4	< 3	< 131	< 88
	04/01/15 - 07/02/15	< 4	< 3	< 10	< 2	< 5	< 3	< 4	< 3	< 3	< 44	< 9
	07/02/15 - 10/01/15	< 2	< 3	< 10	< 2	< 5	< 4	< 5	< 2	< 3	< 54	< 17
	10/01/15 - 12/31/15	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 3	< 3	< 36	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-05	12/31/14 - 04/01/15	< 3	< 5	< 16	< 4	< 8	< 4	< 6	< 4	< 3	< 181	< 68
	04/01/15 - 07/02/15	< 2	< 4	< 5	< 3	< 6	< 2	< 7	< 2	< 2	< 48	< 12
	07/02/15 - 10/01/15	< 2	< 3	< 8	< 2	< 5	< 3	< 5	< 3	< 2	< 53	< 17
	10/01/15 - 12/31/15	< 3	< 3	< 8	< 2	< 7	< 3	< 6	< 3	< 2	< 33	< 13
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-06	12/31/14 - 04/01/15	< 3	< 4	< 10	< 2	< 8	< 3	< 5	< 3	< 2	< 106	< 17
	04/01/15 - 07/02/15	< 3	< 3	< 7	< 3	< 7	< 5	< 6	< 2	< 2	< 43	< 21
	07/02/15 - 10/01/15	< 4	< 6	< 12	< 4	< 11	< 5	< 8	< 4	< 3	< 99	< 34
	10/01/15 - 12/31/15	< 4	< 4	< 10	< 5	< 13	< 4	< 8	< 4	< 4	< 40	< 19
	MEAN	-	-	-	-	-	-	-	-	-	-	-

Table C-VI.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-19	12/31/14 - 04/01/15	< 4	< 10	< 19	< 6	< 9	< 6	< 12	< 5	< 4	< 197	< 97
	04/01/15 - 07/02/15	< 3	< 3	< 6	< 3	< 6	< 4	< 6	< 3	< 2	< 36	< 12
	07/02/15 - 10/01/15	< 3	< 4	< 8	< 3	< 6	< 3	< 7	< 3	< 4	< 82	< 35
	10/01/15 - 12/31/15	< 3	< 3	< 9	< 4	< 7	< 4	< 7	< 3	< 3	< 46	< 14
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-20	12/31/14 - 04/01/15	< 3	< 4	< 12	< 4	< 8	< 4	< 8	< 3	< 3	< 165	< 63
	04/01/15 - 07/02/15	< 3	< 4	< 5	< 2	< 6	< 3	< 5	< 3	< 3	< 37	< 12
	07/02/15 - 10/01/15	< 3	< 6	< 10	< 4	< 9	< 5	< 10	< 4	< 3	< 85	< 33
	10/01/15 - 12/31/15	< 2	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 2	< 34	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-21	12/31/14 - 04/01/15	< 5	< 5	< 20	< 4	< 11	< 9	< 17	< 5	< 4	< 354	< 112
	04/01/15 - 07/02/15	< 3	< 3	< 5	< 2	< 6	< 3	< 6	< 2	< 3	< 46	< 9
	07/02/15 - 10/01/15	< 2	< 3	< 5	< 1	< 5	< 3	< 5	< 3	< 2	< 48	< 19
	10/01/15 - 12/31/15	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 3	< 3	< 49	< 14
	MEAN	-	-	-	-	-	-	-	-	-	-	-

Table C-VII.1 **CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP I - NEAR FIELD				GROUP II - FAR FIELD			GROUP III - CONTROL LOCATION
	BD-06	BD-19	BD-20	BD-21	BD-02	BD-04	BD-05	BD-03
12/31/14 - 01/08/15	< 32	< 32	< 32	< 32	< 32	< 32	< 32	< 32
01/08/15 - 01/15/15	< 20	< 58	< 58	< 58	< 52	< 52	< 52	< 52
01/15/15 - 01/22/15	< 63	< 63	< 63	< 63	< 58	< 58	< 58	< 58
01/22/15 - 01/29/15	< 42	< 23	< 42	< 42	< 53	< 53	< 42	< 53
01/29/15 - 02/05/15	< 51	< 51	< 22	< 7	< 56	< 56	< 51	< 56
02/05/15 - 02/12/15	< 37	< 37	< 37	(1)	< 40	< 40	< 37	< 40
02/12/15 - 02/19/15	< 43	< 42	< 42	< 42	< 50	< 50	< 50	< 50
02/19/15 - 02/26/15	< 45	< 42	< 42	< 42	< 17	< 45	< 45	< 45
02/26/15 - 03/05/15	< 41	< 41	< 41	< 41	< 38	< 37	< 37	< 37
03/05/15 - 03/12/15	< 36	< 37	< 37	< 37	< 36	< 36	< 36	< 14
03/12/15 - 03/19/15	< 66	< 66	< 68	< 66	< 69	< 69	< 69	< 70
03/19/15 - 03/26/15	< 38	< 37	< 37	< 37	< 37	< 21	< 37	< 37
03/26/15 - 04/01/15	< 47	< 58	< 56	< 56	< 20	< 47	< 46	< 48
04/01/15 - 04/09/15	< 32	< 33	< 33	< 33	< 32	< 32	< 12	< 32
04/09/15 - 04/16/15	< 53	< 53	< 53	< 53	< 69	< 69	< 69	< 69
04/16/15 - 04/23/15	< 26	< 62	< 62	< 62	< 62	< 62	< 62	< 62
04/23/15 - 04/30/15	< 59	< 59	< 59	< 59	< 63	< 67	< 65	< 63
04/30/15 - 05/07/15	< 32	< 17	< 32	< 31	< 32	< 32	< 32	< 32
05/07/15 - 05/14/15	< 26	< 26	< 26	< 26	< 23	< 23	< 23	< 23
05/14/15 - 05/21/15	< 46	< 46	< 19	< 46	< 49	< 49	< 49	< 49
05/21/15 - 05/28/15	< 27	< 27	< 27	< 27	< 22	< 22	< 22	< 22
05/28/15 - 06/04/15	< 67	< 67	< 67	< 28	< 40	< 40	< 40	< 40
06/04/15 - 06/11/15	< 45	< 45	< 45	< 45	< 35	< 36	< 35	< 35
06/11/15 - 06/18/15	< 37	< 37	< 37	< 37	< 59	< 60	< 60	< 60
06/18/15 - 06/25/15	< 53	< 54	< 65	< 67	< 54	< 54	< 50	(1)
06/25/15 - 07/02/15	< 49	< 49	< 49	< 49	< 52	< 52	< 52	< 52
07/02/15 - 07/09/15	< 41	< 41	< 17	< 41	< 44	< 44	< 44	< 44
07/09/15 - 07/16/15	< 56	< 28	< 56	< 56	< 15	< 15	< 15	< 15
07/16/15 - 07/23/15	< 41	< 40	< 41	< 41	< 46	< 46	< 46	< 52
07/23/15 - 07/30/15	< 40	< 38	< 40	< 40	< 39	< 39	< 39	< 254
07/30/15 - 08/06/15	< 62	< 67	< 62	< 34	< 68	< 69	< 62	(1)
08/06/15 - 08/13/15	< 56	< 55	< 57	< 57	< 50	< 58	< 48	< 22
08/13/15 - 08/20/15	< 19	< 45	< 45	< 45	< 29	< 29	< 28	< 28
08/20/15 - 08/27/15	< 56	< 56	< 56	< 56	< 58	< 64	< 62	< 60
08/27/15 - 09/03/15	< 52	< 52	< 52	< 52	< 54	< 56	< 56	< 52
09/03/15 - 09/10/15	< 45	< 65	< 65	< 65	< 19	< 46	< 45	< 49
09/10/15 - 09/17/15	< 45	< 45	< 45	< 45	< 57	< 57	< 55	< 54
09/17/15 - 09/24/15	< 54	< 54	< 54	< 54	< 54	< 54	< 53	< 53
09/24/15 - 10/01/15	< 53	< 54	< 54	< 22	< 58	< 58	< 60	< 58
10/01/15 - 10/08/15	< 45	< 45	< 45	< 45	< 49	< 49	< 50	< 18
10/08/15 - 10/15/15	< 60	< 60	< 60	< 60	< 35	< 36	< 36	< 34
10/15/15 - 10/22/15	< 58	< 58	< 59	< 59	< 64	< 66	< 64	< 26
10/22/15 - 10/29/15	< 53	< 53	< 53	< 53	< 42	< 43	< 41	< 40
10/29/15 - 11/05/15	< 34	< 46	< 46	< 46	< 34	< 37	< 35	< 12
11/05/15 - 11/12/15	< 43	< 42	< 43	< 42	< 42	< 43	< 44	< 41
11/12/15 - 11/19/15	< 56	(1)	< 58	< 58	< 69	< 69	< 69	< 65
11/19/15 - 11/25/15	< 38	(1)	< 38	< 38	< 40	< 40	< 39	< 37
11/25/15 - 12/03/15	< 57	< 57	< 58	< 58	< 44	< 43	< 43	< 41
12/03/15 - 12/10/15	< 68	< 68	< 68	< 69	< 39	< 39	< 39	< 36
12/10/15 - 12/17/15	< 55	< 55	< 67	< 53	< 57	< 57	< 58	< 54
12/17/15 - 12/24/15	< 66	< 67	< 67	< 67	< 68	< 68	< 68	< 64
12/24/15 - 12/31/15	< 66	< 68	< 69	< 69	< 66	< 66	< 64	< 62
MEAN	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-VIII.1 **CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

	INDICATOR FARM	CONTROL FARM
COLLECTION PERIOD	BD-17	BD-18
01/15/15	< 0.3	(1)
02/06/15	< 0.7	< 0.5
03/05/15	< 0.5	< 0.7
04/02/15	< 0.5	< 0.4
05/07/15	< 0.6	< 0.6
05/21/15	< 0.6	< 0.7
06/04/15	< 0.9	< 0.9
06/18/15	< 0.8	< 0.7
07/02/15	< 0.7	< 0.8
07/16/15	< 0.3	< 0.3
07/30/15	< 0.5	< 0.6
08/13/15	< 0.6	< 0.8
08/27/15	< 0.7	< 0.6
09/10/15	< 0.6	< 0.6
09/24/15	< 0.3	< 0.4
10/08/15	< 0.7	< 0.7
10/22/15	< 0.5	< 0.3
11/05/15	< 0.6	< 0.5
12/03/15	< 0.5	(1)
MEAN	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-VIII.2 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-17	01/15/15	< 8	< 8	< 20	< 8	< 19	< 8	< 15	< 8	< 8	< 39	< 10
	02/06/15	< 7	< 7	< 17	< 7	< 17	< 7	< 13	< 6	< 7	< 33	< 9
	03/05/15	< 3	< 4	< 9	< 4	< 6	< 4	< 6	< 3	< 3	< 22	< 8
	04/02/15	< 5	< 5	< 12	< 5	< 12	< 5	< 8	< 4	< 5	< 35	< 9
	05/07/15	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 2	< 2	< 17	< 5
	05/21/15	< 3	< 4	< 9	< 4	< 8	< 4	< 6	< 3	< 4	< 28	< 9
	06/04/15	< 13	< 12	< 24	< 15	< 31	< 12	< 20	< 11	< 11	< 54	< 12
	06/18/15	< 5	< 6	< 11	< 7	< 11	< 6	< 10	< 6	< 5	< 23	< 7
	07/02/15	< 7	< 8	< 16	< 7	< 14	< 8	< 9	< 5	< 6	< 36	< 15
	07/16/15	< 6	< 6	< 15	< 7	< 18	< 6	< 11	< 5	< 6	< 39	< 7
	07/30/15	< 5	< 5	< 14	< 7	< 14	< 6	< 9	< 5	< 6	< 35	< 8
	08/13/15	< 8	< 9	< 18	< 9	< 18	< 9	< 15	< 9	< 8	< 50	< 11
	08/27/15	< 11	< 11	< 24	< 12	< 31	< 12	< 22	< 10	< 13	< 52	< 9
	09/10/15	< 11	< 13	< 28	< 9	< 37	< 13	< 20	< 15	< 14	< 58	< 7
	09/24/15	< 8	< 8	< 20	< 9	< 19	< 8	< 16	< 6	< 9	< 33	< 11
	10/08/15	< 6	< 7	< 14	< 6	< 14	< 7	< 11	< 6	< 7	< 32	< 8
	10/22/15	< 6	< 6	< 15	< 6	< 12	< 5	< 11	< 6	< 5	< 25	< 7
	11/05/15	< 8	< 7	< 23	< 11	< 24	< 9	< 16	< 10	< 11	< 39	< 11
	12/03/15	< 8	< 7	< 22	< 10	< 13	< 9	< 13	< 6	< 8	< 36	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-

Table C-VIII.2 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-18	01/08/15	(1)										
	02/06/15	< 7	< 6	< 16	< 6	< 16	< 7	< 11	< 7	< 7	< 33	< 10
	03/05/15	< 6	< 5	< 17	< 5	< 14	< 7	< 11	< 6	< 6	< 46	< 10
	04/02/15	< 8	< 9	< 18	< 7	< 17	< 10	< 16	< 8	< 9	< 59	< 9
	05/06/15	< 3	< 3	< 8	< 3	< 7	< 3	< 6	< 3	< 3	< 28	< 9
	05/21/15	< 8	< 8	< 14	< 9	< 18	< 10	< 16	< 7	< 8	< 52	< 12
	06/04/15	< 9	< 7	< 24	< 11	< 22	< 10	< 14	< 7	< 8	< 42	< 14
	06/18/15	< 6	< 9	< 15	< 5	< 16	< 7	< 11	< 6	< 8	< 37	< 13
	07/01/15	< 6	< 6	< 15	< 8	< 12	< 6	< 10	< 6	< 6	< 36	< 10
	07/16/15	< 9	< 7	< 15	< 8	< 14	< 8	< 14	< 7	< 7	< 49	< 11
	07/30/15	< 6	< 6	< 15	< 6	< 14	< 6	< 13	< 6	< 6	< 38	< 15
	08/13/15	< 9	< 9	< 18	< 8	< 20	< 9	< 14	< 9	< 9	< 48	< 13
	08/27/15	< 8	< 7	< 15	< 12	< 26	< 10	< 17	< 6	< 9	< 39	< 11
	09/10/15	< 6	< 6	< 15	< 8	< 15	< 6	< 12	< 5	< 7	< 25	< 9
	09/24/15	< 8	< 6	< 20	< 6	< 20	< 8	< 11	< 8	< 8	< 36	< 12
	10/08/15	< 6	< 6	< 15	< 6	< 14	< 7	< 12	< 6	< 7	< 31	< 6
	10/22/15	< 7	< 7	< 17	< 8	< 15	< 7	< 13	< 7	< 7	< 32	< 5
	11/05/15	< 6	< 7	< 18	< 7	< 16	< 7	< 11	< 5	< 7	< 29	< 7
	12/03/15	(1)										
	MEAN	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-IX.1 **CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
BD-CONTROL												
Sweet potatoes	09/24/15	< 23	< 21	< 60	< 21	< 63	< 24	< 39	< 19	< 22	< 121	< 44
Swiss chard	09/24/15	< 27	< 27	< 76	< 28	< 63	< 26	< 54	< 21	< 28	< 136	< 28
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 1												
	09/24/15	(1)										
	09/24/15	(1)										
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 2												
Beets	09/24/15	< 19	< 19	< 44	< 22	< 42	< 20	< 30	< 17	< 18	< 108	< 35
Cauliflower	09/24/15	< 23	< 23	< 56	< 24	< 62	< 26	< 46	< 22	< 22	< 135	< 36
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 3												
	09/24/15	(1)										
	09/24/15	(1)										
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 4												
	09/24/15	(1)										
	09/24/15	(1)										
	MEAN	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

Table C-X.1 QUARTERLY OSLD RESULTS FOR BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF MREM/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
BD-02-1	20.7 ± 3.1	19.2	19.7	21.1	22.7
BD-02-2	21.2 ± 2.3	19.5	21.3	21.7	22.1
BD-03-1	20.1 ± 2.1	19.1	20.0	19.8	21.6
BD-03-2	21.2 ± 3.7	19.5	20.8	20.5	23.8
BD-04-1	19.6 ± 0.7	19.1	19.8	19.8	19.8
BD-04-2	19.7 ± 3.7	18.0	22.3	19.5	19.0
BD-05-1	21.0 ± 3.6	19.1	23.0	19.9	22.0
BD-05-2	20.6 ± 3.4	18.6	21.2	19.9	22.6
BD-06-1	19.9 ± 2.6	18.4	21.2	19.3	20.8
BD-06-2	19.6 ± 2.3	18.4	20.5	18.8	20.7
BD-19-1	21.3 ± 2.4	20.0	20.8	21.6	22.8
BD-19-2	21.3 ± 3.3	19.4	22.1	20.5	23.1
BD-20-1	21.4 ± 3.9	18.7	22.9	21.0	22.8
BD-20-2	21.6 ± 5.2	18.8	24.6	20.1	22.7
BD-21-1	20.1 ± 3.0	17.9	20.9	20.6	21.0
BD-21-2	20.5 ± 3.5	18.2	21.8	19.9	21.9
BD-101-3	21.4 ± 5.5	18.2	24.4	20.3	22.8
BD-101-4	20.4 ± 2.3	19.2	21.9	20.0	20.5
BD-102-1	19.4 ± 3.0	18.2	20.9	18.0	20.4
BD-102-2	21.1 ± 2.8	19.3	22.5	20.8	21.8
BD-103-1	20.3 ± 2.8	19.2	19.6	20.0	22.3
BD-103-2	20.8 ± 2.1	19.5	20.6	22.0	20.9
BD-104-1	19.7 ± 1.3	18.9	20.5	19.7	19.8
BD-104-2	20.0 ± 2.4	18.5	20.6	19.5	21.2
BD-104-3	24.4 ± 2.3	23.0	24.1	24.7	25.7
BD-104-4	24.9 ± 3.3	22.5	26.2	25.3	25.6
BD-105-1	19.7 ± 4.7	18.7	17.9	19.1	23.2
BD-105-2	20.1 ± 2.6	18.5	20.2	19.9	21.7
BD-105-3	23.2 ± 2.3	22.3	22.9	22.7	24.9
BD-105-4	26.3 ± 8.3	28.1	31.3	22.8	23.0
BD-106-1	18.9 ± 5.1	18.1	15.9	19.6	22.0
BD-106-2	19.1 ± 2.9	17.9	20.7	17.9	20.0
BD-107-1	20.3 ± 3.2	18.3	21.6	19.6	21.5
BD-107-2	19.1 ± 1.8	18.2	19.4	18.6	20.2
BD-108-1	19.4 ± 2.4	18.1	20.5	18.6	20.3
BD-108-2	20.3 ± 2.1	18.8	20.1	20.9	21.2
BD-109-1	22.6 ± 3.5	20.4	22.7	22.7	24.7
BD-109-2	23.6 ± 2.8	22.7	24.0	22.2	25.3
BD-110-1	20.0 ± 2.5	18.4	19.7	20.5	21.3
BD-110-2	19.9 ± 4.1	17.4	22.4	19.7	20.1
BD-110-3	24.1 ± 3.6	26.1	25.0	22.2	22.9
BD-110-4	25.9 ± 3.2	24.7	28.1	24.8	25.8
BD-112-1	19.3 ± 0.8	19.0	19.8	19.3	19.0
BD-112-2	17.1 ± 5.1	17.9	19.9	16.8	13.8

Table C-X.1 QUARTERLY OSLD RESULTS FOR BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF MREM/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
BD-114-1	19.9 ± 3.7	19.3	21.1	17.5	21.5
BD-114-2	19.7 ± 2.0	18.2	19.8	20.5	20.2
BD-115-1	20.5 ± 2.7	19.4	22.0	19.2	21.2
BD-115-2	20.6 ± 3.1	18.8	22.0	19.8	21.8
BD-116-1	21.2 ± 3.4	19.6	23.6	20.5	21.0
BD-116-2	20.7 ± 2.3	19.1	21.4	20.6	21.6
BD-201-1	24.7 ± 6.7	21.0	25.5	(1)	27.6
BD-201-2	22.4 ± 4.2	20.0	23.3	(1)	23.9
BD-202-1	20.5 ± 2.7	18.7	21.5	20.3	21.5
BD-202-2	20.4 ± 3.5	17.9	21.9	21.3	20.4
BD-203-1	20.6 ± 0.6	20.2	20.4	20.7	20.9
BD-203-2	20.1 ± 3.2	17.7	21.0	20.6	21.0
BD-204-1	19.4 ± 2.5	18.0	20.8	18.9	20.0
BD-204-2	19.6 ± 1.9	18.3	19.4	19.9	20.6
BD-205-1	19.5 ± 3.7	17.3	21.8	19.6	19.3
BD-205-2	18.7 ± 3.8	17.1	20.3	17.0	20.3
BD-206-1	19.6 ± 5.0	16.7	20.8	18.5	22.4
BD-206-2	20.2 ± 2.2	18.6	20.7	20.4	21.1
BD-207-1	19.6 ± 2.1	18.2	20.0	19.4	20.7
BD-207-2	18.3 ± 1.7	17.1	19.1	18.7	18.3
BD-208-1	20.2 ± 1.9	18.8	20.3	20.5	21.0
BD-208-2	20.3 ± 3.6	18.2	21.3	19.4	22.2
BD-209-1	23.9 ± 4.3	20.7	24.4	25.4	24.9
BD-209-2	24.8 ± 3.7	22.2	26.3	24.9	25.9
BD-210-1	22.9 ± 2.6	21.5	23.4	22.3	24.5
BD-210-2	20.2 ± 2.5	18.7	(1)	20.8	21.0
BD-211-1	24.6 ± 6.2	20.5	26.6	23.8	27.3
BD-211-2	24.2 ± 3.7	22.1	23.3	25.3	26.2
BD-212-3	20.1 ± 1.7	18.9	20.9	19.9	20.5
BD-212-4	25.2 ± 5.1	21.9	25.9	25.1	28.0
BD-213-3	19.3 ± 2.8	18.3	20.0	17.9	20.8
BD-213-4	19.5 ± 3.2	18.9	19.0	18.1	21.8
BD-214-1	19.5 ± 3.3	18.0	21.6	18.4	19.9
BD-214-2	22.3 ± 2.5	20.4	23.1	23.0	22.6
BD-215-1	20.3 ± 3.4	18.1	22.1	20.1	20.9
BD-215-2	19.3 ± 3.1	18.7	19.9	17.4	21.0
BD-216-1	21.9 ± 4.3	19.3	22.9	21.2	24.3
BD-216-2	23.2 ± 4.2	20.3	23.6	23.8	25.2
BD-111A-1	20.4 ± 2.9	19.5	22.5	19.9	19.6
BD-111A-2	19.6 ± 2.8	18.4	18.6	20.0	21.4
BD-113A-1	20.7 ± 3.7	19.0	23.3	19.9	20.7
BD-113A-2	20.7 ± 3.3	19.8	21.5	18.9	22.5

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-X.2 MEAN QUARTLY OSLD RESULTS FOR THE INNER RING, OUTER RING, OTHER CONTROL AND ISFSI LOCATIONS FOR BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF MREM/QUARTER ± 2 STANDARD DEVIATION
OF THE STATION DATA

COLLECTION PERIOD	INNER RING ± 2 S.D.	OUTER RING	OTHER	CONTROL	ISFSI
JAN-MAR	18.9 ± 1.9	19.1 ± 3.1	18.8 ± 1.2	19.3 ± 0.6	24.5 ± 4.6
APR-JUN	21.0 ± 3.6	22.0 ± 4.2	21.6 ± 2.7	20.4 ± 1.1	26.3 ± 6.1
JUL-SEP	19.8 ± 2.5	20.8 ± 4.9	20.3 ± 1.7	20.2 ± 1.0	23.8 ± 2.7
OCT-DEC	21.1 ± 3.8	22.4 ± 5.2	21.7 ± 2.5	22.7 ± 3.1	24.7 ± 2.7

TABLE C-X.2 MEAN QUARTLY OSLD RESULTS FOR THE INNER RING, OUTER RING, OTHER, CONTROL AND ISFSI LOCATIONS FOR BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF MREM/QUARTER ± 2 STANDARD DEVIATION

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
INNER RING	128	13.8	25.3	20.2 ± 3.5
OUTER RING	125	16.7	28.0	21.1 ± 5.0
OTHER	56	17.9	24.6	20.6 ± 3.1
CONTROL	8	19.1	23.8	20.6 ± 3.0
ISFSI	24	22.2	31.3	24.8 ± 4.4

INNER RING STATIONS - BD-101-3, BD-101-4, BD-102-1, BD-102-2, BD-103-1, BD-103-2, BD-104-1, BD-104-2, BD-105-1, BD-105-2, BD-106-1, BD-106-2, BD-107-1, BD-107-2, BD-108-1, BD-108-2, BD-109-1, BD-109-2, BD-110-1, BD-110-2, BD-111A-1, BD-111A-2, BD-112-1, BD-112-2, BD-113A-1, BD-113A-2, BD-114-1, BD-114-2, BD-115-1, BD-115-2, BD-116-1, BD-116-2

OUTER RING STATIONS - BD-201-1, BD-201-2, BD-202-1, BD-202-2, BD-203-1, BD-203-2, BD-204-1, BD-204-2, BD-205-1, BD-205-2, BD-206-1, BD-206-2, BD-207-1, BD-207-2, BD-208-1, BD-208-2, BD-209-1, BD-209-2, BD-210-1, BD-210-2, BD-211-1, BD-211-2, BD-212-3, BD-212-4, BD-213-3, BD-213-4, BD-214-1, BD-214-2, BD-215-1, BD-215-2, BD-216-1, BD-216-2

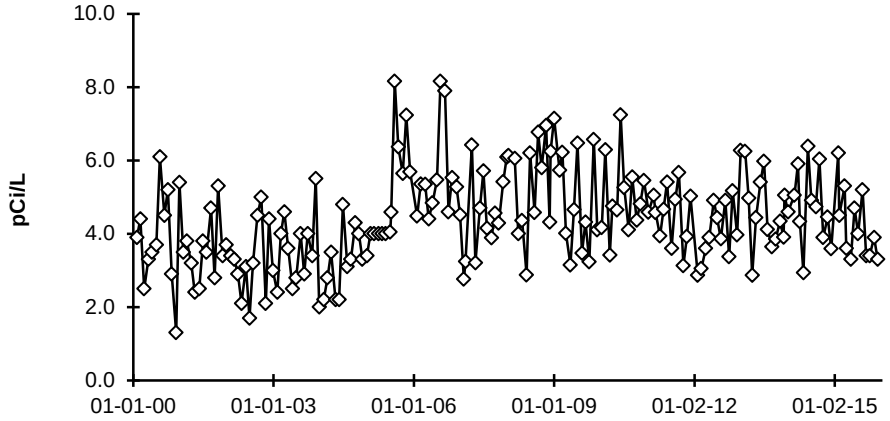
OTHER STATIONS - BD-02-1, BD-02-2, BD-04-1, BD-04-2, BD-05-1, BD-05-2, BD-06-1, BD-06-2, BD-19-1, BD-19-2, BD-20-1, BD-20-2, BD-21-1, BD-21-2

CONTROL STATIONS - BD-03-1, BD-03-2

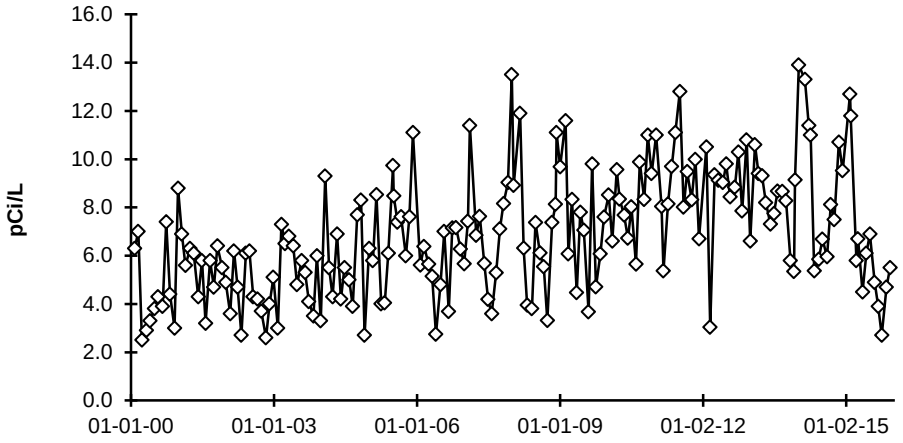
ISFSI STATIONS - BD-104-3, BD-104-4, BD-105-3, BD-105-4, BD-110-3, BD-110-4

FIGURE C-1
Surface Water - Gross Beta - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-10 Kankaee River, Downstream



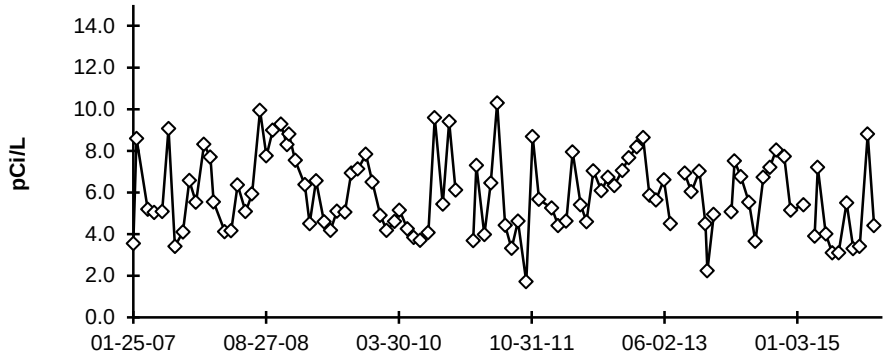
BD-25 (C) Kankakee River, Upstream



DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

FIGURE C-2
Surface Water - Gross Beta - Stations BD-38 and BD-40
Collected in the Vicinity of Braidwood Station, 2007 - 2015

BD-38 Main Drainage Ditch



BD-40 Braidwood Station Cooling Lake

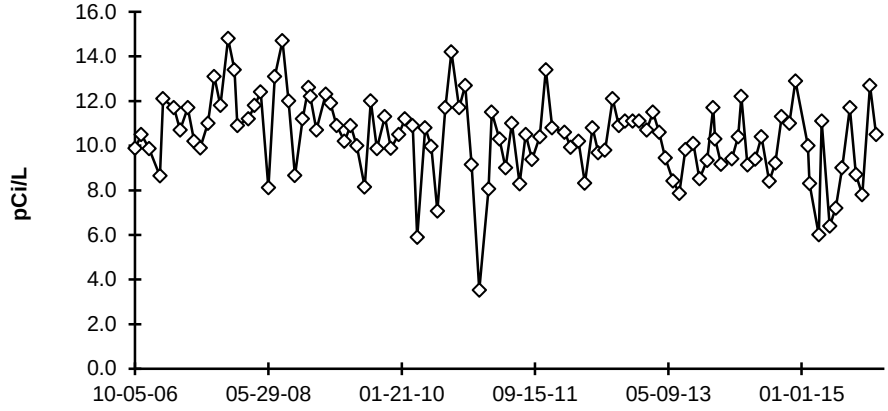
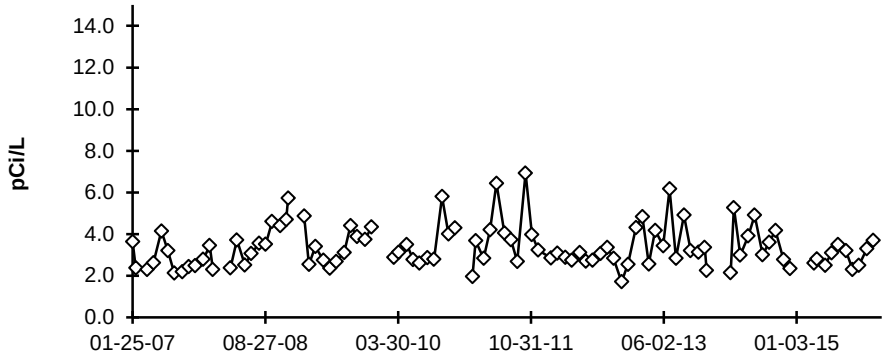
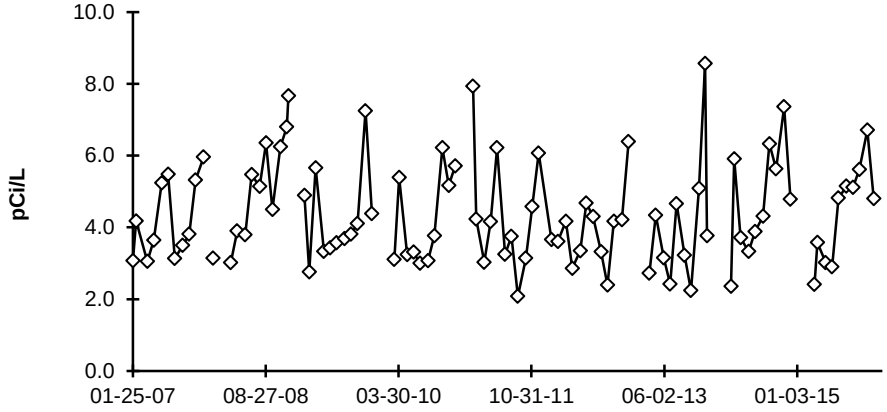


FIGURE C-3
Surface Water - Gross Beta - Stations BD-55 and BD-56 Collected in the Vicinity of Braidwood Station, 2007 - 2015

BD-55 North Pond Fatlan Site



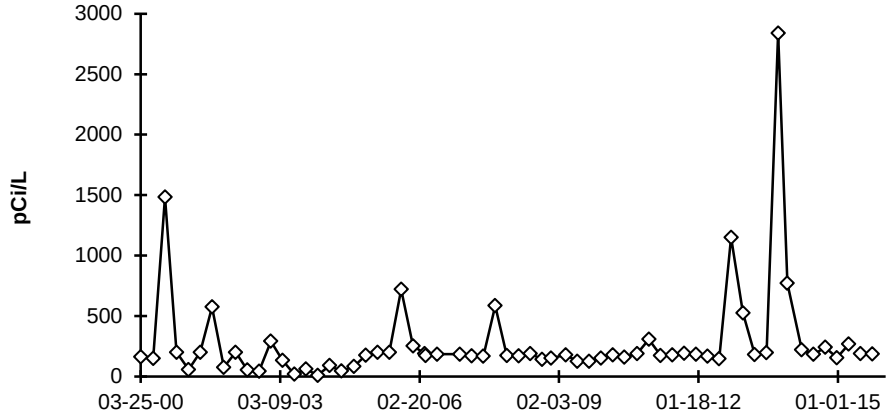
BD-56 South Pond Fatlan Site



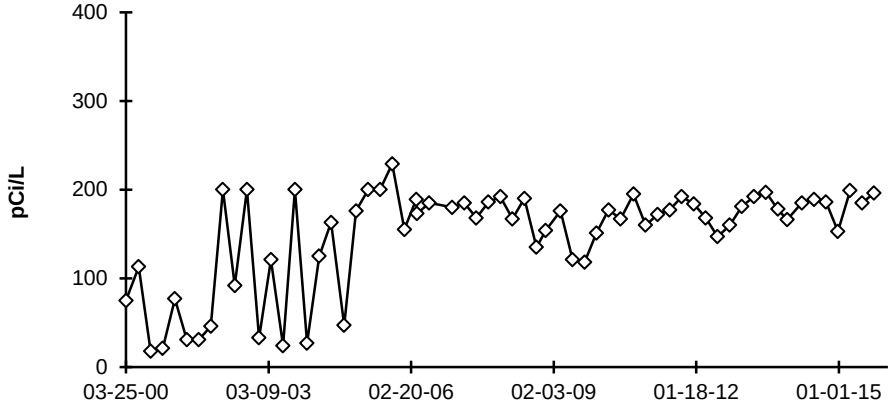
GAPS IN DATA ARE DUE TO SAMPLING POINTS BEING FROZEN AT TIME OF COLLECTION

FIGURE C-4
Surface Water - Tritium - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-10 Kankakee River, Downstream



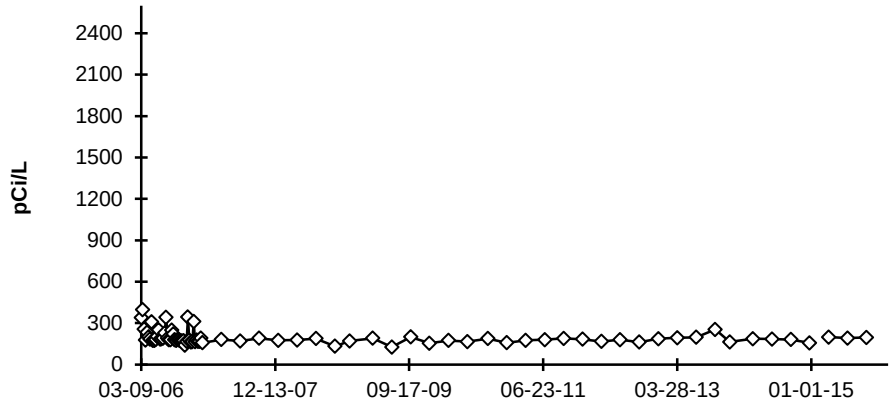
BD-25 (C) Kankakee River, Upstream



DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

FIGURE C-5
Surface Water - Tritium - Stations BD-38 and BD-40
Collected in the Vicinity of Braidwood Station, 2006 - 2015

BD-38 Main Drainage Ditch



BD-40 Braidwood Station Cooling Lake

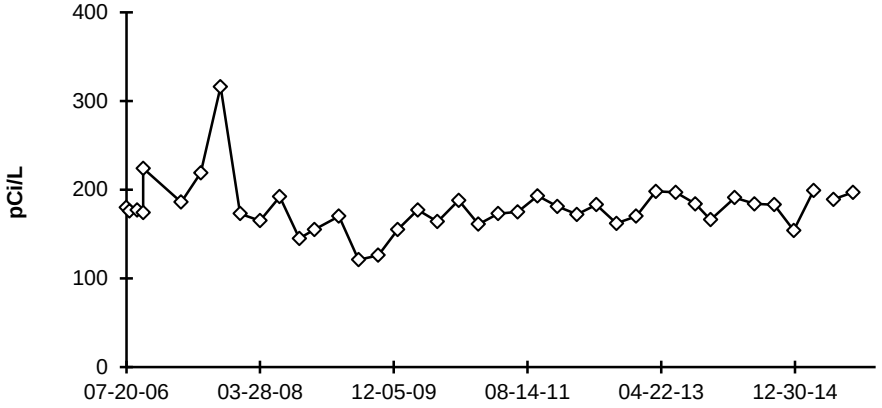
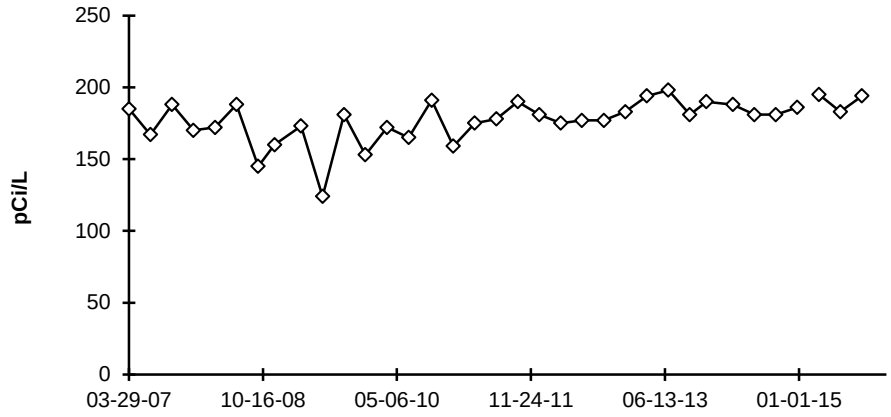


FIGURE C-6
Surface Water - Tritium - Stations BD-55 and BD-56
Collected in the Vicinity of Braidwood Station, 2007 - 2015

BD-55 North Pond Fatlan Site



BD-56 South Pond Fatlan Site

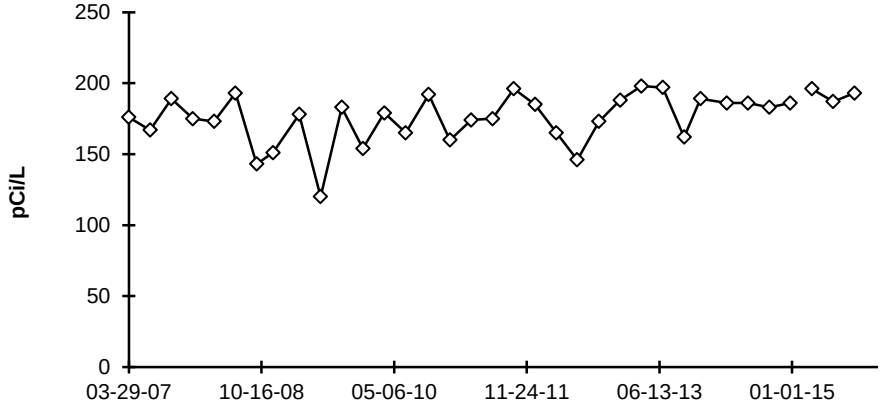
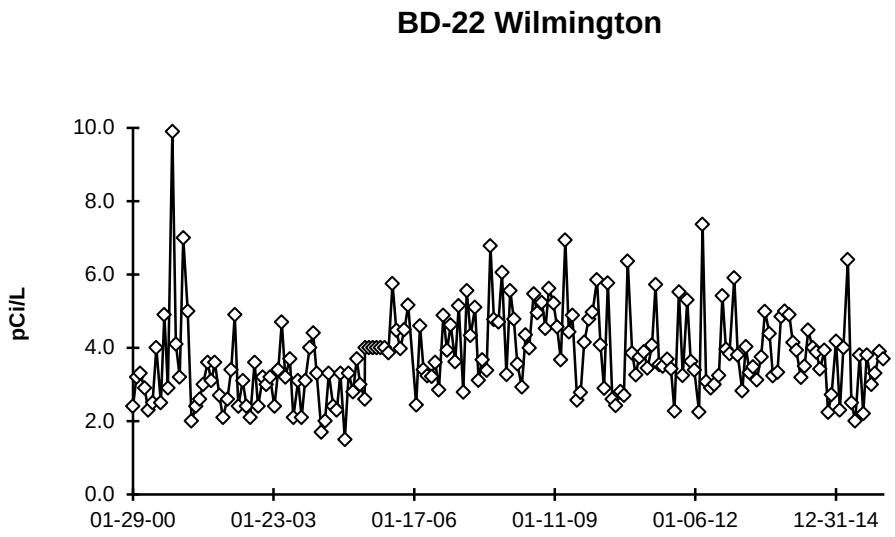
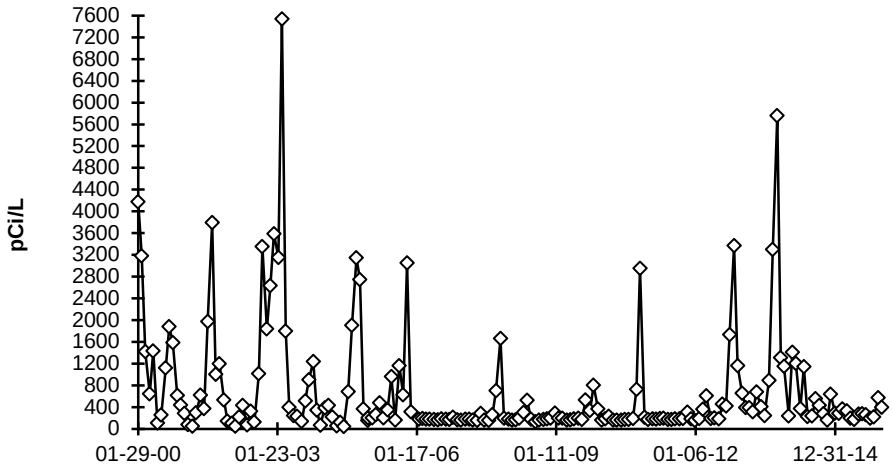


FIGURE C-7
Public Water - Gross Beta - Station BD-22
Collected in the Vicinity of Braidwood Station, 2000 - 2015



DUE TO VENDOR CHANGE, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

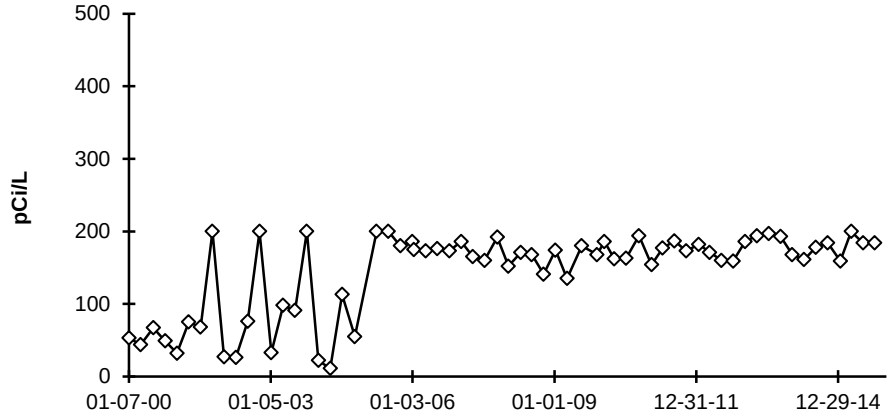
FIGURE C-8
Public Water - Tritium - Station BD-22
Collected in the Vicinity of Braidwood Station, 2000 - 2015



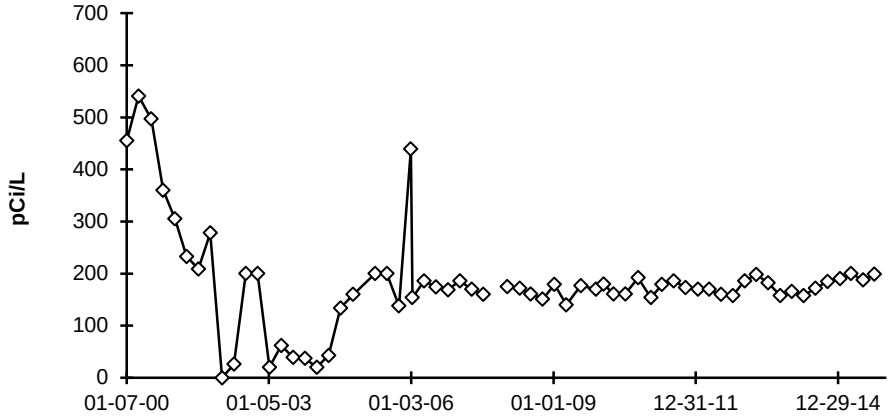
DUE TO VENDOR CHANGE, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

FIGURE C-9
Ground/Well Water - Tritium - Stations BD-13 and BD-34 Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-13 Braidwood City Hall Well



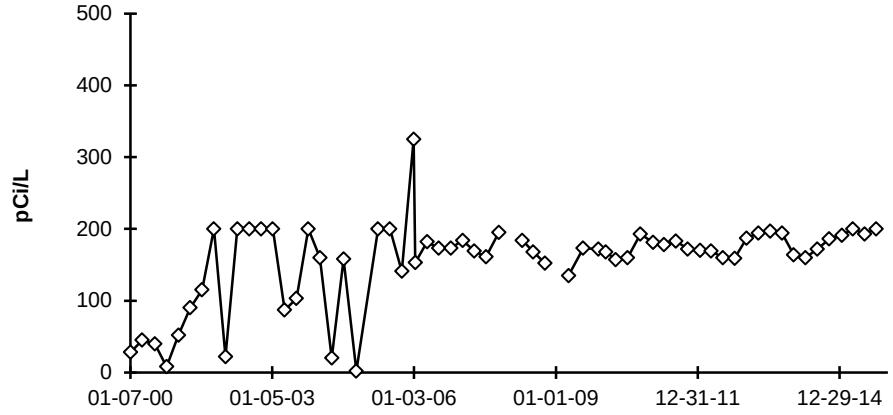
BD-34 Gibson Well



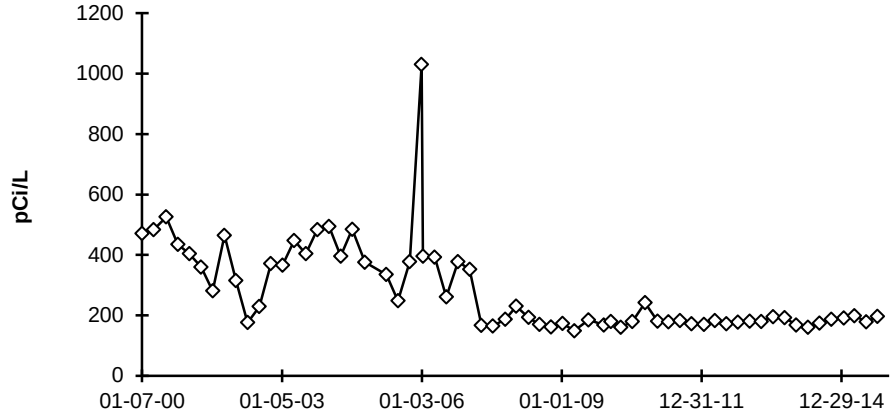
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY.

FIGURE C-10
Ground/Well Water - Tritium - Stations BD-35 and BD-36 Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-35 Joly Well



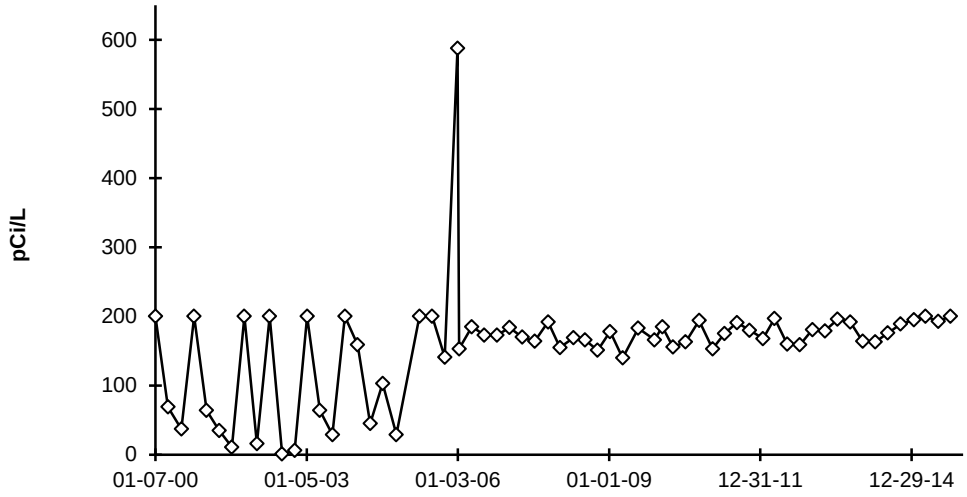
BD-36 Hutton Well



DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY.

FIGURE C-11
Ground/Well Water - Tritium - Station BD-37
Collected in the Vicinity of Braidwood Station, 2000 - 2015

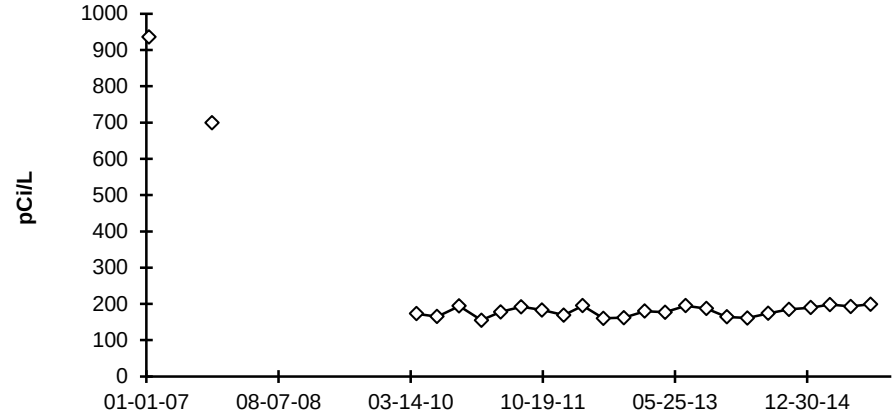
BD-37 Nurczyk Well



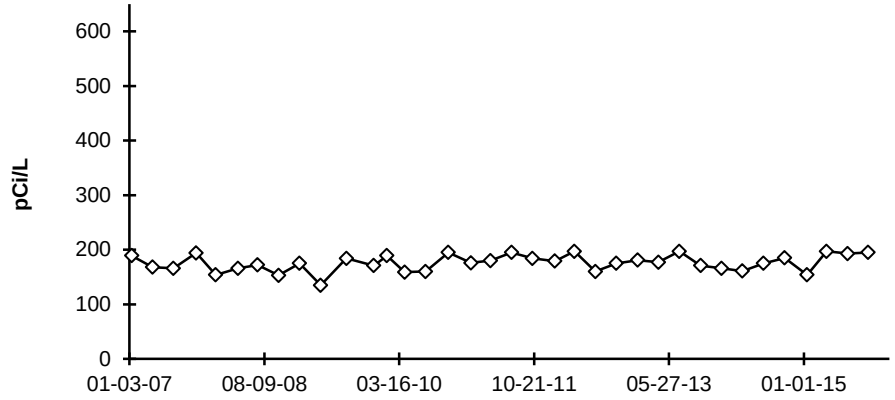
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY.

FIGURE C-12
Ground/Well Water - Tritium - Station BD-50 and BD-51 Collected in the Vicinity of Braidwood Station, 2007 - 2015

BD-50 Skole Well



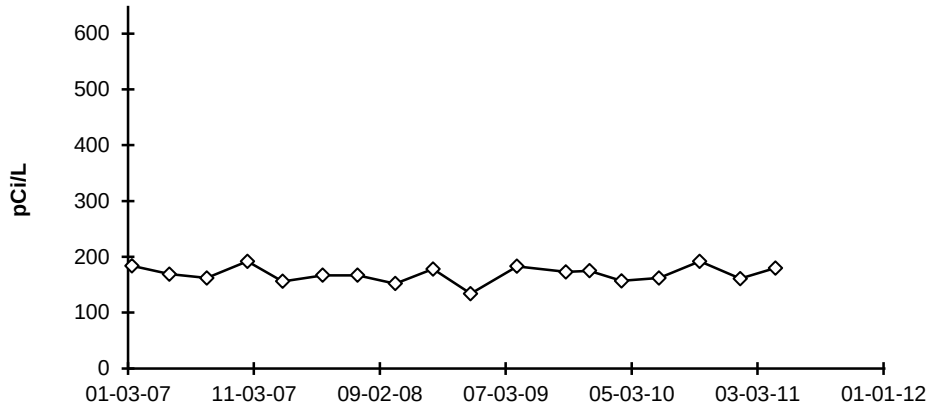
BD-51 Fatlan Well



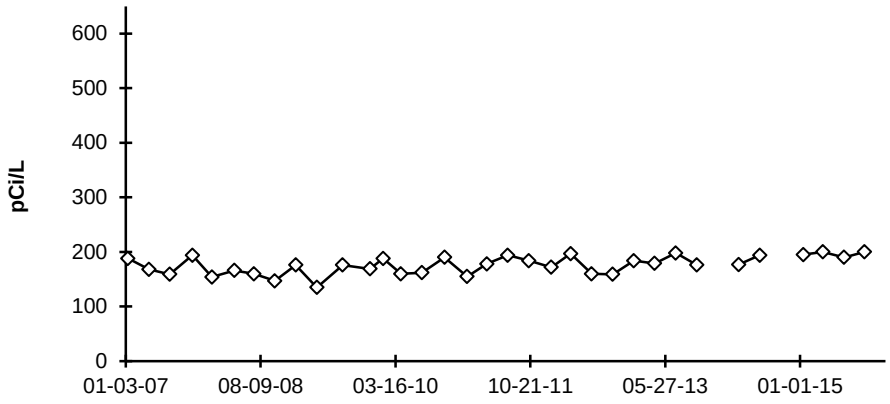
NEW STATIONS BD-50 AND BD-51 ADDED IN 2007
STATION BD-50 WAS INITIALLY DISCONTINUED ON 10/18/07 AND RESUMED ON 04/08/10

FIGURE C-13
Ground/Well Water - Tritium - Stations BD-53 and BD-54 Collected in the Vicinity of Braidwood Station, 2007 - 2015

BD-53 Phelps Well



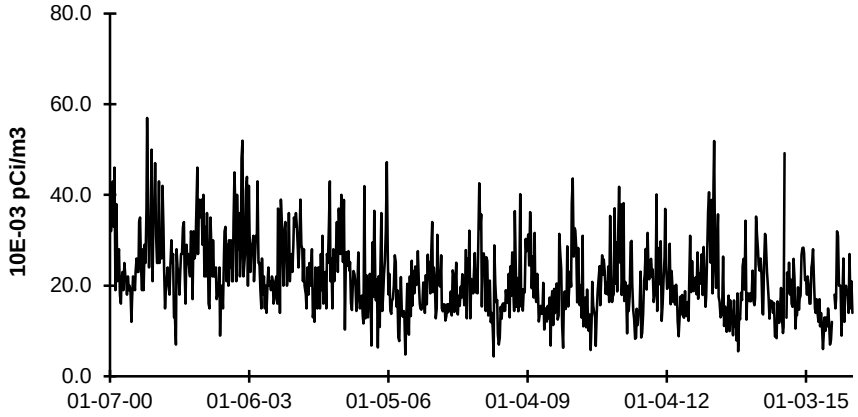
BD-54 Cash Well



BD-53 was removed from the program during the 3rd quarter of 2011

FIGURE C-14
Air Particulate - Gross Beta- Stations BD-03 (C) and BD-06 Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-03 (C) County Line Road



BD-06 Godley

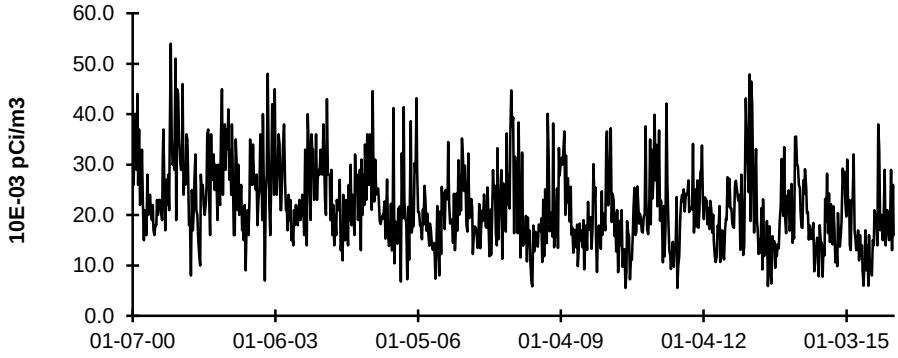
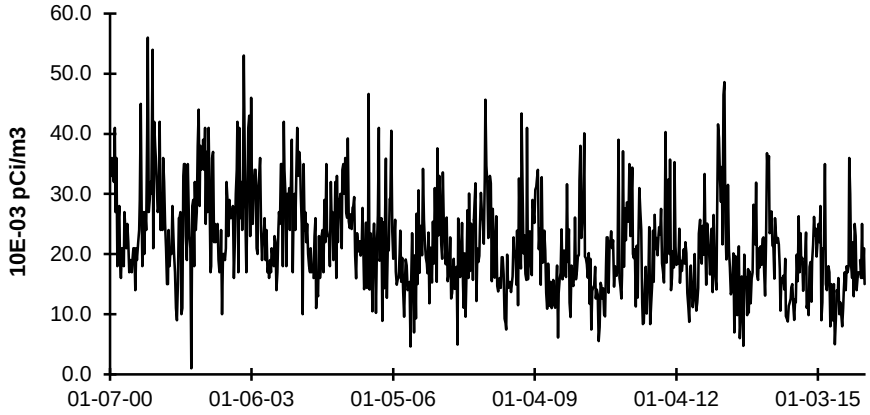


FIGURE C-15
Air Particulate - Gross Beta- Stations BD-19 and BD-20 Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-19 Near Field, NW



BD-20 Near Field, N

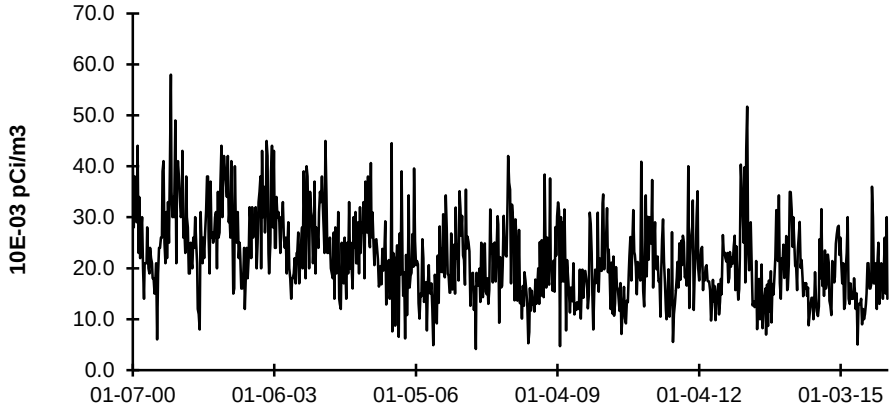


FIGURE C-16
Air Particulate - Gross Beta- Station BD-21
Collected in the Vicinity of Braidwood Station, 2000 - 2015

BD-21 Near Field, NE

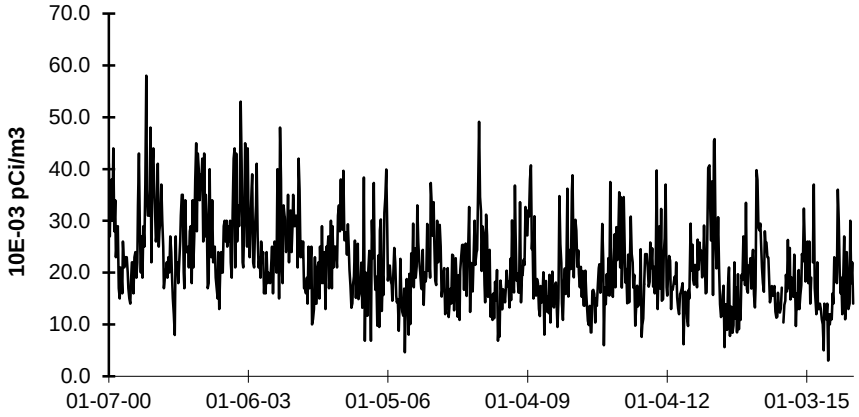
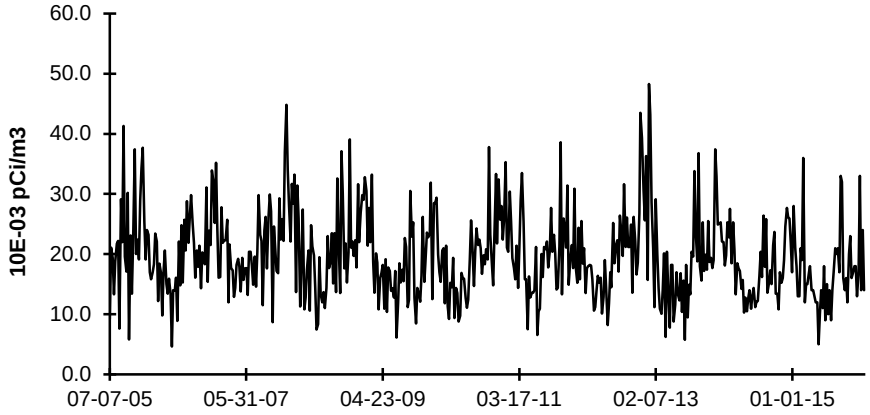


FIGURE C-17
Air Particulate - Gross Beta- Stations BD-02 and BD-04 Collected in the Vicinity of Braidwood Station, 2005 - 2015

BD-02 Near Field, NW



BD-04 Near Field, N

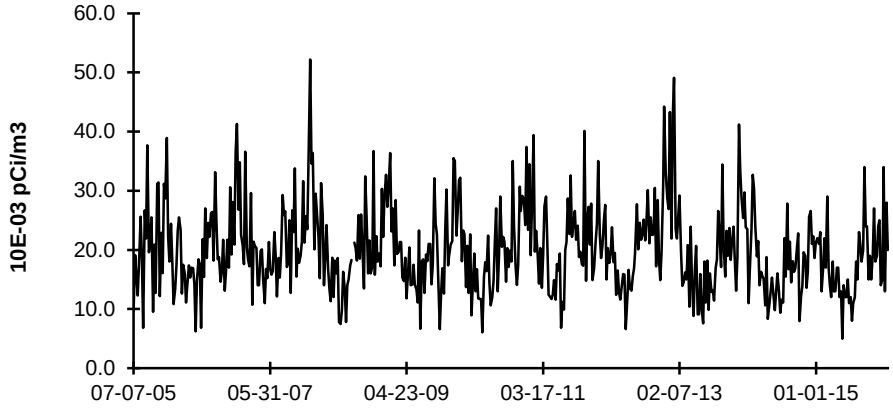
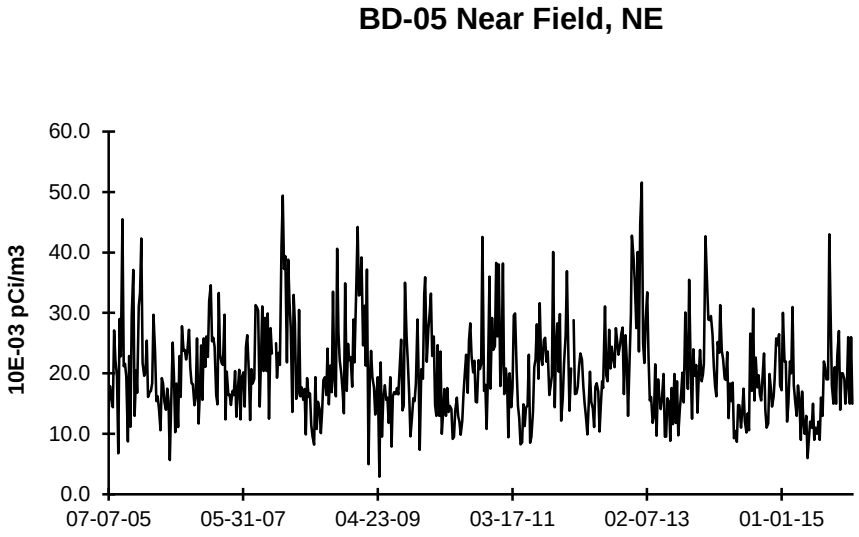


FIGURE C-18
Air Particulate - Gross Beta- Station BD-05
Collected in the Vicinity of Braidwood Station, 2005 - 2015



Intentionally left blank

APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

Intentionally left blank

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2015
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2015	E11181	Milk	Sr-89	pCi/L	88.9	97.2	0.91	A
			Sr-90	pCi/L	12.2	17.4	0.70	W
	E11182	Milk	I-131	pCi/L	61.3	65.1	0.94	A
			Ce-141	pCi/L	104	113	0.92	A
			Cr-51	pCi/L	265	276	0.96	A
			Cs-134	pCi/L	138	154	0.90	A
			Cs-137	pCi/L	205	207	0.99	A
			Co-58	pCi/L	178	183	0.97	A
			Mn-54	pCi/L	187	188	0.99	A
			Fe-59	pCi/L	182	177	1.03	A
			Zn-65	pCi/L	345	351	0.98	A
			Co-60	pCi/L	379	405	0.94	A
	E11184	AP	Ce-141	pCi	107	85.0	1.26	W
			Cr-51	pCi	261	224	1.17	A
			Cs-134	pCi	74.6	77.0	0.97	A
			Cs-137	pCi	99.6	102	0.98	A
			Co-58	pCi	99.8	110	0.91	A
			Mn-54	pCi	99.2	96.9	1.02	A
			Fe-59	pCi	109	119	0.92	A
			Zn-65	pCi	188	183	1.03	A
			Co-60	pCi	200	201	1.00	A
	E11183	Charcoal	I-131	pCi	82.9	85.4	0.97	A
	E11185	Water	Fe-55	pCi/L	1950	1900	1.03	A
June 2015	E11234	Milk	Sr-89	pCi/L	94.9	92.6	1.02	A
			Sr-90	pCi/L	14.3	12.7	1.13	A
	E11238	Milk	I-131	pCi/L	93.2	95.9	0.97	A
			Ce-141	pCi/L	Not provided for this study			
			Cr-51	pCi/L	349	276	1.26	W
			Cs-134	pCi/L	165	163	1.01	A
			Cs-137	pCi/L	143	125	1.14	A
			Co-58	pCi/L	82.0	68.4	1.20	A
			Mn-54	pCi/L	113	101	1.12	A
			Fe-59	pCi/L	184	151	1.22	W
			Zn-65	pCi/L	269	248	1.08	A
			Co-60	pCi/L	208	193	1.08	A
	E11237	AP	Ce-141	pCi	Not provided for this study			
			Cr-51	pCi	323	233	1.39	N (1)
			Cs-134	pCi	139	138	1.01	A
			Cs-137	pCi	111	106	1.05	A
			Co-58	pCi	54.0	57.8	0.93	A
			Mn-54	pCi	96.8	84.9	1.14	A
			Fe-59	pCi	162	128	1.27	W
			Zn-65	pCi	198	210	0.94	A
			Co-60	pCi	178	163	1.09	A
	E11236	Charcoal	I-131	pCi	93.9	80	1.17	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2015
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
June 2015	E11238	Water	Fe-55	pCi/L	1890	1790	1.06	A
September 2015	E11289	Milk	Sr-89	pCi/L	95.7	99.1	0.97	A
			Sr-90	pCi/L	15.4	16.4	0.94	A
	E11290	Milk	I-131	pCi/L	94.9	99.9	0.95	A
			Ce-141	pCi/L	228	213	1.07	A
			Cr-51	pCi/L	499	538	0.93	A
			Cs-134	pCi/L	208	212	0.98	A
			Cs-137	pCi/L	270	255	1.06	A
			Co-58	pCi/L	275	263	1.05	A
			Mn-54	pCi/L	320	290	1.10	A
			Fe-59	pCi/L	255	226	1.13	A
			Zn-65	pCi/L	392	353	1.11	A
			Co-60	pCi/L	350	330	1.06	A
	E11292	AP	Ce-141	pCi	104	85.1	1.22	W
			Cr-51	pCi	262	215	1.22	W
			Cs-134	pCi	86.1	84.6	1.02	A
			Cs-137	pCi	93	102	0.91	A
			Co-58	pCi	106	105	1.01	A
			Mn-54	pCi	117	116	1.01	A
			Fe-59	pCi	94.8	90.2	1.05	A
			Zn-65	pCi	160	141	1.13	A
			Co-60	pCi	146	132	1.11	A
	E11291	Charcoal	I-131	pCi	85.9	81.7	1.05	A
	E11293	Water	Fe-55	pCi/L	2090	1800	1.16	A
	E11294	Soil	Ce-141	pCi/kg	209	222	0.94	A
			Cr-51	pCi/kg	463	560	0.83	A
			Cs-134	pCi/kg	231	221	1.05	A
			Cs-137	pCi/kg	311	344	0.90	A
			Co-58	pCi/kg	245	274	0.89	A
			Mn-54	pCi/kg	297	302	0.98	A
			Fe-59	pCi/kg	248	235	1.06	A
			Zn-65	pCi/kg	347	368	0.94	A
			Co-60	pCi/kg	328	344	0.95	A
December 2015	E11354	Milk	Sr-89	pCi/L	96.2	86.8	1.11	A
			Sr-90	pCi/L	14.8	12.5	1.18	A
	E11355	Milk	I-131	pCi/L	95.1	91.2	1.04	A
			Ce-141	pCi/L	117	129	0.91	A
			Cr-51	pCi/L	265	281	0.94	A
			Cs-134	pCi/L	153	160	0.96	A
			Cs-137	pCi/L	119	115	1.03	A
			Co-58	pCi/L	107	110	0.97	A
			Mn-54	pCi/L	153	145	1.06	A
			Fe-59	pCi/L	117	108	1.08	A
			Zn-65	pCi/L	261	248	1.05	A
			Co-60	pCi/L	212	213	1.00	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2015
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2015	E11357	AP	Ce-141	pCi	89.9	84.0	1.07	A
			Cr-51	pCi	215	184	1.17	A
			Cs-134	pCi	103	105	0.98	A
			Cs-137	pCi	76.6	74.8	1.02	A
			Co-58	pCi	76.2	71.9	1.06	A
			Mn-54	pCi	91.4	94.4	0.97	A
			Fe-59	pCi	78.6	70.3	1.12	A
			Zn-65	pCi	173	162	1.07	A
			Co-60	pCi	138	139	0.99	A
	E11422	AP	Sr-89	pCi	98.0	96.9	1.01	A
			Sr-90	pCi	10.0	14.0	0.71	W
	E11356	Charcoal	I-131	pCi	74.9	75.2	1.00	A
	E11358	Water	Fe-55	pCi/L	2160	1710	1.26	W
	E11353	Soil	Ce-141	pCi/kg	252	222	1.14	A
			Cr-51	pCi/kg	485	485	1.00	A
			Cs-134	pCi/kg	319	277	1.15	A
			Cs-137	pCi/kg	292	276	1.06	A
			Co-58	pCi/kg	193	190	1.02	A
			Mn-54	pCi/kg	258	250	1.03	A
			Fe-59	pCi/kg	218	186	1.17	A
			Zn-65	pCi/kg	457	429	1.07	A
			Co-60	pCi/kg	381	368	1.04	A

(1) AP Cr-51 - Cr-51 has the shortest half-life and the weakest gamma energy of the mixed nuclide sample, which produces a large error. Taking into account the error, the lowest value would be 119% of the reference value, which would be considered acceptable. NCR 15-18

(a) Teledyne Brown Engineering reported result.

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

(c) Ratio of Teledyne Brown Engineering to Analytics results.

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

TABLE D-2 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2015
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide*	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
March 2015	15-MaW32	Water	Am-241	Bq/L	0.632	0.654	0.458 - 0.850	A
			Ni-63	Bq/L	2.5		(1)	A
			Pu-238	Bq/L	0.0204	0.0089	(2)	A
			Pu-239/240	Bq/L	0.9	0.8	0.582 - 1.082	A
	15-MaS32	Soil	Ni-63	Bq/kg	392	448.0	314 - 582	A
			Sr-90	Bq/kg	286	653	487 - 849	N (3)
	15-RdF32	AP	Sr-90	Bq/sample	-0.0991		(1)	A
			U-234/233	Bq/sample	0.0211	0.0155	0.0109 - 0.0202	N (3)
			U-238	Bq/sample	0.095	0.099	0.069 - 0.129	A
	15-GrF32	AP	Gr-A	Bq/sample	0.448	1.77	0.53 - 3.01	N (3)
			Gr-B	Bq/sample	0.7580	0.75	0.38 - 1.13	A
	15-RdV32	Vegetation	Cs-134	Bq/sample	8.08	7.32	5.12 - 9.52	A
			Cs-137	Bq/sample	11.6	9.18	6.43 - 11.93	W
			Co-57	Bq/sample	-0.0096		(1)	A
			Co-60	Bq/sample	6.53	5.55	3.89 - 7.22	A
			Mn-54	Bq/sample	0.0058		(1)	A
			Sr-90	Bq/sample	0.999	1.08	0.76 - 1.40	A
			Zn-65	Bq/sample	-0.108		(1)	A
September 2015	15-MaW33	Water	Am-241	Bq/L	1.012	1.055	0.739 - 1.372	A
			Ni-63	Bq/L	11.8	8.55	5.99 - 11.12	N (4)
			Pu-238	Bq/L	0.727	0.681	0.477 - 0.885	A
			Pu-239/240	Bq/L	0.830	0.900	0.630 - 1.170	A
	15-MaS33	Soil	Ni-63	Bq/kg	635	682	477 - 887	A
			Sr-90	Bq/kg	429	425	298 - 553	A
	15-RdF33	AP	Sr-90	Bq/sample	1.48	2.18	1.53 - 2.83	N (4)
			U-234/233	Bq/sample	0.143	0.143	0.100 - 0.186	A
			U-238	Bq/sample	0.149	0.148	0.104 - 0.192	A
	15-GrF33	AP	Gr-A	Bq/sample	0.497	0.90	0.27 - 1.53	A
			Gr-B	Bq/sample	1.34	1.56	0.78 - 2.34	A
	15-RdV33	Vegetation	Cs-134	Bq/sample	6.10	5.80	4.06 - 7.54	A
			Cs-137	Bq/sample	0.0002		(1)	A
			Co-57	Bq/sample	8.01	6.62	4.63 - 8.61	W
			Co-60	Bq/sample	4.97	4.56	3.19 - 5.93	A
			Mn-54	Bq/sample	8.33	7.68	5.38 - 9.98	A
			Sr-90	Bq/sample	0.386	1.30	0.91 - 1.69	N (4)
			Zn-65	Bq/sample	6.07	5.46	3.82 - 7.10	A

(1) False positive test.

(2) Sensitivity evaluation.

(3) Soil Sr-90 - incomplete digestion of the sample resulted in low results; AP U-234/233 - extremely low activity was difficult to quantify AP Gr-A - the MAPEP filter has the activity embedded in the filter. To corrected the low bias, TBE will create an attenuated efficiency for MAPEP samples. NCR 15-13

(4) Water Ni-63 extremely low activity was difficult to quantify; AP & Vegetation Sr-90 was lost during separation, possible from substance added by MAPEP NCR 15-21.

(a) Teledyne Brown Engineering reported result.

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

(c) DOE/MAPEP evaluation: A=acceptable, W=acceptable with warning, N=not acceptable.

TABLE D-3 ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2015

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Limits	Evaluation (c)
May 2015	RAD-101	Water	Sr-89	pCi/L	45.2	63.2	51.1 - 71.2	N (1)
			Sr-90	pCi/L	28.0	41.9	30.8 - 48.1	N (1)
			Ba-133	pCi/L	80.6	82.5	63.9 - 90.8	A
			Cs-134	pCi/L	71.7	75.7	61.8 - 83.3	A
			Cs-137	pCi/L	187	189	170 - 210	A
			Co-60	pCi/L	85.7	84.5	76.0 - 95.3	A
			Zn-65	pCi/L	197	203	183 - 238	A
			Gr-A	pCi/L	26.1	42.6	22.1 - 54.0	A
			Gr-B	pCi/L	28.8	32.9	21.3 - 40.6	A
			I-131	pCi/L	23.5	23.8	19.7 - 28.3	A
			U-Nat	pCi/L	6.19	6.59	4.99 - 7.83	A
			H-3	pCi/L	3145	3280	2770 - 3620	A
November 2015	RAD-103	Water	Sr-89	pCi/L	40.9	35.7	26.7 - 42.5	A
			Sr-90	pCi/L	29.3	31.1	22.7 - 36.1	A
			Ba-133	pCi/L	31.5	32.5	25.9 - 36.7	A
			Cs-134	pCi/L	59.65	62.3	50.6 - 68.5	A
			Cs-137	pCi/L	156	157	141 - 175	A
			Co-60	pCi/L	70.6	71.1	64.0 - 80.7	A
			Zn-65	pCi/L	145	126	113 - 149	A
			Gr-A	pCi/L	38.2	51.6	26.9 - 64.7	A
			Gr-B	pCi/L	42.0	36.6	24.1 - 44.2	A
			I-131	pCi/L	24.8	26.3	21.9 - 31.0	A
			U-Nat	pCi/L	146.90	56.2	45.7 - 62.4	N (2)
			H-3	pCi/L	21100	21300	18700 - 23400	A

(1) Yield on the high side of our acceptance range indicates possibility of calcium interference. NCR 15-09

(2) Technician failed to dilute original sample. If dilulted, the result would have been 57.1, which fell within the acceptance limits. NCR 15-19

(a) Teledyne Brown Engineering reported result.

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

(c) ERA evaluation: A=acceptable. Reported result falls within the Warning Limits. NA=not acceptable. Reported result falls outside of the Control Limits. CE=check for Error. Reported result falls within the Control Limits and outside of the Warning Limit.

Intentionally left blank

APPENDIX E

EFFLUENT DATA

Intentionally left blank

TABLE OF CONTENTS

Table of Contents (cont.)

INTRODUCTION

Braidwood Station, a two-unit PWR station, is located in Will County, Illinois, fifteen (15) miles south-southwest of Joliet, Illinois. Each reactor is designed to have a capacity of 3,587 thermal megawatts. Unit No. 1 went critical on May 29, 1987, and Unit No. 2 went critical on March 8, 1988. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

Liquid effluents from Braidwood Station are released to the Kankakee River in controlled batches after radioassay of each batch. Gaseous effluents are released to the atmosphere and are calculated on the basis of analyses of grab samples of noble gases and tritium, as well as continuously collected composite samples of iodine and particulate activity sampled during the course of the year. The results of effluent analyses are summarized on a monthly basis. Airborne concentrations of noble gases, I-131, and particulate radioactivity in offsite areas are calculated using effluent and meteorological data. Carbon-14 concentration in offsite areas is calculated based on industry-approved methodology for estimation of the amount released and meteorological data.

Environmental monitoring is conducted by sampling at indicator and control (background) locations in the vicinity of Braidwood Station to measure changes in radiation or radioactivity levels that may be attributable to station operations. If significant changes attributable to Braidwood Station are measured, these changes are correlated with effluent releases. An environmental monitoring program is conducted which also includes all potential pathways at the site. Gaseous pathways include ground plane (direct), inhalation, vegetation, meat, and milk. Liquid pathways include potable water and freshwater fish. The critical pathway for 2015 gaseous dose was vegetation. The critical pathway for 2015 liquid dose was fresh water fish.

SUMMARY

Calculations based on gaseous and liquid effluents, Kankakee River Flow and meteorological data indicate that public dose due to radioactive material attributable to Braidwood Station during the period does not exceed regulatory or Offsite Dose Calculation Manual (ODCM) limits.

The maximally exposed individual's total body dose due to gaseous and liquid emissions from licensed activities at Braidwood Station is 5.81E-01 mrem.

The assessment of radiation doses to the public is performed in accordance with the ODCM. The results of these analyses confirm that the station is operating in compliance with 10CFR50 Appendix I, 10CFR20 and 40CFR190.

1.0 EFFLUENTS

1.1 Gaseous Effluents to the Atmosphere

Measured concentrations of noble gases, radioiodine, carbon-14, tritium, and particulate radioactivity released to the atmosphere during the year, are listed in Table 1.1-1.

A total of 1.21E-01 curies of fission and activation gases were released with a maximum quarterly average release rate of 4.13E-03 µCi/sec for Unit 1 and 4.13E-03 µCi/sec for Unit 2.

A total of 1.48E-04 curies of radioiodine were released during the year with a maximum average quarterly release rate of 6.55E-06 µCi/sec for Unit 1 and 1.11E-05 µCi/sec for Unit 2.

A total of 1.76-05 curies of beta-gamma emitters were released as airborne particulate matter with a maximum average release rate of 2.21E-06 µCi/sec for Unit 1 and <LLD µCi/sec for Unit 2. Alpha-emitting radionuclides were below the lower limit of detection (LLD) for the year.

A total of 2.74E+02 curies of tritium were released with a maximum average quarterly release rate of 4.47E+00 µCi/sec for Unit 1 and 7.92E+00 µCi/sec for Unit 2.

A total of 8.48E+00 curies of C-14 was released with a maximum average quarterly release rate of 1.41E-01 uCi/sec from Unit 1 and 1.41E-01 uCi/sec from Unit 2.

Alpha-emitting radionuclides were less than the LLD for the year.

1.2 Liquids Released to Kankakee River

A total of 7.58E+06 liters of radioactive liquid wastes (prior to dilution) containing 1.33E-01 curies (excluding tritium, noble gases and alpha) were discharged from the station. These wastes were released at a maximum quarterly diluted average concentration of 4.30E-09 µCi/ml. Alpha-emitting radionuclides were less than the LLD for the year. A total of 3.20E+03 curies of tritium were released from the station. Quarterly release activities are given in Table 1.2-1.

2.0 SOLID RADIOACTIVE WASTE

Solid radioactive wastes were shipped by truck to the Envirocare of Utah and

Waste Control Specialists disposal facilities and various waste processors. For details, refer to the Braidwood Station 2015 Radioactive Effluent Release Report.

3.0 DOSE TO MAN

3.1 Gaseous Effluent Pathways

Table 3.1-1 summarizes the doses resulting from releases of airborne radioactivity via the different exposure pathways.

3.1.1 Noble Gases

3.1.1.1 Gamma Dose Rates

Offsite Gamma air and total body dose rates are shown in Table 3.1-1 and were calculated based on measured effluents and average meteorological data. Based on measured effluents and average meteorological data, the maximum total body dose to an individual would be 5.18E-01 mrem for the year (Table 3.1-1) with an occupancy or shielding factor of 0.7 used. The maximum total body dose based on measured effluents and concurrent meteorological data would be 6.20E-01 mrem (Table 3.4-1). The maximum gamma air dose was 2.45E-06 mrad (Table 3.1-1) based on measured effluents and average meteorological data and 4.76E-01 mrad based on concurrent meteorological date (Table 3.4-1).

3.1.1.2 Beta Air and Skin Dose Rates

The range of beta particles in air is relatively small (on the order of a few meters or less); consequently, plumes of gaseous effluents may be considered "infinite" for purpose of calculating the dose from beta radiation incident on the skin. However, the actual dose to sensitive skin tissues is difficult to calculate due to the effect of the beta particle energies, thickness of inert skin and clothing covering sensitive tissues. For purposes of this report the skin is taken to have a thickness of 7.0 mg/cm^2 and an occupancy factor of 1.0 is used. The skin dose from beta and gamma radiation for the year

was 1.19E-04 mrem based on concurrent meteorological data (Table 3.4-1).

The maximum offsite beta air dose for the year was 5.28E-06 mrad (Table 3.1-1) based on measured effluents and average meteorological data and 6.35E-06 mrad based on concurrent meteorological data (Table 3.4-1).

3.1.2 Radioactive Iodine & Particulate

The human thyroid exhibits a significant capacity to concentrate ingested or inhaled iodine. I-131 released during routine operation of the station may be made available to man resulting in a dose to the thyroid. C-14 is also included in this category. C-14 exhibits a capacity to concentrate in bone. C-14 is released in gaseous form and is absorbed into vegetation through photosynthesis. The principal pathways of interest for C-14 are the consumption of vegetation by humans and milk from which animals have ingested C-14 through the consumption of vegetation. With the inclusion of C-14 in plant effluent calculations, human dose in this category is primarily driven by the release of C-14 from the plant.

The hypothetical dose to the maximum exposed individual living near the station via ingestion of milk and vegetation was calculated. The source of milk and vegetation was assumed to be at the nearest site boundary with the cows pastured and vegetation grown from May through October. The maximum dose from radioactive iodine and particulate (including C-14) to any organ was 2.27E+00 mrem (child/bone) based on measured effluents and average meteorological data and 2.75E+00 mrem based on concurrent meteorological data. The maximum dose from radioactive iodine and particulate (including C-14) to the whole body was 5.18E-01 mrem (child) based on measured effluents and average meteorological data and 6.20E-01 mrem based on concurrent meteorological data.

3.2 Liquid Effluent Pathways

The three principal pathways through the aquatic environment for potential doses to man from liquid waste are ingestion of potable water, eating aquatic foods, and exposure while on the shoreline. Not all of these pathways are significant or applicable at a given time or station but a reasonable approximation of the dose can be made by

adjusting the dose formula for season of the year or type and degree of use of the aquatic environment. NRC developed equations were used to calculate the doses to the whole body, lower GI tracts, thyroid, bone and skin; specific parameters for use in the equations are given in the Braidwood Offsite Dose Calculation Manual. The maximum whole body dose and any organ dose for the year was 6.32E-02 mrem (Table 3.2-1 [child]) and 1.01E-01 mrem, respectively (Table 3.2-1 [adult]).

3.3 Assessment of Dose to Member of Public

During the period January to December, 2015, Braidwood Station did not exceed the following limits as shown in Table 3.1-1 and Table 3.2-1 (based on annual average meteorological data), Table 3.4-1 (based on concurrent meteorological data), and Table 3.3-1:

- The RETS limits on dose or dose commitment to an individual due to radioactive materials in liquid effluents from each reactor unit (1.5 mrem to the whole body or 5 mrem to any organ during any calendar year; 3 mrem to the whole body or 10 mrem to any organ during the calendar year).
- The RETS limits on air dose in noble gases released in gaseous effluents to a member of the public from each reactor unit (5 mrads for gamma radiation or 10 mrad for beta radiation during any calendar quarter; 10 mrad for gamma radiation or 20 mrad for beta radiation during a calendar year).
- The RETS limits on dose to a member of the public due to iodine-131, iodine-133, tritium, and radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from each reactor unit (7.5 mrem to any organ during any calendar quarter; 15 mrem to any organ during any calendar year).
- The 10CFR20 limit on Total Effective Dose Equivalent to individual members of the public (100 mrem) during any calendar year.

4.0 SITE METEOROLOGY

A summary of the site meteorological measurements taken during each calendar quarter of the year is given in Appendix F. The data are presented as cumulative joint frequency distributions of the wind direction for the 203' level and wind speed class by atmospheric stability class determined from the temperature difference between the 199' and 30' levels. Data recovery

for these measurements was 99.2% during 2015.

Intentionally left blank

APPENDIX E-1

DATA TABLES AND FIGURES

Intentionally left blank

Table 1.1-1

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2015
GAS RELEASES
UNIT 1 (Docket Number 50-456)
SUMMATION OF ALL RELEASES

	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error%
A. Fission and Activation Gas Releases						
1. Total Release Activity	Ci	1.22E-03	2.90E-03	3.28E-02	2.73E-02	7.59E+00
2. Average Release Rate	μCi/sec	1.57E-04	3.69E-04	4.13E-03	3.43E-03	
3. Percent of ODCM Limit – gamma	%	1.94E-07	4.63E-07	5.22E-06	3.41E-05	
4. Percent of ODCM Limit - beta	%	4.70E-07	1.12E-06	1.27E-05	1.66E-05	
B. Iodine Releases						
1. Total Iodine	Ci	6.84E-07	5.15E-05	<LLD	7.83E-06	3.32E+01
2. Average Release Rate	μCi/sec	8.80E-08	6.55E-06	N/A	9.85E-07	
3. Percent of ODCM Limit	%	7.70E-07	1.22E-05	N/A	3.65E-06	
C. Particulate (> 8 day half-life) Releases						
1. Particulates with half-lives > 8 days	Ci	<LLD	<LLD	<LLD	1.76E-05	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	2.21E-06	
3. Percent of ODCM Limit	%	N/A	N/A	N/A	1.24E-06	
4. Gross Alpha Radioactivity	Ci	N/A	N/A	N/A	N/A	
D. Tritium Releases						
1. Total Release Activity	Ci	1.79E+01	3.50E+01	3.55E+01	2.36E+01	8.07E+00
2. Average Release Rate	μCi/sec	2.30E+00	4.45E+00	4.47E+00	2.97E+00	
3. Percent of ODCM Limit	%	5.06E-02	9.92E-02	1.01E-01	6.72E-02	
E. Gross Alpha Releases						
1. Total Release Activity	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14 Releases						
1. Total Release Activity	Ci	1.10E+00	9.43E-01	1.12E+00	1.12E+00	
2. Average Release Rate	μCi/sec	1.41E-01	1.20E-01	1.41E-01	1.41E-01	

Note: LLD Values are included in Appendix A of this report.

Table 1.1-1

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2015
GAS RELEASES
UNIT 2 (Docket Number 50-457)
SUMMATION OF ALL RELEASES

	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error%
A. Fission and Activation Gas Releases						
1. Total Activity Released	Ci	1.22E-03	2.90E-03	3.28E-02	1.99E-02	7.59E+00
2. Average Release Rate	μCi/sec	1.57E-04	3.69E-04	4.13E-03	2.50E-03	
3. Percent of ODCM Limit - gamma	%	1.94E-07	4.63E-07	5.22E-06	3.18E-06	
4. Percent of ODCM Limit - beta	%	4.70E-07	1.12E-06	1.27E-05	7.71E-06	
B. Iodine Releases						
1. Total Iodine	Ci	<LLD	1.42E-09	9.42E-09	8.81E-05	3.32E+01
2. Average Release Rate	μCi/sec	N/A	1.81E-10	1.18E-09	1.11E-05	
3. Percent of ODCM Limit	%	N/A	6.62E-10	4.42E-09	1.05E-05	
C. Particulate (> 8 day half-life) Releases						
1. Particulates with half-lives > 8 days	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of OCDM Limit	%	N/A	N/A	N/A	N/A	
4. Gross Alpha Radioactivity	Ci	N/A	N/A	N/A	N/A	
D. Tritium Releases						
1. Total Release Activity	Ci	2.73E+01	3.83E+01	6.30E+01	3.30E+01	8.07E+00
2. Average Release Rate	μCi/sec	3.51E+00	4.87E+00	7.92E+00	4.15E+00	
3. Percent of ODCM Limit	%	7.78E-02	1.09E-01	1.79E-01	9.38E-02	
E. Gross Alpha Releases						
1. Total Release Activity	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM Limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14 Releases						
1. Total Release Activity	Ci	1.10E+00	1.02E+00	1.12E+00	9.52E-01	
2. Average Release Rate	μCi/sec	1.41E-01	1.30E-01	1.41E-01	1.20E-01	

Note: LLD Values are included in Appendix A of this report.

Table 1.2-1

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2015
LIQUID RELEASES
UNIT 1 (Docket Number 50-456)
SUMMATION OF ALL RELEASES

	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error %
A. Fission and Activation Products						
1. Total Release	Ci	1.89E-02	2.88E-02	7.89E-03	1.07E-02	2.64E+00
2. Average Diluted Concentration	μCi/ml	2.07E-09	4.30E-09	1.07E-09	1.35E-09	
3. Percent of applicable limit	%	*	*	*	*	
B. Tritium						
1. Total Release	Ci	2.95E+02	4.60E+02	4.35E+02	4.12E+02	5.85E+00
2. Average Diluted Concentration	μCi/ml	3.22E-05	6.87E-05	5.91E-05	5.18E-05	
3. % of Limit (1E-2 μCi/ml)	%	3.22E-01	6.87E-01	5.91E-01	5.18E-01	
C. Dissolved Noble Gases						
1. Total Release	Ci	<LLD	2.37E-05	<LLD	4.86E-06	2.64E+00
2. Average Diluted Concentration	μCi/ml	N/A	3.54E-12	N/A	6.11E-13	
3. % of Limit (2E-4 μCi/ml)	%	N/A	1.77E-06	N/A	3.06E-07	
D. Gross Alpha						
A. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	1.47E+01
E. Volume of Waste Released (prior to dilution)	liters	5.39E+05	1.08E+06	1.08E+06	1.09E+06	
F. Volume of Dilution Water	liters	9.15E+09	6.70E+09	7.36E+09	7.95E+09	

Note: LLD Values are included in Appendix A of this report.

Note: % Limit Values are included in Appendix C of this report.

*This limit is equal to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10CFR20.1001-20.2402, except for Dissolved Noble Gases. The limits for Dissolved Noble Gases are found the Braidwood Station ODCM, Table C-6 of ODCM Appendix C for Noble Gases.

Table 1.2-1

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2015
LIQUID RELEASES
UNIT 2 (Docket Number 50-457)
SUMMATION OF ALL RELEASES

	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error %
A. Fission and Activation Products						
1. Total Release	Ci	1.89E-02	2.88E-02	7.89E-03	1.07E-02	2.64E+00
2. Average Diluted Concentration	μCi/ml	2.07E-09	4.30E-09	1.07E-09	1.35E-09	
3. Percent of applicable limit	%	*	*	*	*	
B. Tritium						
1. Total Release	Ci	2.95E+02	4.60E+02	4.35E+02	4.12E+02	5.85E+00
2. Average Diluted Concentration	μCi/ml	3.22E-05	6.87E-05	5.91E-05	5.18E-05	
3. % of Limit (1E-2 μCi/ml)	%	3.22E-01	6.87E-01	5.91E-01	5.18E-01	
C. Dissolved Noble Gases						
1. Total Activity Released	Ci	<LLD	2.37E-05	<LLD	4.86E-06	2.64E+00
2. Average Diluted Concentration	μCi/ml	N/A	3.54E-12	N/A	6.11E-13	
3. % of Limit (2E-4 μCi/ml)	%	N/A	1.77E-06	N/A	3.06E-07	
D. Gross Alpha						
1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	1.47E+01
E. Volume of Waste Released (prior to dilution)	liters	5.39E+05	1.08E+06	1.08E+06	1.09E+06	
F. Volume of Dilution Water	liters	9.15E+09	6.70E+09	7.36E+09	7.95E+09	

Note: LLD Values are included in Appendix A of this report.

Note: % Limit Values are included in Appendix C of this report.

*This limit is equal to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10CFR20.1001-2402, except for Dissolved Noble Gases. The limits for Dissolved Noble Gases are found the Braidwood Station ODCM, Table C-6 of ODCM Appendix C for Noble Gases.

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 1

=== RELEASE DATA ==========

Total Release Duration (minutes)	5.644E+05
Total Release Volume (cf)	8.037E+10
Average Release Flowrate (cfm)	1.424E+05
Average Period Flowrate (cfm)	1.529E+05

=== NUCLIDE DATA ==========

Nuclide	uCi	Average uCi/cc	ECrcent Ratio	EC
KR-90	0.00E+00	0.00E+00	0.00E+00	1.00E-09
AR-41	7.36E+03	3.23E-12	3.23E-04	1.00E-08
KR-85M	0.00E+00	0.00E+00	0.00E+00	1.00E-07
KR-87	0.00E+00	0.00E+00	0.00E+00	2.00E-08
KR-88	0.00E+00	0.00E+00	0.00E+00	9.00E-09
XE-131M	0.00E+00	0.00E+00	0.00E+00	2.00E-06
XE-133	5.68E+04	2.50E-11	4.99E-05	5.00E-07
F&AG	6.42E+04	2.82E-11	3.73E-04	
I-131	8.02E-01	3.53E-16	1.76E-06	2.00E-10
I-132	4.60E+01	2.02E-14	1.01E-06	2.00E-08
I-133	1.32E+01	5.80E-15	5.80E-06	1.00E-09
Iodine	6.00E+01	2.64E-14	8.57E-06	
C-14	4.29E+06	1.88E-09	6.28E-01	3.00E-09
Other	4.29E+06	1.88E-09	6.28E-01	
H-3	1.12E+08	4.92E-08	4.92E-01	1.00E-07
H-3	1.12E+08	4.92E-08	4.92E-01	
AC-227	0.00E+00	0.00E+00	0.00E+00	1.00E-15
SN-117M	1.19E+01	5.22E-15	2.61E-06	2.00E-09
CE-141	5.73E+00	2.52E-15	3.15E-06	8.00E-10
P>=8	1.76E+01	7.74E-15	5.76E-06	

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 1

=== NUCLIDE DATA ==========

Nuclide	uCi	Average uCi/cc	ECrcent Ratio	EC
Total	1.16E+08	5.11E-08	1.12E+00	

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 1
Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== PERIOD DOSE BY AGEGROUP, PATHWAY, ORGAN (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	0.00E+00	9.46E-08
AINHL	2.87E-03	3.50E-03	3.50E-03	3.50E-03	3.50E-03	3.50E-03	0.00E+00	3.50E-03
AVEG	1.42E-01	3.36E-02	3.36E-02	3.36E-02	3.36E-02	3.36E-02	0.00E+00	3.36E-02
AGMILK	4.25E-03	4.51E-03	4.59E-03	4.51E-03	4.51E-03	4.51E-03	0.00E+00	4.51E-03
ACMEAT	5.26E-02	1.13E-02	1.13E-02	1.13E-02	1.13E-02	1.13E-02	0.00E+00	1.13E-02
ACMILK	5.73E-02	1.33E-02	1.33E-02	1.33E-02	1.33E-02	1.33E-02	0.00E+00	1.33E-02
TGPD	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	0.00E+00	9.46E-08
TINHL	4.10E-03	3.75E-03	3.76E-03	3.75E-03	3.75E-03	3.75E-03	0.00E+00	3.75E-03
TVEG	2.29E-01	5.20E-02	5.20E-02	5.20E-02	5.20E-02	5.20E-02	0.00E+00	5.20E-02
TGMILK	7.67E-03	6.29E-03	6.41E-03	6.29E-03	6.29E-03	6.29E-03	0.00E+00	6.29E-03
TCMEAT	4.44E-02	9.33E-03	9.33E-03	9.33E-03	9.33E-03	9.33E-03	0.00E+00	9.33E-03
TCMILK	1.06E-01	2.35E-02	2.36E-02	2.35E-02	2.35E-02	2.35E-02	0.00E+00	2.35E-02
CGPD	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	0.00E+00	9.46E-08
CINHL	5.67E-03	3.70E-03	3.70E-03	3.70E-03	3.70E-03	3.70E-03	0.00E+00	3.70E-03
CVEG	5.52E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	0.00E+00	1.20E-01
CGMILK	2.46E-01	5.95E-02	5.97E-02	5.95E-02	5.95E-02	5.95E-02	0.00E+00	5.95E-02
CCMEAT	8.35E-02	1.73E-02	1.73E-02	1.73E-02	1.73E-02	1.73E-02	0.00E+00	1.73E-02
CCMILK	2.60E-01	5.56E-02	5.58E-02	5.56E-02	5.56E-02	5.56E-02	0.00E+00	5.56E-02
IGPD	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	0.00E+00	9.46E-08
IINHL	4.18E-03	2.36E-03	2.36E-03	2.36E-03	2.36E-03	2.36E-03	0.00E+00	2.36E-03
IGMILK	5.10E-01	1.20E-01	1.21E-01	1.20E-01	1.20E-01	1.20E-01	0.00E+00	1.20E-01
ICMILK	5.10E-01	1.14E-01	1.15E-01	1.14E-01	1.14E-01	1.14E-01	0.00E+00	1.14E-01

=== PERIOD DOSE BY AGEGROUP, ORGAN (mrem) ====================

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	2.59E-01	6.61E-02	6.63E-02	6.61E-02	6.61E-02	6.61E-02	0.00E+00	6.61E-02
TEEN	3.91E-01	9.49E-02	9.51E-02	9.49E-02	9.49E-02	9.49E-02	0.00E+00	9.49E-02
CHILD	1.15E+00	2.56E-01	2.57E-01	2.56E-01	2.56E-01	2.56E-01	0.00E+00	2.56E-01
INFANT	1.02E+00	2.37E-01	2.38E-01	2.37E-01	2.37E-01	2.37E-01	0.00E+00	2.37E-01

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 1
Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	BONE	1.15E+00	31-day	2.25E-01	5.10E+02	3.00E-01	3.83E+02
Qrtr->End	CHILD	BONE	1.15E+00	Quarter	5.63E+00	2.04E+01	7.50E+00	1.53E+01
Year->End	CHILD	BONE	1.15E+00	Annual	1.13E+01	1.02E+01	1.50E+01	7.66E+00

Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	0.00E+00
C-14	1.00E+02
I-131	1.11E-04
I-132	2.91E-06
I-133	2.69E-05
CE-141	4.45E-06

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body)) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	TBODY	2.56E-01	31-day	1.50E-01	1.71E+02	2.00E-01	1.28E+02
Qrtr->End	CHILD	TBODY	2.56E-01	Quarter	5.25E+00	4.88E+00	7.50E+00	3.42E+00
Year->End	CHILD	TBODY	2.56E-01	Annual	1.05E+01	2.44E+00	1.50E+01	1.71E+00

Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.33E+00
C-14	9.06E+01
I-131	2.85E-04
I-132	1.29E-05
I-133	6.01E-05
CE-141	1.62E-05

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 1
Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Gamma) ==========

Dose Period	Dose Type	Dose (mrad)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	Gamma	2.00E-06	31-day	1.50E-01	1.33E-03	2.00E-01	9.99E-04
Qrtr->End	Gamma	2.00E-06	Quarter	3.75E+00	5.33E-05	5.00E+00	4.00E-05
Year->End	Gamma	2.00E-06	Annual	7.50E+00	2.66E-05	1.00E+01	2.00E-05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
KR-90	0.00E+00
AR-41	7.73E+01
KR-85M	0.00E+00
KR-87	0.00E+00
KR-88	0.00E+00
XE-131M	0.00E+00
XE-133	2.27E+01

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Beta)) ==========

Dose Period	Dose Type	Dose (mrad)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	Beta	3.08E-06	31-day	3.00E-01	1.03E-03	4.00E-01	7.71E-04
Qrtr->End	Beta	3.08E-06	Quarter	7.50E+00	4.11E-05	1.00E+01	3.08E-05
Year->End	Beta	3.08E-06	Annual	1.50E+01	2.06E-05	2.00E+01	1.54E-05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
KR-90	0.00E+00
AR-41	2.88E+01
KR-85M	0.00E+00
KR-87	0.00E+00
KR-88	0.00E+00
XE-131M	0.00E+00
XE-133	7.12E+01

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 2

=== RELEASE DATA ==========

Total Release Duration (minutes)	5.541E+05
Total Release Volume (cf)	6.836E+10
Average Release Flowrate (cfm)	1.234E+05
Average Period Flowrate (cfm)	1.301E+05

=== NUCLIDE DATA ==========

Nuclide	uCi	Average uCi/cc	ECrcent Ratio	EC
AR-41	0.00E+00	0.00E+00	0.00E+00	1.00E-08
KR-85M	0.00E+00	0.00E+00	0.00E+00	1.00E-07
KR-87	0.00E+00	0.00E+00	0.00E+00	2.00E-08
KR-89	0.00E+00	0.00E+00	0.00E+00	1.00E-09
XE-131M	0.00E+00	0.00E+00	0.00E+00	2.00E-06
XE-133	5.68E+04	2.94E-11	5.87E-05	5.00E-07
F&AG	5.68E+04	2.94E-11	5.87E-05	
I-131	2.65E-01	1.37E-16	6.84E-07	2.00E-10
I-132	8.78E+01	4.54E-14	2.27E-06	2.00E-08
I-133	2.45E-02	1.27E-17	1.27E-08	1.00E-09
Iodine	8.81E+01	4.55E-14	2.96E-06	
C-14	4.19E+06	2.17E-09	7.22E-01	3.00E-09
Other	4.19E+06	2.17E-09	7.22E-01	
H-3	1.62E+08	8.35E-08	8.35E-01	1.00E-07
H-3	1.62E+08	8.35E-08	8.35E-01	
AC-227	0.00E+00	0.00E+00	0.00E+00	1.00E-15
P>=8	0.00E+00	0.00E+00	0.00E+00	
Total	1.66E+08	8.57E-08	1.56E+00	

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 2

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 2
Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== PERIOD DOSE BY AGEGROUP, PATHWAY, ORGAN (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	0.00E+00	5.93E-08
AINHL	2.81E-03	4.80E-03	4.80E-03	4.80E-03	4.80E-03	4.80E-03	0.00E+00	4.80E-03
AVEG	1.38E-01	3.53E-02	3.53E-02	3.53E-02	3.53E-02	3.53E-02	0.00E+00	3.53E-02
AGMILK	4.15E-03	6.11E-03	6.14E-03	6.11E-03	6.11E-03	6.11E-03	0.00E+00	6.11E-03
ACMEAT	5.14E-02	1.14E-02	1.14E-02	1.14E-02	1.14E-02	1.14E-02	0.00E+00	1.14E-02
ACMILK	5.60E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	0.00E+00	1.38E-02
TGPD	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	0.00E+00	5.93E-08
TINHL	4.01E-03	5.06E-03	5.06E-03	5.06E-03	5.06E-03	5.06E-03	0.00E+00	5.06E-03
TVEG	2.24E-01	5.37E-02	5.37E-02	5.37E-02	5.37E-02	5.37E-02	0.00E+00	5.37E-02
TGMILK	7.50E-03	8.37E-03	8.40E-03	8.37E-03	8.37E-03	8.37E-03	0.00E+00	8.37E-03
TCMEAT	4.34E-02	9.33E-03	9.33E-03	9.33E-03	9.33E-03	9.33E-03	0.00E+00	9.33E-03
TCMILK	1.03E-01	2.40E-02	2.41E-02	2.40E-02	2.40E-02	2.40E-02	0.00E+00	2.40E-02
CGPD	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	0.00E+00	5.93E-08
CINHL	5.54E-03	4.85E-03	4.85E-03	4.85E-03	4.85E-03	4.85E-03	0.00E+00	4.85E-03
CVEG	5.40E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	0.00E+00	1.22E-01
CGMILK	2.41E-01	6.16E-02	6.17E-02	6.16E-02	6.16E-02	6.16E-02	0.00E+00	6.16E-02
CCMEAT	8.16E-02	1.72E-02	1.72E-02	1.72E-02	1.72E-02	1.72E-02	0.00E+00	1.72E-02
CCMILK	2.55E-01	5.61E-02	5.62E-02	5.61E-02	5.61E-02	5.61E-02	0.00E+00	5.61E-02
IGPD	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	5.93E-08	0.00E+00	5.93E-08
IINHL	4.09E-03	3.01E-03	3.01E-03	3.01E-03	3.01E-03	3.01E-03	0.00E+00	3.01E-03
IGMILK	4.98E-01	1.23E-01	1.23E-01	1.23E-01	1.23E-01	1.23E-01	0.00E+00	1.23E-01
ICMILK	4.98E-01	1.14E-01	1.15E-01	1.14E-01	1.14E-01	1.14E-01	0.00E+00	1.14E-01

=== PERIOD DOSE BY AGEGROUP, ORGAN (mrem) ====================

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	2.53E-01	7.14E-02	7.14E-02	7.14E-02	7.14E-02	7.14E-02	0.00E+00	7.14E-02
TEEN	3.82E-01	1.00E-01	1.01E-01	1.00E-01	1.00E-01	1.00E-01	0.00E+00	1.00E-01
CHILD	1.12E+00	2.62E-01	2.62E-01	2.62E-01	2.62E-01	2.62E-01	0.00E+00	2.62E-01
INFANT	1.00E+00	2.40E-01	2.41E-01	2.40E-01	2.40E-01	2.40E-01	0.00E+00	2.40E-01

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 2
Receptor.....: 5 Composite Crit. Receptor - IP
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	BONE	1.12E+00	31-day	2.25E-01	4.99E+02	3.00E-01	3.74E+02
Qrtr->End	CHILD	BONE	1.12E+00	Quarter	5.63E+00	2.00E+01	7.50E+00	1.50E+01
Year->End	CHILD	BONE	1.12E+00	Annual	1.13E+01	9.98E+00	1.50E+01	7.48E+00

Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	0.00E+00
C-14	9.98E+01
I-131	3.74E-05
I-132	5.68E-06
I-133	5.12E-08

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body)) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	TBODY	2.62E-01	31-day	1.50E-01	1.74E+02	2.00E-01	1.31E+02
Qrtr->End	CHILD	TBODY	2.62E-01	Quarter	5.25E+00	4.98E+00	7.50E+00	3.49E+00
Year->End	CHILD	TBODY	2.62E-01	Annual	1.05E+01	2.49E+00	1.50E+01	1.74E+00

Critical Pathway.....: 2 Vegetation (VEG)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	1.32E+01
C-14	8.68E+01
I-131	9.22E-05
I-132	2.41E-05
I-133	1.09E-07

Table 3.1-1

RETDAS v3.6.3 <BRA> VSSI

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (min): 5.256E+05
Coefficient Type.....: Historical
Unit.....: 2
Receptor.....: 4 Composite Crit. Receptor - NG
Distance (meters)....: 0.0
Compass Point.....: 0.0

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Gamma) ==========

Dose Period	Dose Type	Dose (mrad)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	Gamma	4.53E-07	31-day	1.50E-01	3.02E-04	2.00E-01	2.26E-04
Qrtr->End	Gamma	4.53E-07	Quarter	3.75E+00	1.21E-05	5.00E+00	9.06E-06
Year->End	Gamma	4.53E-07	Annual	7.50E+00	6.04E-06	1.00E+01	4.53E-06

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	0.00E+00
KR-85M	0.00E+00
KR-87	0.00E+00
KR-89	0.00E+00
XE-131M	0.00E+00
XE-133	1.00E+02

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Beta)) ==========

Dose Period	Dose Type	Dose (mrad)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	Beta	2.20E-06	31-day	3.00E-01	7.32E-04	4.00E-01	5.49E-04
Qrtr->End	Beta	2.20E-06	Quarter	7.50E+00	2.93E-05	1.00E+01	2.20E-05
Year->End	Beta	2.20E-06	Annual	1.50E+01	1.46E-05	2.00E+01	1.10E-05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	0.00E+00
KR-85M	0.00E+00
KR-87	0.00E+00
KR-89	0.00E+00
XE-131M	0.00E+00
XE-133	1.00E+02

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 1

=== MULTIPLE RELEASE POINT MESSAGE ==========
Undiluted and Diluted Flowrate(s) and Concentration(s) cannot be combined.

=== RELEASE DATA ==========
Total Release Duration (minutes)..... 1.755E+06
Total Undiluted Volume Released (gallons)..... NA
Average Undiluted Flowrate (gpm)..... NA

Total Dilution Volume (gallons)..... NA
Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA ==========

Nuclide	uCi
BE-7	3.18E+01
CO-57	4.26E+00
NB-97	7.55E+02
SN-113	8.58E+00
SB-124	5.36E+02
SB-125	2.54E+04
BA-133	1.89E+00
TE-123M	3.94E+02
CR-51	4.58E+03
MN-54	1.99E+02
FE-59	4.20E+02
CO-58	5.66E+03
CO-60	6.02E+03
ZR-95	1.75E+02
NB-95	3.99E+02
AG-110M	3.28E+02
TE-125M	1.54E+04
TE-132	9.37E+01
I-132	4.17E+01
CS-136	1.62E+00
BA-139	8.57E+00
Gamma	6.04E+04
AR-41	1.89E+01
XE-133	9.68E+00
D&EG	2.86E+01
H-3	1.60E+09

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05

=== NUCLIDE DATA ==========

Nuclide	uCi
FE-55	4.54E+03
NI-63	1.42E+03
Beta	1.60E+09
Total	1.60E+09

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 1
Receptor.....: 0 Liquid Receptor

=== PERIOD DOSE BY AGEGROUP, PATHWAY, ORGAN (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	3.52E-05	1.93E-02	1.93E-02	1.93E-02	1.93E-02	1.94E-02	0.00E+00	1.93E-02
AFWFSp	2.46E-03	8.66E-03	8.33E-03	1.26E-02	8.03E-03	3.09E-02	0.00E+00	8.35E-03
TPWtr	3.37E-05	1.36E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02	0.00E+00	1.36E-02
TFWFSp	2.61E-03	6.85E-03	6.48E-03	6.19E-03	6.19E-03	2.28E-02	0.00E+00	6.51E-03
CPWtr	1.02E-04	2.61E-02	2.61E-02	2.61E-02	2.61E-02	2.61E-02	0.00E+00	2.61E-02
CFWFSp	3.39E-03	5.76E-03	5.53E-03	5.13E-03	5.13E-03	1.12E-02	0.00E+00	5.53E-03
IPWtr	8.84E-05	2.56E-02	2.56E-02	2.56E-02	2.56E-02	2.56E-02	0.00E+00	2.56E-02

=== PERIOD DOSE BY AGEGROUP, ORGAN (mrem) ====================

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	2.50E-03	2.80E-02	2.76E-02	3.19E-02	2.73E-02	5.03E-02	0.00E+00	2.76E-02
TEEN	2.64E-03	2.04E-02	2.01E-02	1.98E-02	1.98E-02	3.64E-02	0.00E+00	2.01E-02
CHILD	3.49E-03	3.19E-02	3.16E-02	3.12E-02	3.12E-02	3.74E-02	0.00E+00	3.16E-02
INFANT	8.84E-05	2.56E-02	2.56E-02	2.56E-02	2.56E-02	2.56E-02	0.00E+00	2.56E-02

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 1
Receptor.....: 0 Liquid Receptor

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	ADULT	GILLI	5.03E-02	31-day	1.50E-01	3.35E+01	2.00E-01	2.51E+01
Qrtr->End	ADULT	GILLI	5.03E-02	Quarter	3.75E+00	1.34E+00	5.00E+00	1.01E+00
Year->End	ADULT	GILLI	5.03E-02	Annual	7.50E+00	6.70E-01	1.00E+01	5.03E-01

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	5.43E+01
CR-51	8.28E-02
MN-54	1.50E-01
FE-55	6.76E-02
FE-59	1.95E-01
CO-58	5.97E-01
CO-60	1.69E+00
NI-63	3.66E-02
ZR-95	3.96E-03
NB-95	3.36E+01
AG-110M	1.18E-02
TE-125M	8.85E+00
TE-132	4.10E-01
I-132	9.77E-06
CS-136	1.27E-03
BA-139	1.22E-06

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body)) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	TBODY	3.16E-02	31-day	4.50E-02	7.03E+01	6.00E-02	5.27E+01
Qrtr->End	CHILD	TBODY	3.16E-02	Quarter	1.13E+00	2.81E+00	1.50E+00	2.11E+00
Year->End	CHILD	TBODY	3.16E-02	Annual	2.25E+00	1.41E+00	3.00E+00	1.05E+00

Critical Pathway.....: 0 Potable Water (PWtr)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.86E+01
CR-51	5.81E-04

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
MN-54	1.61E-02
FE-55	6.29E-02
FE-59	4.08E-02
CO-58	1.19E-01
CO-60	3.57E-01
NI-63	1.90E-01
ZR-95	2.20E-06
NB-95	5.25E-03
AG-110M	4.61E-05
TE-125M	6.60E-01
TE-132	1.51E-02
I-132	3.86E-05
CS-136	9.51E-03
BA-139	6.19E-08

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 2

=== MULTIPLE RELEASE POINT MESSAGE ==========
Undiluted and Diluted Flowrate(s) and Concentration(s) cannot be combined.

=== RELEASE DATA ==========
Total Release Duration (minutes)..... 1.755E+06
Total Undiluted Volume Released (gallons)..... NA
Average Undiluted Flowrate (gpm)..... NA

Total Dilution Volume (gallons)..... NA
Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA ==========

Nuclide	uCi
BE-7	3.18E+01
CO-57	4.26E+00
NB-97	7.55E+02
SN-113	8.58E+00
SB-124	5.36E+02
SB-125	2.54E+04
BA-133	1.89E+00
TE-123M	3.94E+02
CR-51	4.58E+03
MN-54	1.99E+02
FE-59	4.20E+02
CO-58	5.66E+03
CO-60	6.02E+03
ZR-95	1.75E+02
NB-95	3.99E+02
AG-110M	3.28E+02
TE-125M	1.54E+04
TE-132	9.37E+01
I-132	4.17E+01
CS-136	1.62E+00
BA-139	8.57E+00
Gamma	6.04E+04
AR-41	1.89E+01
XE-133	9.68E+00
D&EG	2.86E+01
H-3	1.60E+09

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05

=== NUCLIDE DATA ==========

Nuclide	uCi
FE-55	4.54E+03
NI-63	1.42E+03
Beta	1.60E+09
Total	1.60E+09

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 2
Receptor.....: 0 Liquid Receptor

=== PERIOD DOSE BY AGEGROUP, PATHWAY, ORGAN (mrem) ==========

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	3.52E-05	1.93E-02	1.93E-02	1.93E-02	1.93E-02	1.94E-02	0.00E+00	1.93E-02
AFWFSp	2.46E-03	8.66E-03	8.33E-03	1.26E-02	8.03E-03	3.09E-02	0.00E+00	8.35E-03
TPWtr	3.37E-05	1.36E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02	0.00E+00	1.36E-02
TFWFSp	2.61E-03	6.85E-03	6.48E-03	6.19E-03	6.19E-03	2.28E-02	0.00E+00	6.51E-03
CPWtr	1.02E-04	2.61E-02	2.61E-02	2.61E-02	2.61E-02	2.61E-02	0.00E+00	2.61E-02
CFWFSp	3.39E-03	5.76E-03	5.53E-03	5.13E-03	5.13E-03	1.12E-02	0.00E+00	5.53E-03
IPWtr	8.84E-05	2.56E-02	2.56E-02	2.56E-02	2.56E-02	2.56E-02	0.00E+00	2.56E-02

=== PERIOD DOSE BY AGEGROUP, ORGAN (mrem) ==========

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	2.50E-03	2.80E-02	2.76E-02	3.19E-02	2.73E-02	5.03E-02	0.00E+00	2.76E-02
TEEN	2.64E-03	2.04E-02	2.01E-02	1.98E-02	1.98E-02	3.64E-02	0.00E+00	2.01E-02
CHILD	3.49E-03	3.19E-02	3.16E-02	3.12E-02	3.12E-02	3.74E-02	0.00E+00	3.16E-02
INFANT	8.84E-05	2.56E-02	2.56E-02	2.56E-02	2.56E-02	2.56E-02	0.00E+00	2.56E-02

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05
Unit.....: 2
Receptor.....: 0 Liquid Receptor

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	ADULT	GILLI	5.03E-02	31-day	1.50E-01	3.35E+01	2.00E-01	2.51E+01
Qrtr->End	ADULT	GILLI	5.03E-02	Quarter	3.75E+00	1.34E+00	5.00E+00	1.01E+00
Year->End	ADULT	GILLI	5.03E-02	Annual	7.50E+00	6.70E-01	1.00E+01	5.03E-01

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	5.43E+01
CR-51	8.28E-02
MN-54	1.50E-01
FE-55	6.76E-02
FE-59	1.95E-01
CO-58	5.97E-01
CO-60	1.69E+00
NI-63	3.66E-02
ZR-95	3.96E-03
NB-95	3.36E+01
AG-110M	1.18E-02
TE-125M	8.85E+00
TE-132	4.10E-01
I-132	9.77E-06
CS-136	1.27E-03
BA-139	1.22E-06

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body)) ==========

Dose Period	Age Group	Organ	Dose (mrem)	Limit Period	Admin Limit	Admin % of Limit	T.Spec Limit	T.Spec % of Limit
Strt->End	CHILD	TBODY	3.16E-02	31-day	4.50E-02	7.03E+01	6.00E-02	5.27E+01
Qrtr->End	CHILD	TBODY	3.16E-02	Quarter	1.13E+00	2.81E+00	1.50E+00	2.11E+00
Year->End	CHILD	TBODY	3.16E-02	Annual	2.25E+00	1.41E+00	3.00E+00	1.05E+00

Critical Pathway.....: 0 Potable Water (PWtr)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.86E+01
CR-51	5.81E-04

Table 3.2-1

RETDAS v3.6.3 <BRA> VSSI

LIQUID RELEASE AND DOSE SUMMARY REPORT
------ (PERIOD BASIS - BY UNIT) ------

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2015 00:00
Period End Date.....: 01/01/2016 00:00
Period Duration (mins): 5.256E+05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
MN-54	1.61E-02
FE-55	6.29E-02
FE-59	4.08E-02
CO-58	1.19E-01
CO-60	3.57E-01
NI-63	1.90E-01
ZR-95	2.20E-06
NB-95	5.25E-03
AG-110M	4.61E-05
TE-125M	6.60E-01
TE-132	1.51E-02
I-132	3.86E-05
CS-136	9.51E-03
BA-139	6.19E-08

Table 3-3.1

Braidwood Nuclear Station

Unit 1

10 CFR 20 Compliance Assessment

Period of Assessment: 1/1/15 through 12/31/15
Calculated: 04/19/16

10 CFR 20.1301(a)(1) Compliance

Total Effective Dose Equivalent (TEDE)	mrem/year	1.14E+00
10 CFR 20.1301(a)(1) limit	mrem/year	100.00
	% of limit	1.14%

Compliance Summary

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
TEDE (mrem)	2.61E-01	2.97E-01	2.97E-01	2.88E-01	1.14E+00

Table 3-3.1 (cont.)

Braidwood Nuclear Station

Unit 2

10 CFR 20 Compliance Assessment

Period of Assessment: 1/1/15 through 12/31/15
Calculated: 04/19/16

10 CFR 20.1301(a)(1) Compliance

Total Effective Dose Equivalent (TEDE)	mrem/year	1.17E+00
10 CFR 20.1301(a)(1) limit	mrem/year	100.00
	% of limit	1.17%

Compliance Summary

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
TEDE (mrem)	2.71E-01	3.16E-01	3.23E-01	2.65E-01	1.17E+00

Table 3.4-1

The following are the maximum annual calculated cumulative offsite doses resulting from Braidwood Station airborne releases in 2015 based on concurrent meteorological data:

Unit 1:

Dose	Maximum Value	Sector Affected
gamma air [1]	3.870 x10^{-6} mrad	North
beta air [2]	3.700 x10^{-6} mrad	North
whole body [3]	3.070 x10^{-1} mrem	North
skin [4]	4.640 x 10^{-6} mrem	North
organ [5] (child-bone)	1.390 x10^{+0} mrem	North

Unit 1 Compliance Status

10 CFR 50 Appendix I	**Yearly Objective**	**% of Appendix I**
gamma air	10.0 mrad	0.00E+00
beta air	20.0 mrad	0.00E+00
whole body	5.0 mrem	6.14E+00
skin	15.0 mrem	0.00E+00
organ	15.0 mrem	9.27E+00

Unit 2:

Dose	Maximum Value	Sector Affected
gamma air [1]	8.910 x10^{-7} mrad	North
beta air [2]	2.650 x10^{-6} mrad	North
whole body [3]	3.130 x10^{-1} mrem	North
skin [4]	1.460 x10^{-6} mrem	North
organ [5] (child-bone)	1.360 x10^{+0} mrem	North

Unit 2 Compliance Status

10 CFR 50 Appendix I	**Yearly Objective**	**% of Appendix I**
gamma air	10.0 mrad	0.00E+00
beta air	20.0 mrad	0.00E+00
whole body	5.0 mrem	6.26E+00
skin	15.0 mrem	0.00E+00
organ	15.0 mrem	9.07E+00

(1) Gamma Air Dose – GASPAR II, NUREG-0597
(2) Beta Air Dose – GASPAR II, NUREG-0597
(3) Whole Body Dose – GASPAR II, NUREG-0597
(4) Skin Dose – GASPAR II, NUREG-0597
(5) Inhalation and Food Pathways Dose – GASPAR II, NUREG-0597

Intentionally left blank

APPENDIX F

METEOROLOGICAL DATA

Intentionally left blank

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	1	0	0	1
NNE	0	0	4	0	0	0	4
NE	0	0	0	0	0	0	0
ENE	0	1	4	0	0	0	5
E	0	0	1	0	0	0	1
ESE	0	2	3	0	0	0	5
SE	0	0	4	0	0	0	4
SSE	0	0	0	1	0	0	1
S	0	0	0	4	0	0	4
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	2	0	0	2
W	0	0	5	0	0	0	5
WNW	0	4	10	0	0	0	14
NW	0	5	24	0	0	0	29
NNW	0	0	14	2	3	0	19
Variable	0	0	0	0	0	0	0
Total	0	12	69	10	3	0	94

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	0	0	0	2
NNE	0	0	1	0	0	0	1
NE	0	3	5	0	0	0	8
ENE	0	5	0	0	0	0	5
E	0	4	1	0	0	0	5
ESE	0	2	1	0	0	0	3
SE	0	1	1	0	0	0	2
SSE	0	0	2	0	0	0	2
S	0	0	0	1	0	0	1
SSW	0	0	2	0	0	0	2
SW	0	0	0	1	0	0	1
WSW	0	0	1	4	0	0	5
W	0	1	3	0	0	0	4
WNW	0	3	2	2	0	0	7
NW	0	4	5	0	0	0	9
NNW	0	3	6	2	2	0	13
Variable	0	0	0	0	0	0	0
Total	0	26	32	10	2	0	70

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	1	1	0	0	2
NE	0	4	0	0	0	0	4
ENE	0	2	0	0	0	0	2
E	0	1	1	0	0	0	2
ESE	0	4	1	0	0	0	5
SE	0	3	0	0	0	0	3
SSE	0	1	2	0	0	0	3
S	0	2	0	2	0	0	4
SSW	0	1	2	3	0	0	6
SW	0	1	3	2	0	0	6
WSW	0	1	0	1	0	0	2
W	0	6	4	0	0	0	10
WNW	0	2	5	0	0	0	7
NW	0	2	6	0	0	0	8
NNW	0	1	6	3	0	0	10
Variable	0	0	0	0	0	0	0
Total	0	31	32	12	0	0	75

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	10	9	38	0	0	0	57
NNE	6	8	24	17	0	0	55
NE	13	20	11	1	0	0	45
ENE	21	29	6	0	0	0	56
E	7	13	0	0	0	0	20
ESE	4	17	2	0	0	0	23
SE	2	19	8	0	0	0	29
SSE	5	20	13	4	0	0	42
S	2	14	17	12	3	0	48
SSW	4	12	38	26	3	1	84
SW	2	27	59	12	0	0	100
WSW	2	23	21	3	0	0	49
W	9	36	27	3	0	0	75
WNW	8	24	42	6	0	0	80
NW	8	16	22	2	0	0	48
NNW	6	16	36	10	1	0	69
Variable	1	0	0	0	0	0	1
Total	110	303	364	96	7	1	881

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	10	13	4	0	0	0	27
NNE	4	3	0	2	0	0	9
NE	12	9	4	1	0	0	26
ENE	11	20	0	0	0	0	31
E	27	5	0	0	0	0	32
ESE	7	34	2	0	0	0	43
SE	7	19	5	0	0	0	31
SSE	3	31	14	4	0	0	52
S	0	25	32	9	0	0	66
SSW	0	10	40	6	0	0	56
SW	2	20	44	7	0	0	73
WSW	6	37	17	0	0	0	60
W	21	36	19	0	0	0	76
WNW	14	40	9	0	0	0	63
NW	29	34	10	1	0	0	74
NNW	9	35	6	0	0	0	50
Variable	0	0	0	0	0	0	0
Total	162	371	206	30	0	0	769

Hours of calm in this stability class: 7
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	1	0	0	0	0	3
NNE	3	0	0	0	0	0	3
NE	1	0	0	0	0	0	1
ENE	6	0	0	0	0	0	6
E	20	0	0	0	0	0	20
ESE	6	1	0	0	0	0	7
SE	1	1	0	0	0	0	2
SSE	2	0	0	0	0	0	2
S	1	0	0	0	0	0	1
SSW	2	3	1	0	0	0	6
SW	3	5	4	0	0	0	12
WSW	13	23	1	0	0	0	37
W	13	25	0	0	0	0	38
WNW	18	5	0	0	0	0	23
NW	9	2	0	0	0	0	11
NNW	3	0	1	0	0	0	4
Variable	1	0	0	0	0	0	1
Total	104	66	7	0	0	0	177

Hours of calm in this stability class: 8
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	5	0	0	0	0	0	5
E	7	0	0	0	0	0	7
ESE	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	0	0	1	0	0	0	1
SW	1	3	0	0	0	0	4
WSW	3	4	0	0	0	0	7
W	6	3	0	0	0	0	9
WNW	6	0	0	0	0	0	6
NW	3	0	0	0	0	0	3
NNW	2	0	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	37	10	1	0	0	0	48

Hours of calm in this stability class: 23
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Speed (in mph)

Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	1	0	0	1
NNE	0	0	0	5	0	0	5
NE	0	0	0	0	0	0	0
ENE	0	0	1	2	0	0	3
E	0	1	2	1	0	0	4
ESE	0	0	0	2	1	0	3
SE	0	0	1	3	1	0	5
SSE	0	0	0	0	0	0	0
S	0	0	0	0	4	0	4
SSW	0	0	0	0	1	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	2	0	2
W	0	0	2	3	0	0	5
WNW	0	0	3	4	4	0	11
NW	0	1	7	21	3	0	32
NNW	0	0	4	9	2	3	18
Variable	0	0	0	0	0	0	0
Total	0	2	20	51	18	3	94

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	1	0	0	3
NNE	0	0	0	0	0	0	0
NE	0	1	2	3	0	0	6
ENE	0	3	1	2	0	0	6
E	0	1	2	1	0	0	4
ESE	0	1	0	1	0	0	2
SE	0	0	4	1	0	0	5
SSE	0	0	0	2	0	0	2
S	0	0	0	0	0	0	0
SSW	0	0	2	0	1	0	3
SW	0	0	0	0	1	0	1
WSW	0	1	0	2	3	0	6
W	0	1	0	2	0	0	3
WNW	0	0	4	0	3	0	7
NW	0	1	2	6	2	0	11
NNW	0	1	5	2	2	2	12
Variable	0	0	0	0	0	0	0
Total	0	10	24	23	12	2	71

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	1	0	1	0	2
NE	0	1	0	0	0	0	1
ENE	0	3	1	0	0	0	4
E	0	1	1	1	0	0	3
ESE	0	1	2	1	0	0	4
SE	0	2	2	0	0	0	4
SSE	0	0	0	2	0	0	2
S	0	1	1	0	0	0	2
SSW	0	0	2	0	2	1	5
SW	0	0	0	6	1	0	7
WSW	0	3	0	1	0	0	4
W	0	1	5	0	1	0	7
WNW	0	3	2	0	4	0	9
NW	0	1	1	8	0	0	10
NNW	0	0	2	5	2	1	10
Variable	0	0	0	0	0	0	0
Total	0	17	21	24	11	2	75

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	7	16	20	1	0	47
NNE	1	8	10	24	11	3	57
NE	4	11	10	9	6	0	40
ENE	5	20	12	10	0	0	47
E	2	19	12	4	0	0	37
ESE	0	6	9	6	0	0	21
SE	2	11	13	8	2	0	36
SSE	2	9	8	7	6	0	32
S	3	7	19	8	9	4	50
SSW	3	5	7	34	13	11	73
SW	4	10	36	38	9	3	100
WSW	0	6	39	18	2	0	65
W	2	25	7	19	6	0	59
WNW	4	12	17	31	18	3	85
NW	3	7	8	25	13	2	58
NNW	2	11	18	32	10	2	75
Variable	1	0	0	0	0	0	1
Total	41	174	241	293	106	28	883

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	12	18	4	0	0	35
NNE	2	11	4	0	0	1	18
NE	0	4	5	1	3	0	13
ENE	2	4	14	4	0	0	24
E	6	9	14	0	0	0	29
ESE	0	6	19	7	3	0	35
SE	2	5	34	6	2	0	49
SSE	0	12	14	6	6	0	38
S	0	3	22	29	11	0	65
SSW	0	1	15	41	16	1	74
SW	1	4	24	37	6	1	73
WSW	3	10	16	29	0	0	58
W	2	7	16	24	2	0	51
WNW	0	13	22	28	2	0	65
NW	1	15	25	36	6	0	83
NNW	2	16	29	17	0	0	64
Variable	0	0	0	0	0	0	0
Total	22	132	291	269	57	3	774

Hours of calm in this stability class: 2
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	2	1	0	0	5
NNE	0	0	2	1	0	0	3
NE	1	1	0	0	0	0	2
ENE	1	1	2	0	0	0	4
E	2	1	3	0	0	0	6
ESE	1	2	9	4	0	0	16
SE	1	6	4	0	0	0	11
SSE	0	2	0	0	0	0	2
S	0	3	0	0	0	0	3
SSW	0	0	1	0	0	0	1
SW	0	7	3	3	1	0	14
WSW	0	4	11	0	0	0	15
W	0	5	17	18	1	0	41
WNW	0	3	8	17	0	0	28
NW	1	3	18	4	0	0	26
NNW	0	0	5	2	0	0	7
Variable	1	0	0	0	0	0	1
Total	8	40	85	50	2	0	185

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	0	2	0	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	3	0	2	0	0	0	5
ESE	1	0	0	2	0	0	3
SE	2	3	1	0	0	0	6
SSE	1	1	0	0	0	0	2
S	0	4	0	0	0	0	4
SSW	3	1	2	0	0	0	6
SW	1	5	2	0	0	0	8
WSW	1	0	1	3	0	0	5
W	2	1	1	4	0	0	8
WNW	1	0	3	3	0	0	7
NW	2	2	4	0	0	0	8
NNW	0	2	1	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	18	23	17	12	0	0	70

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	4	0	0	0	5
NNE	0	3	7	0	0	0	10
NE	0	10	10	0	0	0	20
ENE	0	7	0	0	0	0	7
E	0	3	2	0	0	0	5
ESE	0	5	2	0	0	0	7
SE	0	5	3	0	0	0	8
SSE	0	9	0	0	0	0	9
S	0	4	5	1	0	0	10
SSW	0	3	13	7	0	0	23
SW	0	0	2	3	0	0	5
WSW	0	0	13	5	1	0	19
W	2	1	9	7	2	0	21
WNW	2	3	11	2	0	0	18
NW	4	4	15	1	0	0	24
NNW	1	1	2	1	0	0	5
Variable	0	0	0	0	0	0	0
Total	10	58	98	27	3	0	196

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	2	0	0	0	5
NNE	0	7	8	0	0	0	15
NE	0	12	5	0	0	0	17
ENE	0	7	0	0	0	0	7
E	0	0	2	0	0	0	2
ESE	0	1	0	0	0	0	1
SE	0	3	2	0	0	0	5
SSE	0	3	0	0	0	0	3
S	0	3	4	2	0	0	9
SSW	0	3	3	4	0	0	10
SW	2	3	8	5	0	0	18
WSW	0	4	4	1	1	0	10
W	1	3	2	2	1	0	9
WNW	1	2	3	0	1	0	7
NW	1	1	4	0	0	0	6
NNW	1	1	3	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	6	56	50	14	3	0	129

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	0	0	0	0	4
NNE	1	2	7	0	0	0	10
NE	1	12	5	0	0	0	18
ENE	0	5	2	0	0	0	7
E	0	0	0	0	0	0	0
ESE	0	2	0	0	0	0	2
SE	0	3	3	0	0	0	6
SSE	0	8	2	0	0	0	10
S	0	1	1	1	0	0	3
SSW	0	3	4	2	1	0	10
SW	2	3	11	1	0	0	17
WSW	1	5	5	0	0	0	11
W	2	2	1	2	0	0	7
WNW	2	1	2	0	0	0	5
NW	2	0	2	0	0	0	4
NNW	1	5	1	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	12	56	46	6	1	0	121

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	8	13	1	0	0	0	22
NNE	15	41	27	12	0	0	95
NE	23	87	31	0	0	0	141
ENE	19	44	15	0	0	0	78
E	5	10	2	0	0	0	17
ESE	4	10	3	0	0	0	17
SE	2	16	5	0	0	0	23
SSE	1	22	16	1	0	0	40
S	3	13	19	12	0	0	47
SSW	4	13	27	17	6	0	67
SW	4	24	42	12	2	0	84
WSW	10	11	15	5	2	0	43
W	6	7	13	18	4	0	48
WNW	12	9	9	3	0	0	33
NW	4	13	3	0	0	0	20
NNW	6	11	4	0	0	0	21
Variable	3	0	0	0	0	0	3
Total	129	344	232	80	14	0	799

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 16
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	14	11	1	0	0	0	26
NNE	9	25	1	0	0	0	35
NE	8	22	1	0	0	0	31
ENE	23	29	1	0	0	0	53
E	14	21	0	0	0	0	35
ESE	14	14	2	0	0	0	30
SE	10	21	0	0	0	0	31
SSE	10	42	16	1	0	0	69
S	5	34	53	6	1	0	99
SSW	4	10	42	14	0	0	70
SW	4	22	34	2	0	0	62
WSW	2	15	12	1	1	0	31
W	10	6	4	2	0	0	22
WNW	7	10	6	1	1	0	25
NW	8	8	2	0	0	0	18
NNW	5	8	1	0	0	0	14
Variable	0	0	0	0	0	0	0
Total	147	298	176	27	3	0	651

Hours of calm in this stability class: 10
Hours of missing wind measurements in this stability class: 13
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	6	2	0	0	0	0	8
NNE	1	0	0	0	0	0	1
NE	1	1	0	0	0	0	2
ENE	11	2	0	0	0	0	13
E	8	1	0	0	0	0	9
ESE	13	4	0	0	0	0	17
SE	2	4	0	0	0	0	6
SSE	1	8	1	0	0	0	10
S	1	2	2	0	0	0	5
SSW	7	2	1	0	0	0	10
SW	2	2	0	0	0	0	4
WSW	4	7	0	0	0	0	11
W	20	2	0	0	0	0	22
WNW	7	1	0	0	0	0	8
NW	3	0	0	0	0	0	3
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	92	39	4	0	0	0	135

Hours of calm in this stability class: 24
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	0	0	0	0	0	2
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	2	1	0	0	0	0	3
ESE	2	1	0	0	0	0	3
SE	0	0	0	0	0	0	0
SSE	2	0	0	0	0	0	2
S	0	0	0	0	0	0	0
SSW	1	0	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	8	0	0	0	0	0	8
W	4	0	0	0	0	0	4
WNW	3	0	0	0	0	0	3
NW	7	0	0	0	0	0	7
NNW	2	0	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	36	2	0	0	0	0	38

Hours of calm in this stability class: 41
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	3	0	0	3
NNE	0	0	1	6	0	0	7
NE	0	4	4	12	0	0	20
ENE	0	1	5	0	0	0	6
E	0	3	5	0	1	0	9
ESE	0	4	1	1	2	0	8
SE	0	1	4	4	0	0	9
SSE	0	5	2	0	0	0	7
S	0	1	5	2	0	0	8
SSW	0	0	11	6	6	0	23
SW	0	0	2	1	5	0	8
WSW	0	0	3	7	1	1	12
W	0	1	3	9	8	5	26
WNW	0	0	5	7	7	2	21
NW	0	0	7	13	3	0	23
NNW	0	0	2	2	0	0	4
Variable	0	0	0	0	0	0	0
Total	0	20	60	73	33	8	194

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 5
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	2	0	0	0	5
NNE	0	2	7	3	0	0	12
NE	0	2	8	5	1	0	16
ENE	0	5	6	0	0	0	11
E	0	0	0	1	1	0	2
ESE	0	0	0	0	0	0	0
SE	0	3	1	2	0	0	6
SSE	0	2	1	0	0	0	3
S	0	2	2	1	2	0	7
SSW	0	0	5	2	3	0	10
SW	0	3	6	5	1	0	15
WSW	0	1	4	7	1	0	13
W	0	2	2	2	1	3	10
WNW	0	1	1	3	2	0	7
NW	0	1	2	3	2	0	8
NNW	0	1	1	1	0	0	3
Variable	0	0	0	0	0	0	0
Total	0	28	48	35	14	3	128

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	1	1	0	0	4
NNE	2	1	1	2	0	0	6
NE	0	2	11	7	0	0	20
ENE	0	2	4	1	0	0	7
E	0	3	0	0	0	0	3
ESE	0	2	0	0	0	0	2
SE	0	2	1	3	0	0	6
SSE	0	5	4	0	1	0	10
S	0	0	2	1	1	0	4
SSW	0	0	3	4	0	2	9
SW	0	0	6	3	1	0	10
WSW	1	1	9	6	0	0	17
W	0	3	2	1	1	1	8
WNW	0	1	1	2	0	0	4
NW	1	0	0	4	0	0	5
NNW	0	4	3	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	4	28	48	35	4	3	122

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	12	3	1	0	0	16
NNE	2	10	11	16	11	1	51
NE	3	29	81	35	0	0	148
ENE	2	34	48	24	1	0	109
E	1	15	13	6	1	0	36
ESE	0	5	4	8	1	0	18
SE	0	6	7	6	0	0	19
SSE	1	5	12	16	3	1	38
S	1	5	14	15	2	5	42
SSW	0	6	12	13	13	10	54
SW	1	10	33	31	11	7	93
WSW	3	10	18	8	4	1	44
W	0	7	5	11	14	17	54
WNW	3	8	12	9	8	1	41
NW	1	3	8	9	2	0	23
NNW	1	13	6	3	0	0	23
Variable	2	1	0	0	0	0	3
Total	21	179	287	211	71	43	812

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 6
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	16	4	0	0	22
NNE	2	4	18	7	0	0	31
NE	1	5	20	4	0	0	30
ENE	1	12	27	5	0	0	45
E	1	9	28	5	0	0	43
ESE	0	4	14	11	3	0	32
SE	0	5	18	5	0	0	28
SSE	0	6	17	24	4	0	51
S	0	4	29	40	22	4	99
SSW	0	4	10	37	16	3	70
SW	1	4	17	42	14	0	78
WSW	0	6	19	16	1	0	42
W	4	4	10	8	5	1	32
WNW	1	1	10	6	4	1	23
NW	0	7	8	6	1	1	23
NNW	0	2	9	4	0	0	15
Variable	0	0	0	0	0	0	0
Total	11	79	270	224	70	10	664

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 10
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	6	1	0	0	8
NNE	0	1	4	0	0	0	5
NE	0	1	1	0	0	0	2
ENE	1	4	4	1	0	0	10
E	2	1	4	1	0	0	8
ESE	0	0	7	3	0	0	10
SE	0	0	8	7	0	0	15
SSE	1	1	1	6	0	0	9
S	0	5	2	5	0	0	12
SSW	1	3	5	0	1	0	10
SW	1	1	3	2	0	0	7
WSW	0	1	3	0	0	0	4
W	1	4	7	3	0	0	15
WNW	0	2	12	2	0	0	16
NW	1	2	7	1	0	0	11
NNW	0	1	5	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	8	28	79	32	1	0	148

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 11
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	5	4	0	0	0	9
NNE	0	3	1	0	0	0	4
NE	0	2	5	0	0	0	7
ENE	0	0	0	0	0	0	0
E	0	2	1	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	2	1	0	0	0	3
SSE	0	2	3	0	0	0	5
S	0	2	0	0	0	0	2
SSW	1	3	0	0	0	0	4
SW	1	3	0	0	0	0	4
WSW	4	2	3	2	0	0	11
W	1	2	8	1	0	0	12
WNW	1	2	1	0	0	0	4
NW	0	0	2	0	0	0	2
NNW	0	2	5	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	8	33	34	3	0	0	78

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	1	0	0	0	3
NNE	0	1	0	1	0	0	2
NE	1	3	3	1	0	0	8
ENE	2	8	0	0	0	0	10
E	3	14	0	0	0	0	17
ESE	1	6	0	0	0	0	7
SE	3	5	0	0	0	0	8
SSE	6	12	5	0	0	0	23
S	3	10	19	2	0	0	34
SSW	2	7	13	3	0	0	25
SW	3	3	17	5	0	0	28
WSW	2	7	18	0	0	0	27
W	1	12	16	13	0	0	42
WNW	0	16	11	0	0	0	27
NW	2	11	5	0	0	0	18
NNW	1	8	8	0	0	0	17
Variable	0	0	0	0	0	0	0
Total	30	125	116	25	0	0	296

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	5	0	0	0	7
NNE	1	2	0	1	0	0	4
NE	5	12	2	1	0	0	20
ENE	3	5	0	0	0	0	8
E	3	6	0	0	0	0	9
ESE	6	3	0	0	0	0	9
SE	2	5	0	0	0	0	7
SSE	8	3	2	0	0	0	13
S	4	7	4	0	0	0	15
SSW	1	3	4	2	0	0	10
SW	0	2	0	1	0	0	3
WSW	3	13	4	0	0	0	20
W	2	6	2	1	0	0	11
WNW	1	5	5	0	0	0	11
NW	0	3	1	0	0	0	4
NNW	1	5	2	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	40	82	31	6	0	0	159

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	5	1	0	0	0	7
NNE	4	4	0	0	0	0	8
NE	8	4	2	0	0	0	14
ENE	1	4	0	0	0	0	5
E	3	5	0	0	0	0	8
ESE	1	4	0	0	0	0	5
SE	2	4	0	0	0	0	6
SSE	2	1	0	0	0	0	3
S	1	4	6	0	0	0	11
SSW	1	4	3	2	0	0	10
SW	0	5	4	2	0	0	11
WSW	0	7	1	1	0	0	9
W	1	8	2	0	0	0	11
WNW	0	1	0	0	0	0	1
NW	0	4	0	0	0	0	4
NNW	0	5	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	25	69	19	5	0	0	118

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	13	17	3	0	0	0	33
NNE	17	16	15	5	0	0	53
NE	26	17	4	1	0	0	48
ENE	27	11	1	0	0	0	39
E	13	10	0	0	0	0	23
ESE	8	8	0	0	0	0	16
SE	16	21	2	0	0	0	39
SSE	20	17	1	0	0	0	38
S	5	14	19	4	0	0	42
SSW	2	19	17	0	0	0	38
SW	2	18	18	5	0	0	43
WSW	2	15	10	1	0	0	28
W	7	16	4	0	0	0	27
WNW	6	4	4	0	0	0	14
NW	6	8	6	0	0	0	20
NNW	8	13	5	0	0	0	26
Variable	0	0	0	0	0	0	0
Total	178	224	109	16	0	0	527

Hours of calm in this stability class: 11
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	9	15	0	0	0	0	24
NNE	10	13	2	0	0	0	25
NE	11	9	0	0	0	0	20
ENE	47	18	1	0	0	0	66
E	45	4	0	0	0	0	49
ESE	25	8	0	0	0	0	33
SE	16	32	1	0	0	0	49
SSE	25	56	5	0	0	0	86
S	14	64	25	1	0	0	104
SSW	5	40	25	0	0	0	70
SW	5	30	16	0	0	0	51
WSW	9	30	1	0	0	0	40
W	14	11	2	0	0	0	27
WNW	17	7	0	0	0	0	24
NW	15	4	0	0	0	0	19
NNW	15	10	0	0	0	0	25
Variable	0	0	0	0	0	0	0
Total	282	351	78	1	0	0	712

Hours of calm in this stability class: 25
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	2	0	0	0	0	4
NNE	8	0	0	0	0	0	8
NE	6	0	0	0	0	0	6
ENE	16	0	0	0	0	0	16
E	28	0	0	0	0	0	28
ESE	14	4	0	0	0	0	18
SE	6	1	0	0	0	0	7
SSE	5	1	0	0	0	0	6
S	3	4	0	0	0	0	7
SSW	1	5	1	0	0	0	7
SW	2	0	0	0	0	0	2
WSW	11	13	0	0	0	0	24
W	21	9	0	0	0	0	30
WNW	13	0	0	0	0	0	13
NW	5	0	0	0	0	0	5
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	146	40	1	0	0	0	187

Hours of calm in this stability class: 25
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	0	0	0	0	0	3
NNE	3	0	0	0	0	0	3
NE	4	0	0	0	0	0	4
ENE	10	0	0	0	0	0	10
E	12	0	0	0	0	0	12
ESE	7	1	0	0	0	0	8
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	1	0	0	0	0	1
SSW	0	1	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	4	2	0	0	0	0	6
W	16	1	0	0	0	0	17
WNW	16	0	0	0	0	0	16
NW	6	0	0	0	0	0	6
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	82	6	0	0	0	0	88

Hours of calm in this stability class: 54
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	1	1	0	2	0	4
NE	0	2	1	2	0	0	5
ENE	0	5	2	0	0	0	7
E	0	8	13	0	0	0	21
ESE	1	5	3	0	0	0	9
SE	1	6	2	0	0	0	9
SSE	2	12	4	7	0	0	25
S	0	6	14	13	2	0	35
SSW	1	1	13	5	3	0	23
SW	0	3	11	7	4	0	25
WSW	0	5	15	7	0	0	27
W	0	6	15	8	12	0	41
WNW	0	4	17	9	1	0	31
NW	0	4	8	4	2	0	18
NNW	0	0	9	5	0	0	14
Variable	0	0	0	0	0	0	0
Total	5	68	129	67	26	0	295

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	6	0	0	0	6
NNE	0	0	1	0	1	0	2
NE	0	3	5	5	1	0	14
ENE	1	8	2	2	0	0	13
E	2	8	1	0	0	0	11
ESE	3	5	0	0	0	0	8
SE	1	7	0	0	0	0	8
SSE	1	3	2	2	0	0	8
S	2	5	7	5	2	0	21
SSW	1	2	3	2	0	0	8
SW	1	1	1	0	1	0	4
WSW	0	5	8	2	0	0	15
W	2	7	6	0	1	0	16
WNW	0	1	4	4	1	0	10
NW	0	1	4	1	0	0	6
NNW	1	1	4	1	0	0	7
Variable	0	0	0	0	0	0	0
Total	15	57	54	24	7	0	157

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	3	0	0	0	7
NNE	0	2	2	0	0	0	4
NE	0	7	3	2	0	0	12
ENE	0	7	3	0	0	0	10
E	2	7	1	0	0	0	10
ESE	2	3	1	0	0	0	6
SE	2	6	0	0	0	0	8
SSE	2	1	0	0	0	0	3
S	0	0	7	3	0	0	10
SSW	0	3	1	5	0	0	9
SW	0	6	3	2	1	0	12
WSW	0	4	2	2	1	0	9
W	1	2	5	1	0	0	9
WNW	1	1	1	0	0	0	3
NW	0	0	4	1	0	0	5
NNW	0	1	1	1	0	0	3
Variable	0	0	0	0	0	0	0
Total	10	54	37	17	2	0	120

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	10	19	3	0	0	34
NNE	3	11	8	11	9	0	42
NE	5	15	20	7	3	0	50
ENE	2	13	20	4	0	0	39
E	2	20	10	2	0	0	34
ESE	0	8	8	1	0	0	17
SE	0	10	22	4	0	0	36
SSE	1	7	25	3	0	0	36
S	1	8	15	21	5	0	50
SSW	0	2	19	11	0	0	32
SW	1	7	26	9	6	0	49
WSW	0	5	17	6	0	0	28
W	2	8	8	4	0	0	22
WNW	1	7	4	5	0	0	17
NW	2	8	4	8	1	0	23
NNW	1	11	9	3	0	0	24
Variable	0	0	0	0	0	0	0
Total	23	150	234	102	24	0	533

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 5
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	11	20	3	0	0	35
NNE	1	3	13	4	0	0	21
NE	2	4	18	6	0	0	30
ENE	0	24	19	0	0	0	43
E	0	23	23	3	0	0	49
ESE	1	8	19	1	0	0	29
SE	1	17	33	8	0	0	59
SSE	1	9	23	27	1	0	61
S	1	12	44	59	3	0	119
SSW	1	9	54	27	1	0	92
SW	1	5	43	16	0	0	65
WSW	0	9	17	4	0	0	30
W	3	10	19	4	0	0	36
WNW	3	9	9	3	0	0	24
NW	0	4	6	1	0	0	11
NNW	1	10	16	0	0	0	27
Variable	0	0	0	0	0	0	0
Total	17	167	376	166	5	0	731

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 6
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	2	1	0	0	4
NNE	0	1	2	0	0	0	3
NE	0	2	5	1	0	0	8
ENE	0	8	2	0	0	0	10
E	0	2	13	2	0	0	17
ESE	0	6	9	8	0	0	23
SE	0	6	7	1	0	0	14
SSE	2	4	5	0	0	0	11
S	1	5	4	0	0	0	10
SSW	0	5	7	2	0	0	14
SW	0	11	3	1	0	0	15
WSW	2	7	10	1	0	0	20
W	2	3	10	10	0	0	25
WNW	0	0	14	4	0	0	18
NW	0	3	6	0	0	0	9
NNW	3	5	3	0	0	0	11
Variable	0	0	0	0	0	0	0
Total	11	68	102	31	0	0	212

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	0	2	0	0	0	4
NNE	1	1	1	0	0	0	3
NE	1	1	0	0	0	0	2
ENE	3	0	0	0	0	0	3
E	3	1	6	1	0	0	11
ESE	3	2	2	6	0	0	13
SE	3	8	3	2	0	0	16
SSE	2	3	0	0	0	0	5
S	5	3	0	1	0	0	9
SSW	6	5	0	0	0	0	11
SW	2	7	1	0	0	0	10
WSW	3	5	1	0	0	0	9
W	1	3	7	3	0	0	14
WNW	2	3	10	0	0	0	15
NW	3	8	1	0	0	0	12
NNW	3	2	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	43	52	34	13	0	0	142

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	0	0	0	2
NNE	0	1	0	0	0	0	1
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	2	0	0	0	0	2
ESE	0	3	0	0	0	0	3
SE	0	1	1	0	0	0	2
SSE	0	0	1	0	0	0	1
S	0	1	2	2	0	0	5
SSW	0	3	3	5	2	0	13
SW	0	2	4	3	0	0	9
WSW	0	3	2	2	1	0	8
W	0	0	3	1	0	0	4
WNW	0	0	4	3	1	0	8
NW	0	6	9	0	0	0	15
NNW	0	1	5	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	24	36	16	4	0	80

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	1	0	0	1
NE	0	1	2	0	0	0	3
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	1	0	1	0	0	2
SSE	0	2	0	1	0	0	3
S	0	1	2	1	0	0	4
SSW	0	3	4	2	0	0	9
SW	0	0	5	2	0	0	7
WSW	0	1	0	1	1	0	3
W	0	1	4	3	0	0	8
WNW	1	1	7	3	1	0	13
NW	0	2	1	0	0	0	3
NNW	0	1	2	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	1	15	27	15	2	0	60

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	1	0	0	0	3
NNE	0	1	2	0	0	0	3
NE	0	4	3	2	0	0	9
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	1	1	0	0	0	0	2
SE	0	1	0	1	0	0	2
SSE	0	1	2	0	0	0	3
S	0	4	1	1	0	0	6
SSW	0	0	2	3	0	0	5
SW	0	1	3	0	0	0	4
WSW	0	5	3	0	0	0	8
W	0	0	1	6	1	0	8
WNW	0	3	1	0	0	0	4
NW	0	2	1	0	0	0	3
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	1	27	20	13	1	0	62

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	4	4	0	0	0	11
NNE	3	32	30	6	0	0	71
NE	2	34	36	12	0	0	84
ENE	2	17	13	1	0	0	33
E	2	19	5	0	0	0	26
ESE	1	10	4	0	0	0	15
SE	1	7	28	18	1	0	55
SSE	1	10	26	7	2	0	46
S	1	10	20	27	6	0	64
SSW	1	6	26	19	9	0	61
SW	0	14	35	10	3	0	62
WSW	1	13	34	17	5	1	71
W	4	26	37	18	5	0	90
WNW	2	21	24	9	2	0	58
NW	2	2	7	0	0	0	11
NNW	4	6	10	0	0	0	20
Variable	0	0	0	0	0	0	0
Total	30	231	339	144	33	1	778

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 9
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	6	11	0	0	0	19
NNE	0	24	9	0	0	0	33
NE	6	9	1	3	0	0	19
ENE	7	27	8	7	0	0	49
E	9	18	0	0	0	0	27
ESE	4	16	7	0	0	0	27
SE	9	23	30	7	0	0	69
SSE	2	57	33	10	0	0	102
S	4	49	88	45	1	0	187
SSW	0	12	43	18	4	0	77
SW	3	30	40	9	1	0	83
WSW	2	35	23	11	0	0	71
W	3	19	21	17	0	0	60
WNW	2	33	13	3	0	0	51
NW	4	5	1	0	0	0	10
NNW	3	15	0	0	0	0	18
Variable	0	0	0	0	0	0	0
Total	60	378	328	130	6	0	902

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 35
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	0	1	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	5	0	0	0	0	0	5
E	8	0	0	0	0	0	8
ESE	8	1	0	0	0	0	9
SE	2	2	0	0	0	0	4
SSE	2	5	0	0	0	0	7
S	3	2	0	0	0	0	5
SSW	0	5	10	0	0	0	15
SW	1	5	5	0	0	0	11
WSW	7	9	0	0	0	0	16
W	25	15	0	0	0	0	40
WNW	22	6	0	0	0	0	28
NW	8	0	0	0	0	0	8
NNW	3	0	0	0	0	0	3
Variable	1	0	0	0	0	0	1
Total	96	52	15	0	0	0	163

Hours of calm in this stability class: 4
Hours of missing wind measurements in this stability class: 4
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	1	0	0	0	0	0	1
NE	2	0	0	0	0	0	2
ENE	3	0	0	0	0	0	3
E	12	0	0	0	0	0	12
ESE	2	0	0	0	0	0	2
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	2	0	0	0	0	0	2
SSW	0	1	0	0	0	0	1
SW	0	3	0	0	0	0	3
WSW	4	4	0	0	0	0	8
W	10	5	0	0	0	0	15
WNW	7	0	0	0	0	0	7
NW	2	0	0	0	0	0	2
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	47	13	0	0	0	0	60

Hours of calm in this stability class: 21
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	2	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	3	0	0	0	3
ESE	0	0	2	0	0	0	2
SE	0	1	1	0	0	0	2
SSE	0	1	0	1	0	0	2
S	0	0	0	1	0	1	2
SSW	0	2	2	1	5	3	13
SW	0	0	2	5	1	0	8
WSW	0	0	3	3	0	0	6
W	0	0	1	2	0	0	3
WNW	0	0	1	4	2	3	10
NW	0	1	7	8	0	0	16
NNW	0	0	2	2	0	0	4
Variable	0	0	0	0	0	0	0
Total	0	7	25	27	8	7	74

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 6
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	1	0	1
NE	0	0	2	1	0	0	3
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	1	1	0	1	0	3
S	0	2	1	0	0	0	3
SSW	0	1	1	4	0	1	7
SW	0	0	1	3	1	0	5
WSW	0	0	2	0	2	0	4
W	0	0	1	3	1	0	5
WNW	1	1	0	5	4	2	13
NW	0	2	1	1	0	0	4
NNW	0	0	1	1	0	0	2
Variable	0	0	0	0	0	0	0
Total	1	9	11	18	10	3	52

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 8
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	2	1	0	0	4
NNE	0	0	0	0	1	0	1
NE	0	4	1	3	1	0	9
ENE	0	0	0	0	0	0	0
E	0	0	1	0	0	0	1
ESE	1	0	1	0	0	0	2
SE	0	1	1	0	0	0	2
SSE	0	0	0	2	0	0	2
S	0	4	1	1	0	0	6
SSW	0	1	1	1	2	1	6
SW	0	1	0	2	0	0	3
WSW	0	4	1	2	0	0	7
W	0	0	1	1	5	0	7
WNW	0	1	1	2	0	0	4
NW	0	1	1	1	0	0	3
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	1	19	12	16	9	1	58

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 4
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	5	7	1	1	0	15
NNE	0	22	25	25	12	0	84
NE	0	15	22	29	14	0	80
ENE	2	4	13	4	0	0	23
E	0	3	6	15	3	0	27
ESE	0	1	4	11	0	0	16
SE	0	4	5	12	3	2	26
SSE	0	2	9	13	8	2	34
S	0	2	11	12	16	18	59
SSW	1	4	5	22	13	6	51
SW	1	10	13	17	7	3	51
WSW	1	4	25	21	15	6	72
W	1	12	23	23	14	9	82
WNW	1	4	11	22	17	3	58
NW	3	1	4	5	4	0	17
NNW	1	2	2	9	3	0	17
Variable	0	0	0	0	0	0	0
Total	12	95	185	241	130	49	712

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 75
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	12	11	2	0	26
NNE	0	2	12	10	2	0	26
NE	0	3	8	11	5	0	27
ENE	1	12	30	5	0	0	48
E	0	3	15	13	0	0	31
ESE	0	3	6	20	2	0	31
SE	1	5	20	25	8	3	62
SSE	1	5	20	23	22	2	73
S	1	5	32	74	54	21	187
SSW	0	9	17	37	11	12	86
SW	0	8	23	27	6	2	66
WSW	1	4	24	15	9	0	53
W	1	2	11	26	17	5	62
WNW	0	0	29	19	9	1	58
NW	0	1	7	4	1	0	13
NNW	1	1	19	1	0	0	22
Variable	0	0	0	0	0	0	0
Total	7	64	285	321	148	46	871

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 66
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	1	1	0	0	2
NE	0	0	1	0	0	0	1
ENE	0	1	3	0	0	0	4
E	0	2	2	1	0	0	5
ESE	0	0	1	8	0	0	9
SE	0	0	0	1	0	0	1
SSE	0	3	1	0	0	0	4
S	1	3	6	3	0	0	13
SSW	0	3	4	1	0	0	8
SW	0	4	4	10	2	0	20
WSW	0	4	2	3	0	0	9
W	1	1	9	9	0	0	20
WNW	0	3	27	15	0	0	45
NW	0	3	17	1	0	0	21
NNW	0	4	1	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	2	31	79	53	2	0	167

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 4
Hours of missing stability measurements in all stability classes: 29

Braidwood Generating Station

Period of Record: October - December2015
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	3	0	0	0	0	4
NNE	1	5	0	0	0	0	6
NE	0	2	1	0	0	0	3
ENE	0	3	0	0	0	0	3
E	0	0	1	1	0	0	2
ESE	0	4	0	1	0	0	5
SE	0	0	4	0	0	0	4
SSE	1	7	1	0	0	0	9
S	0	1	0	0	0	0	1
SSW	2	0	0	0	0	0	2
SW	0	1	1	1	0	0	3
WSW	0	1	2	0	0	0	3
W	1	1	3	9	0	0	14
WNW	2	0	4	1	0	0	7
NW	1	3	3	0	0	0	7
NNW	3	2	1	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	12	33	21	13	0	0	79

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 29

APPENDIX G

ERRATA DATA

Intentionally left blank

2015 Errata Data

1. More accurate distances to the ISFSI pad were updated in the ODCM in 2015. The distances reported in the 2014 AREOR were incorrect.

    - BD-104-3, 0.11 mi E
    - BD-104-4, 0.13 mi E
    - BD-105-3, 0.23 mi SE
    - BD-105-4, 0.20 mi SE
    - BD-110-3, 0.18 mi SE
    - BD-110-4, 0.15 mi SE

2. Page B-3, ISFSI dosimeter locations and directions were updated with the following averaged distances and directions:

    - BD-104-3 and -4, 0.12 mi E
    - BD-105-3 and -4, 0.22 mi SE
    - BD-110-3 and -4, 0.17 mi SE

3. Page B-6, Figure B-1, Inner Ring and Other OSLD map, was updated to reflect the corrected distances that were included in the 2015 ODCM revision.

Intentionally left blank

APPENDIX H

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Intentionally left blank

Docket No: 50-456
50-457

BRAIDWOOD STATION
UNITS 1 and 2

Annual Radiological
Groundwater Protection Program Report

1 January through 31 December 2015

Prepared By

Teledyne Brown Engineering
Environmental Services

Braidwood Station
Braceville, IL 60407

May 2016

Intentionally left blank

Table Of Contents

Appendices

I. Summary and Conclusions

In 2015, Exelon continued a comprehensive program that evaluates the impact of station operations on groundwater and surface water in the vicinity of Braidwood Station. This evaluation involved numerous station personnel and contractor support personnel. This report covers groundwater and surface water samples collected from the environment, both on and off station property, in 2015. During that time period, 619 analyses were performed on 217 samples from 77 locations.

In assessing all the data gathered for this report, it was concluded that the operation of Braidwood Station had no adverse radiological impact on the environment.

Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective Lower Limits of Detection (LLDs) as specified in the Offsite Dose Calculation Manual (ODCM) in any of the groundwater or surface water samples. In the case of tritium, Exelon specified that its laboratories achieve a lower limit of detection 10 times less than Braidwood's ODCM and 100 times less than federal regulation.

Strontium-89/90 was not detected at a concentration greater than the LLD of 10.0 and 1.0 picoCuries per liter (pCi/L) respectively in any of the groundwater samples tested.

No tritium was detected in the groundwater or surface water samples at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L. Low levels of tritium were detected in groundwater and surface water at concentrations greater than the LLD of 200 pCi/L in 79 of 217 analyses. The tritium concentrations ranged from 186 ± 112 pCi/L to 3,200 ± 373 pCi/L. The tritium that was detected in the groundwater or surface water is believed to be the result of isolated historical releases and/or background from external sources greater than 200 pCi/L.

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater and surface water samples throughout the sampling year in 2015. Gross Alpha (dissolved) was not detected in any groundwater and surface water samples. Gross Alpha (suspended) was detected in two groundwater samples. The concentrations ranged from 1.3 to 3.0 pCi/L. Gross Beta (dissolved) was detected in 49 groundwater and surface water samples. The concentrations ranged from 1.7 to 47.1 pCi/L. Gross Beta (suspended) was detected in one groundwater sample. The concentration was 3.6 pCi/L.

Hard-To-Detect analyses were performed on one groundwater sample in 2015. The analyses included Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235 and U-238. Uranium-234 and Uranium-238 was detected in the sample at concentrations of 0.4 pCi/L and 0.5 pCi/L, respectively. All other

hard-to-detect nuclides were not detected at concentrations greater than their respective MDCs.

II. Introduction

Braidwood Station, a two-unit PWR station is located in Will County, Illinois, fifteen (15) miles south-southwest of Joliet, Illinois. Each reactor is designed to have a capacity of 3,587 thermal megawatts. Units No. 1 went critical on May 29, 1987 and Unit No. 2 went critical on March 8, 1988. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. Midwest Labs (EIML) on samples collected in 2015.

A. Objective of the Radiological Groundwater Protection Program (RGPP)

The long-term objectives of the RGPP are as follows:

1. Identify suitable locations to monitor and evaluate potential impacts from station operations to preclude radiological impact to the environment and potential drinking water sources.

2. Understand the local hydrogeologic regime in the vicinity of the station and maintain up-to-date knowledge of flow patterns on the surface and shallow subsurface.

3. Perform routine water sampling and radiological analysis of water from selected locations.

4. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.

5. Regularly assess analytical results to identify adverse trends.

6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at Braidwood Station as discussed below:

1. Exelon identified locations to monitor and evaluated potential impacts from station operations.

2. The Braidwood Station reports describe the local hydrogeologic regime. Periodically, the flow patterns on the surface and shallow subsurface are updated based on ongoing measurements.

3. Braidwood Station will continue to perform routine sampling and radiological analysis of water from selected locations.

4. Braidwood Station has implemented procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

5. Braidwood Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

1. Sample Collection

Sample locations can be found in Table A-1 and Figures A-1 through A-3, Appendix A.

Groundwater and Surface Water

Samples of groundwater and surface water are collected, managed, transported and analyzed in accordance with EPA methods. Sample locations, sample collection frequencies and analytical frequencies are managed in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management and shipment of samples as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, industry cross-check programs as well as nuclear industry audits. Station personnel review and evaluate all analytical data as it is received. Additionally, analytical data results are reviewed by an independent hydrogeologist for adverse trends or changes to hydrogeologic conditions.

D. Characteristics of Tritium (H-3)

Tritium is a radioactive isotope of hydrogen. Its chemical properties are the same as hydrogen. Tritiated water behaves the same as ordinary water in both the environment and the body. Tritiated water can be taken into the body by drinking water, breathing air, eating food or absorption through the skin. Once tritiated water enters the body, it disperses quickly and is uniformly distributed. Tritiated water is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. With such a short biological half-life, an acute ingestion would be cleared rapidly. Organically bound tritium (tritium that is incorporated into carbon containing compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays interact with air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity and in special production reactors. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface and therefore tritiated water will travel at the same velocity as non tritiated groundwater.

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by Teledyne Brown Engineering (TBE) and Environmental Incorporated Midwest Laboratory (EIML) to analyze the environmental samples for radioactivity for the Braidwood Station RGPP in 2015.

In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of gamma emitters in groundwater and surface water.

2. Concentrations of strontium in groundwater and surface water.

3. Concentrations of tritium in groundwater and surface water.

4. Concentrations of Gross Alpha and Gross Beta (Dissolved and Suspended) in groundwater and surface water.

5. Concentrations of Am-241 in groundwater.

6. Concentrations of Cm-242 and Cm-243/244 in groundwater.

7. Concentrations of Pu-238 and Pu-239/240 in groundwater.

8. Concentrations of U-234, U-235 and U-238 in groundwater.

9. Concentrations of Fe-55 in groundwater.

10. Concentrations of Ni-63 in groundwater.

B. Data Interpretation

The radiological data collected prior to Braidwood Station becoming

operational were used as a baseline with which these operational data were compared. For the purpose of this report, Braidwood Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

   The lower limit of detection (LLD) is specified by federal regulation as a minimum sensitivity value that must be achieved routinely by the analytical parameter.

2. Laboratory Measurements Uncertainty

   The estimated uncertainty in measurement of tritium in environmental samples is frequently on the order of 50% of the measurement value.

   Statistically, the exact value of a measurement is expressed as a range with a stated level of confidence. The convention is to report results with a 95% level of confidence. The uncertainty comes from calibration standards, sample volume or weight measurements, sampling uncertainty and other factors. Exelon reports the uncertainty of a measurement created by statistical process (counting error) as well as all sources of error (Total Propagated Uncertainty or TPU). Each result has two values calculated. Exelon reports the TPU by following the result with plus or minus (±) the estimated sample standard deviation, as TPU, that is obtained by propagating all sources of analytical uncertainty in measurements.

   Analytical uncertainties are reported at the 95% confidence level in this report for reporting consistency with the AREOR.

   Gamma spectroscopy results for each type of sample were grouped as follows:

   For groundwater and surface water 14 nuclides, Be-7, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, I-131, Cs-134, Cs-137, Ba-140 and La-140 were reported.

C. Background Analysis

A pre-operational radiological environmental monitoring program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the Station. The environmental media sampled and analyzed during the pre-operational REMP were

atmospheric radiation, fall-out, domestic water, surface water, marine life and foodstuffs. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for Braidwood Nuclear Power Station Commonwealth Edison Company, Annual Report 1986, May 1987.

1. Background Concentrations of Tritium

The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others.

a. Tritium Production

Tritium is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. In the upper atmosphere, “Cosmogenic” tritium is produced from the bombardment of stable nuclides and combines with oxygen to form tritiated water, which will then enter the hydrologic cycle. Below ground, “lithogenic” tritium is produced by the bombardment of natural lithium present in crystalline rocks by neutrons produced by the radioactive decay of naturally abundant uranium and thorium. Lithogenic production of tritium is usually negligible compared to other sources due to the limited abundance of lithium in rock. The lithogenic tritium is introduced directly to groundwater.

A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased significantly during the 1950s and early 1960s and later with additional testing, resulting in the release of significant amounts of tritium to the atmosphere. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment.

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provide tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA’s RadNet database. GNIP provides tritium precipitation concentration

data for samples collected world wide from 1960 to 2014. RadNet provides tritium precipitation concentration data for samples collected at stations through out the U.S. from 1960 up to and including 2015. Based on GNIP data for sample stations located in the U.S. Midwest, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of thermonuclear weapons. Tritium concentrations in surface water showed a sharp decline up until 1975 followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been below 100 pCi/L since around 1980. Tritium concentrations in wells may still be above the 200 pCi/L detection limit from the external causes described above. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

c. Surface Water Data

Tritium concentrations are routinely measured in large surface water bodies, including Lake Michigan and the Mississippi River. Illinois surface water data were typically less than 100 pCi/L.

The USEPA RadNet surface water data typically has a reported 'Combined Standard Uncertainty' of 35 to 50 pCi/L. According to USEPA, this corresponds to a ± 70 to 100 pCi/L 95% confidence bound on each given measurement. Therefore, the typical background data provided may be subject to measurement uncertainty of approximately ± 70 to 100 pCi/L.

The radio-analytical laboratory is counting tritium results to an Exelon specified LLD of 200 pCi/L. Typically, the lowest positive measurement will be reported within a range of 40 – 240 pCi/L or 140 ± 100 pCi/L. Clearly, these sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

A. Missed Sample

Exelon maintains a RGPP as part of the nuclear industry's

voluntary groundwater protection initiative as described in NEI 07-07. As part of this program, samples are obtained routinely from monitoring wells and surface waters at Braidwood based on the frequencies outlined in station procedures.

During the third quarter of 2015, it was discovered that five remediation monitoring wells (VB-1-9D, P-4D, VB-3-4D, P-13D, and VB-2-5D) were removed in 2013 from the Radiological Groundwater Protection Program (RGPP) prematurely prior to meeting the requirement of two consecutive samples measure <LLD (200 pCi/L) for tritium. After identifying this issue the previously abandoned wells were re-drilled so that samples could be obtained. The wells at these locations will remain until two consecutive <LLD measurements are obtained to support the closure of the consent order.

The following wells were missed during routine monitoring in 2015; MW-103 and 0WM31P. The Station RGPP requires the wells designated as detection wells to be sampled and analyzed for tritium on a quarterly basis. The aforementioned locations were not sampled during one or more of the quarters in 2015. Reasons for lack of sampling include well condition deficiencies (0WM31P) and inaccessibility due to damage and downed trees surrounding the well as a result of tornado activity (MW-103).

The Station RGPP also requires designated detection wells be analyzed for gamma-radionuclides, gross-alpha and beta, and strontium 89/90 on an annual basis. The well at MW-103 had these analyses performed during the third quarter of 2015 and not the second quarter of 2015 as scheduled due to well inaccessibility from the tornado activity mentioned above.

B. Groundwater Results

Groundwater

Samples were collected from on and off-site wells throughout the year in accordance with the Station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from all locations were analyzed for tritium activity. Tritium values ranged from the lower detection limit to 3,200 pCi/l The wells with tritium results greater than the alert level of 2000 pCi/L were identified at locations MW-4, MW-6 and MW-BW-144D along the west side of the Turbine Building. These wells are located onsite and are not available as a drinking water source. Some contamination still exists and monitoring is ongoing (Table B-I.1, Appendix B).

Strontium

Strontium-89 and Strontium-90 were analyzed for in 63 samples. Strontium-89 was less than the required detection limit of 10.0 pCi/liter. Strontium-90 was less than the required detection limit of 1.0 pCi/liter (Table B-I.1, Appendix B).

Gross Alpha and Beta (dissolved and suspended)

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater and surface water samples throughout the sampling year in 2015. Gross Alpha (dissolved) was not detected in any groundwater and surface water samples. Gross Alpha (suspended) was detected in two groundwater samples. The concentrations ranged from 1.3 to 3.0 pCi/L. Gross Beta (dissolved) was detected in 49 groundwater and surface water samples. The concentrations ranged from 1.7 to 47.1 pCi/L. Gross Beta (suspended) was detected in one groundwater sample. The concentration was 3.6 pCi/L. (Table B-I.1, Appendix B).

Hard-To-Detect

Hard-To-Detect analyses were performed on one groundwater sample in 2015 as a result of a positive gross alpha result. The analyses included Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235 and U-238. Naturally occurring isotopes Uranium-234 and Uranium-238 was detected in the sample at concentrations of 0.4 pCi/L and 0.5 pCi/L, respectively. All other hard-to-detect nuclides were not detected at concentrations greater than their respective MDCs. (Table B-I.3, Appendix B).

Gamma Emitters

Naturally occurring K-40 was detected in five samples. The

concentrations ranged from 51 to 154 pCi/L. No other gamma emitting nuclides were detected in any of the samples analyzed. (Table B–I.2, Appendix B)

C. Surface Water Results

Surface Water

Samples were collected from two surface water locations throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from all locations were analyzed for tritium activity (Table B-II.1, Appendix B). Tritium values ranged from the minimum detection limit to 289 pCi/l.

Strontium

Strontium-89 and Strontium-90 were analyzed for in one sample. Strontium-89 was less than the required detection limit of 10.0 pCi/liter. Strontium-90 was less than the required detection limit of 1.0 pCi/liter (Table B-II.1, Appendix B).

Gamma Emitters

No gamma emitting nuclides were detected in any of the samples analyzed (Table B–II.2, Appendix B).

D. Drinking Water Well Survey

Requested drinking water wells near Braidwood Station were sampled during the first and second quarter in 2015.

E. Summary of Results – Inter-Laboratory Comparison Program

Inter-Laboratory Comparison Program results for TBE are presented in the AREOR.

F. Leaks, Spills, and Releases

There are no new previously unidentified leaks or plumes at Braidwood Station.

G. Trends and Analyses

Monitoring of remediation activities indicate that tritium concentrations in affected areas have remained relatively unchanged since 2010.

H. Investigations

No investigations took place in 2015 as a result of groundwater sample results.

I. Actions Taken

1. Compensatory Actions

   No compensatory actions were initiated in 2015.

2. Installation of Monitoring Wells

   No new monitoring wells were installed in 2015.

3. Actions to Recover/Reverse Plumes

   No actions were undertaken to recover/reverse plumes in 2015.

4. Well Reduction Efforts

   Sampling and monitoring of various well locations was ceased during the third quarter 2015. These wells were used during and after remediation activities completed under the March 11, 2010 Consent Order. On March 28, 2013 the Illinois EPA confirmed that remediation was complete at the sites subject to the March 11, 2010 Consent Order within letters sent to Exelon. In these same letters the Illinois EPA approved termination of pumping in recovery wells, cessation of sampling of most of the monitoring wells and the abandonment of wells not being used at these remediation sites

APPENDIX A

LOCATION DESIGNATION

Intentionally left blank

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2015

Station Code	Sample Description
BL-03	Monitoring Well
BL-06	Monitoring Well
BL-06D	Monitoring Well
BL-09D	Monitoring Well
BL-10D	Monitoring Well
BL-11	Monitoring Well
BL-11D	Monitoring Well
BL-12D	Monitoring Well
BL-13D	Monitoring Well
BL-14D	Monitoring Well
BL-15D	Monitoring Well
BL-16D	Monitoring Well
BL-17D	Monitoring Well
BL-18D	Monitoring Well
BL-21	Monitoring Well
BL-22	Monitoring Well
BL-23	Monitoring Well
BL-24	Monitoring Well
BL-25	Monitoring Well
BL-26	Monitoring Well
BL-27	Monitoring Well
D-2D	Surface Water
D-3D	Surface water
DITCH (DS-2)	Surface Water
EXELON POND	Surface Water
F-1D	Monitoring Well
F-3D	Monitoring Well
F-3DR	Monitoring Well
F-4D	Monitoring Well
F-5D	Monitoring Well
F-6D	Monitoring Well
F-8D	Monitoring Well
F-9D	Monitoring Well
MW-102R	Monitoring Well
MW-103	Monitoring Well
MW-105	Monitoring Well
MW-105D	Monitoring Well
MW-106D	Monitoring Well
MW-107	Monitoring Well
MW-109D	Monitoring Well
MW-11	Monitoring Well
MW-110	Monitoring Well
MW-111	Monitoring Well
MW-111DR	Monitoring Well
MW-112D	Monitoring Well
MW-113	Monitoring Well
MW-113DR	Monitoring Well
MW-13	Monitoring Well
MW-130D	Monitoring Well
MW-131D	Monitoring Well
MW-132D	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2015

Station Code	Sample Description
MW-133D	Monitoring Well
MW-134D	Monitoring Well
MW-135D	Monitoring Well
MW-136D	Monitoring Well
MW-137D	Monitoring Well
MW-138D	Monitoring Well
MW-139D	Monitoring Well
MW-14	Monitoring Well
MW-140D	Monitoring Well
MW-141D	Monitoring Well
MW-142D	Monitoring Well
MW-143D	Monitoring Well
MW-144D	Monitoring Well
MW-145D	Monitoring Well
MW-154	Monitoring Well
MW-155	Monitoring Well
MW-156	Monitoring Well
MW-158D	Monitoring Well
MW-159D	Monitoring Well
MW-160D	Monitoring Well
MW-161D	Monitoring Well
MW-162D	Monitoring Well
MW-2	Monitoring Well
MW-22	Monitoring Well
MW-4	Monitoring Well
MW-5	Monitoring Well
MW-6	Monitoring Well
MW-7	Monitoring Well
MW-9	Monitoring Well
MW-BW-201BD	Monitoring Well
MW-BW-201I	Monitoring Well
MW-BW-201S	Monitoring Well
MW-BW-202I	Monitoring Well
MW-BW-202S	Monitoring Well
MW-BW-203I	Monitoring Well
MW-BW-203S	Monitoring Well
MW-BW-204I	Monitoring Well
MW-BW-205I	Monitoring Well
MW-BW-206I	Monitoring Well
MW-BW-207I	Monitoring Well
MW-BW-208BD	Monitoring Well
OWM31P	Monitoring Well
P-2D	Monitoring Well
P-4D	Monitoring Well
P-5D	Monitoring Well
P-13D	Monitoring Well
P-14D	Monitoring Well
RW-10	Monitoring Well
RW-5	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2015

Station Code	Sample Description
RW-6	Monitoring Well
RW-7	Monitoring Well
RW-8	Monitoring Well
RW-9	Monitoring Well
S-1D	Monitoring Well
S-2D	Monitoring Well
S-4	Monitoring Well
S-4D	Monitoring Well
S-5	Monitoring Well
S-6	Monitoring Well
S-7D	Monitoring Well
S-8	Monitoring Well
S-8DR	Monitoring Well
SG-BW-105	Surface Water
SG-BW-106	Surface Water
SW-101	Surface Water
SW-102 POINT C	Surface Water
SW-103	Surface Water
SW-104 A DITCH	Surface Water
TB-20	Monitoring Well
TB-20D	Monitoring Well
TB-21	Monitoring Well
TB-21D	Monitoring Well
TB-22	Monitoring Well
TB-22D	Monitoring Well
TB-23	Monitoring Well
TB-23D	Monitoring Well
TB-24	Monitoring Well
TB-24D	Monitoring Well
TB-25	Monitoring Well
TB-25D	Monitoring Well
TB-26D	Monitoring Well
VB10-1	Monitoring Well
VB10-1R	Monitoring Well
VB1-1	Monitoring Well
VB1-10	Monitoring Well
VB1-10D	Monitoring Well
VB11-1	Monitoring Well
VB1-11	Monitoring Well
VB1-11D	Monitoring Well
VB1-12D	Monitoring Well
VB1-2	Monitoring Well
VB1-2D	Monitoring Well
VB1-3	Monitoring Well
VB1-3D	Monitoring Well
VB1-4	Monitoring Well
VB1-4D	Monitoring Well
VB1-5	Monitoring Well
VB1-5D	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2015

Station Code	Sample Description
VB1-6	Monitoring Well
VB1-6D	Monitoring Well
VB1-7	Monitoring Well
VB1-7D	Monitoring Well
VB1-8	Monitoring Well
VB1-8D	Monitoring Well
VB1-9	Monitoring Well
VB1-9D	Monitoring Well
VB2-10	Monitoring Well
VB2-10D	Monitoring Well
VB2-11	Monitoring Well
VB2-11D	Monitoring Well
VB2-12	Monitoring Well
VB2-12D	Monitoring Well
VB2-13	Monitoring Well
VB2-13D	Monitoring Well
VB2-14	Monitoring Well
VB2-14D	Monitoring Well
VB2-15D	Monitoring Well
VB2-16	Monitoring Well
VB2-16D	Monitoring Well
VB2-17	Monitoring Well
VB2-17D	Monitoring Well
VB2-2D	Monitoring Well
VB2-5D	Monitoring Well
VB2-6D	Monitoring Well
VB2-7D	Monitoring Well
VB2-9D	Monitoring Well
VB3-10D	Monitoring Well
VB3-2	Monitoring Well
VB3-4D	Monitoring Well
VB3-7D	Monitoring Well
VB3-9D	Monitoring Well
VB4-1	Monitoring Well
VB4-5D	Monitoring Well
VB4-6D	Monitoring Well
VB5-2	Monitoring Well
VB6-1	Monitoring Well
VB7-1	Monitoring Well
VB8-2R	Monitoring Well
VB9-1	Monitoring Well

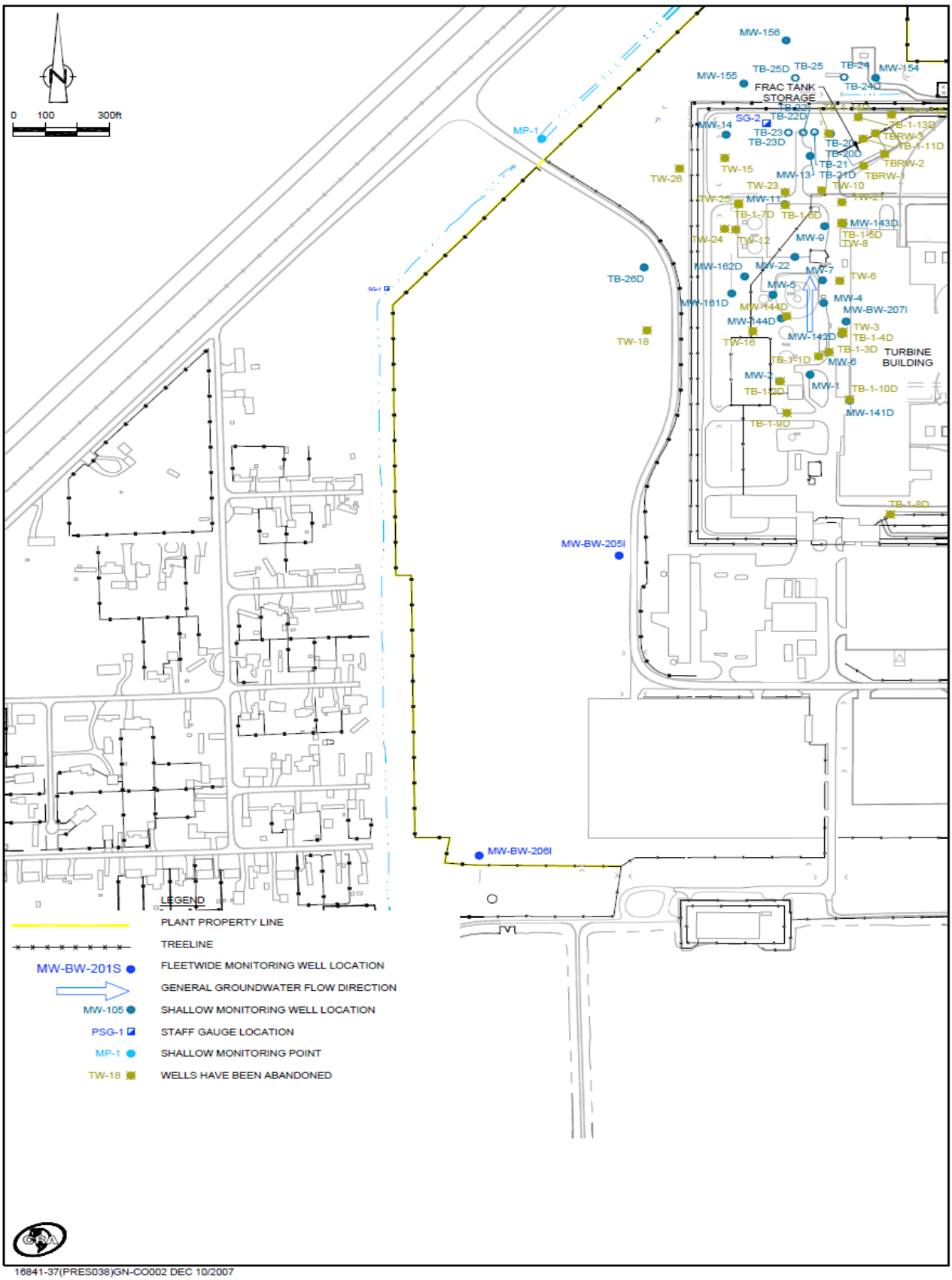


Figure A-1
Sampling Locations near the Site Boundary of Braidwood Station, 2015

Figure A-2
Sampling Locations near the Site Boundary of Braidwood Station, 2015

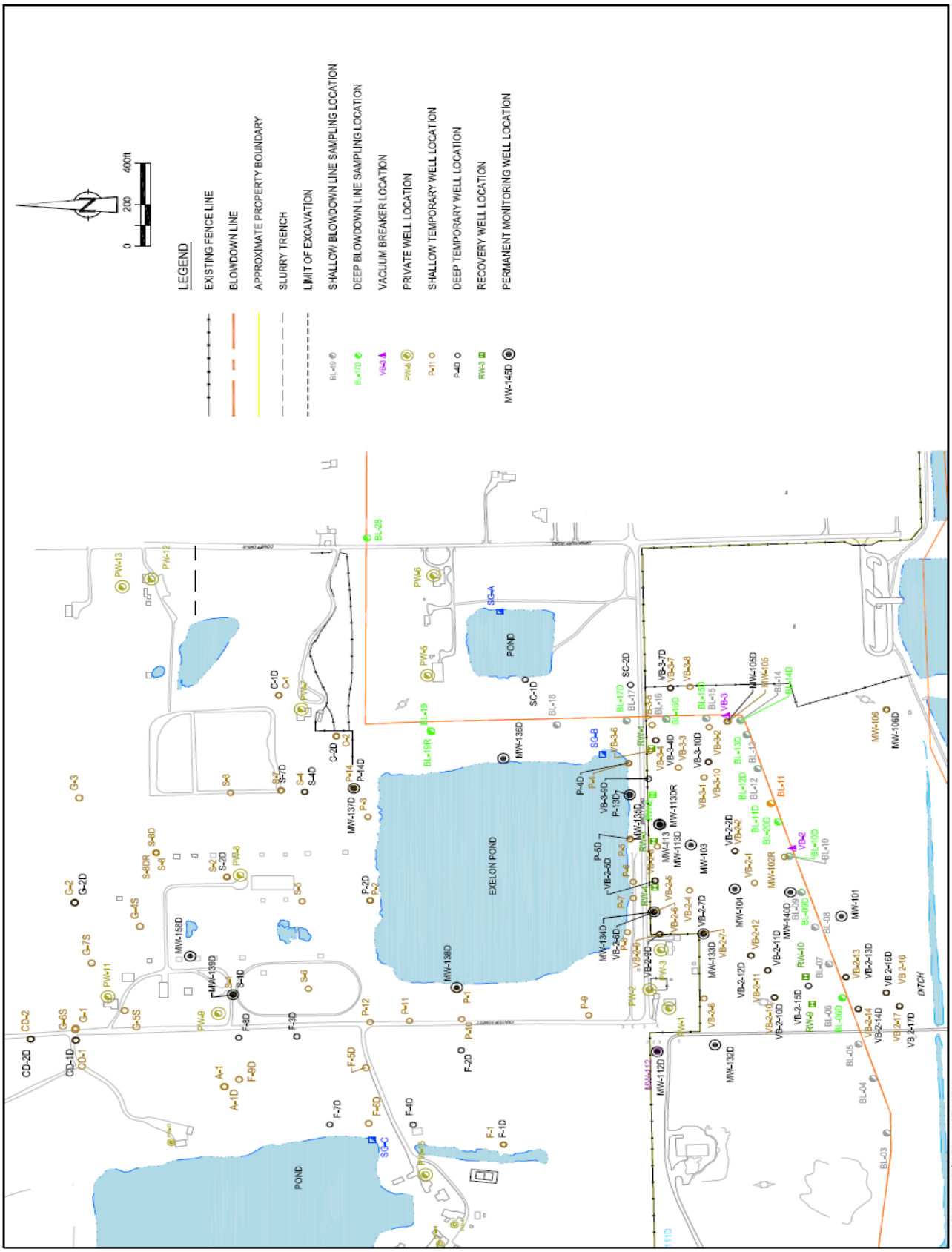


Figure A-3
Distant Sampling Locations of the Braidwood Station, 2015

Intentionally left blank

APPENDIX B

DATA TABLES

Intentionally left blank

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
BL-03	01/17/15		< 183						
BL-03	04/11/15		< 164						
BL-11	01/17/15		< 182						
BL-11	04/11/15		< 162						
DS-2	03/11/15		< 179						
DS-2	06/24/15		< 181	< 6.6	< 0.5	< 1.0	< 1.2	3.6 ± 1.0	< 2.2
DS-2	08/28/15		< 196						
DS-2	10/07/15		< 184						
F-1D	03/19/15		< 182						
F-1D	06/18/15		< 172						
F-3DR	03/19/15		< 178						
F-3DR	06/18/15		< 175						
F-4D	03/19/15		< 179						
F-4D	06/17/15		< 175						
F-5D	03/19/15		< 178						
F-5D	06/17/15		< 174						
F-6D	03/19/15		< 180						
F-6D	06/18/15		< 175						
F-8D	03/19/15		< 193						
F-8D	06/18/15		< 175						
F-9D	03/19/15		< 167						
F-9D	06/18/15		< 173						
MW-102R	01/17/15		< 180						
MW-102R	04/11/15		< 163						
MW-102R	08/28/15		< 197						
MW-102R	10/07/15		< 185						
MW-103	03/11/15		< 174						
MW-103	09/09/15	Original	< 196	< 6.7	< 0.8	< 1.1	3.0 ± 1.6	< 1.6	3.6 ± 1.8
MW-103	09/09/15	Reanalysis 1				< 1.1	2.6 ± 1.1		
MW-103	09/09/15	Reanalysis 2				< 1.1	4.0 ± 1.3		
MW-109D	03/11/15		< 175						
MW-109D	04/12/15		< 167	< 5.2	< 0.7	< 1.3	< 0.6	1.7 ± 0.9	< 1.4
MW-11	01/17/15		238 ± 127						
MW-11	04/05/15		310 ± 130	< 4.7	< 0.5	< 1.8	< 0.4	3.3 ± 1.0	< 1.3
MW-11	08/25/15		196 ± 128						
MW-11	10/18/15		< 200						
MW-111DR	03/11/15		< 172						
MW-111DR	05/06/15		< 195	< 5.2	< 0.9	< 1.0	1.3 ± 0.7	< 1.3	< 1.6
MW-112D	03/09/15		< 174						
MW-112D	05/06/15		< 184	< 4.7	< 0.7	< 1.5	< 0.4	3.0 ± 1.2	< 1.5
MW-113	03/09/15		< 177						
MW-113	06/24/15		< 182	< 6.8	< 0.8	< 2.1	< 0.6	2.5 ± 1.4	< 1.4
MW-130D	03/11/15		< 172						
MW-130D	04/12/15		< 161	< 5.1	< 0.7	< 1.3	< 0.6	2.0 ± 0.9	< 1.4
MW-131D	03/11/15		< 176						
MW-131D	04/12/15		< 176	< 5.3	< 0.6	< 1.5	< 0.7	3.9 ± 1.1	< 1.5
MW-134D	03/09/15		< 175						
MW-134D	05/06/15		< 184	< 5.5	< 0.7	< 0.6	< 0.4	1.8 ± 1.1	< 1.5
MW-135D	03/18/15		< 177	< 3.7	< 0.6	< 1.2	< 0.4	< 3.0	< 1.7
MW-135D	06/17/15		< 173	< 5.6	< 0.7	< 1.4	< 0.5	2.2 ± 1.0	< 1.7
MW-136D	03/18/15		< 174	< 4.5	< 0.7	< 2.7	< 0.4	3.9 ± 2.4	< 1.7

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
MW-136D	06/18/15		< 175	< 6.4	< 0.6	< 2.2	< 1.2	3.3 ± 1.6	< 2.5
MW-137D	03/18/15		< 176	< 3.3	< 0.6	< 1.0	< 0.4	2.7 ± 1.0	< 1.7
MW-137D	06/17/15		< 175	< 5.4	< 0.5	< 1.3	< 0.5	3.1 ± 0.9	< 1.7
MW-138D	03/18/15		< 173	< 3.5	< 0.5	< 2.1	< 0.4	3.0 ± 1.2	< 1.7
MW-138D	06/17/15		< 169	< 5.5	< 0.5	< 1.8	< 0.5	3.0 ± 1.2	< 1.7
MW-139D	03/18/15		< 174	< 6.5	< 0.8	< 1.2	< 0.4	19.8 ± 1.4	< 1.7
MW-139D	06/18/15		< 176	< 4.5	< 0.7	< 1.0	< 0.5	22.6 ± 1.5	< 1.7
MW-141D	02/07/15		707 ± 150						
MW-141D	03/18/15		692 ± 147						
MW-141D	04/19/15		631 ± 148	< 7.7	< 0.7	< 4.2	< 0.6	47.1 ± 2.8	< 1.5
MW-141D	08/25/15		342 ± 139						
MW-141D	10/11/15		444 ± 136						
MW-142D	02/07/15		1450 ± 207						
MW-142D	04/19/15		938 ± 160	< 5.3	< 0.5	< 5.5	< 0.6	25.7 ± 2.8	< 1.5
MW-142D	08/24/15		1180 ± 184						
MW-142D	10/18/15	Original	1500 ± 215						
MW-142D	10/18/15	Reanalysis	1700 ± 232						
MW-143D	03/18/15		232 ± 122						
MW-143D	04/05/15		< 169	< 5.9	< 0.6	< 3.7	< 0.4	6.8 ± 1.5	< 1.3
MW-143D	08/27/15		288 ± 137						
MW-143D	10/17/15		< 190						
MW-144D	01/17/15		1290 ± 185						
MW-144D	04/22/15	Original	1130 ± 175	< 6.3	< 0.8	< 5.3	< 0.6	12.3 ± 1.8	< 1.5
MW-144D	04/22/15	Recount						12.1 ± 2.5	
MW-144D	08/26/15	Original	2010 ± 266						
MW-144D	08/26/15	Reanalysis	2290 ± 286						
MW-144D	10/11/15	Original	2020 ± 262						
MW-144D	10/11/15	Reanalysis	2040 ± 262						
MW-145D	03/19/15		< 172	< 3.2	< 0.5	< 0.8	< 0.4	< 1.2	< 1.7
MW-145D	06/18/15		< 176	< 5.3	< 0.6	< 0.9	< 0.5	< 1.4	< 1.7
MW-145D	09/23/15		< 185						
MW-145D	12/09/15		< 189						
MW-154	03/12/15		289 ± 128	< 8.7	< 0.7	< 0.8	< 0.6	2.9 ± 0.7	< 1.5
MW-154	05/07/15		334 ± 133	< 5.5	< 0.9	< 0.6	< 0.6	2.1 ± 0.7	< 1.5
MW-154	08/26/15		< 195	< 3.1	< 0.6	< 0.6	< 0.8	2.6 ± 0.7	< 1.6
MW-154	10/25/15		< 192	< 7.4	< 0.7	< 0.8	< 0.6	2.3 ± 0.7	< 1.6
MW-155	03/12/15		260 ± 126	< 8.3	< 0.7	< 1.0	< 0.6	1.7 ± 0.7	< 1.5
MW-155	05/07/15		227 ± 128	< 6.0	< 0.8	< 0.9	< 0.7	2.6 ± 0.8	< 1.7
MW-155	08/27/15		< 195	< 6.5	< 0.7	< 1.1	< 0.8	3.0 ± 1.2	< 1.6
MW-155	10/25/15		< 190	< 6.1	< 0.8	< 1.3	< 0.6	3.5 ± 1.0	< 1.6
MW-158D	03/18/15		< 173	< 5.3	< 0.6	< 0.9	< 0.4	39.4 ± 3.7	< 1.7
MW-158D	06/18/15		< 174	< 5.2	< 0.6	< 1.0	< 0.5	43.1 ± 1.9	< 1.7
MW-159D	01/17/15		390 ± 137	< 3.5	< 1.0	< 1.9	< 1.2	6.7 ± 1.3	< 2.3
MW-159D	04/12/15		186 ± 112	< 5.4	< 0.7	< 3.9	< 0.6	6.5 ± 1.4	< 1.4
MW-159D	08/24/15		266 ± 136	< 3.5	< 0.8	< 1.6	< 0.8	6.1 ± 1.4	< 1.6
MW-159D	10/18/15		< 199	< 6.5	< 0.9	< 1.6	< 0.7	4.0 ± 1.1	< 2.2
MW-162D	01/17/15		784 ± 159						
MW-162D	04/05/15		761 ± 149	< 6.2	< 0.6	< 1.9	< 0.4	5.5 ± 1.1	< 1.3
MW-162D	08/24/15		591 ± 151						
MW-162D	10/18/15		610 ± 153						
MW-2	03/18/15	Original	800 ± 153						

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
MW-2	03/18/15	Recount	878 ± 160						
MW-2	03/18/15	Reanalysis	1060 ± 167						
MW-2	05/07/15		682 ± 152	< 4.6	< 0.8	< 1.3	< 0.6	4.5 ± 2.1	< 1.5
MW-2	09/09/15		370 ± 141						
MW-2	10/11/15		375 ± 132						
MW-4	01/17/15		1460 ± 198						
MW-4	04/18/15	Original	3200 ± 373	< 8.0	< 0.7	< 8.0	< 0.4	< 5.3	< 1.4
MW-4	04/18/15	Recount	3240 ± 370						
MW-4	08/25/15		1290 ± 199						
MW-4	10/22/15		1300 ± 197						
MW-5	01/17/15		383 ± 135						
MW-5	03/18/15	Original	734 ± 149						
MW-5	03/18/15	Recount	880 ± 159						
MW-5	03/18/15	Reanalysis	829 ± 156						
MW-5	04/05/15		702 ± 150	< 7.0	< 0.8	< 1.4	< 0.4	< 1.1	< 1.3
MW-5	08/26/15		302 ± 136						
MW-5	10/11/15		435 ± 136						
MW-6	02/07/15		2190 ± 276						
MW-6	04/18/15	Original	1020 ± 166	< 7.2	< 1.0	< 7.7	< 0.3	11.6 ± 6.1	< 1.4
MW-6	04/18/15	Recount	1060 ± 165						
MW-6	08/25/15		895 ± 163						
MW-6	10/03/15		914 ± 164						
MW-7	03/18/15	Original	973 ± 163						
MW-7	03/18/15	Recount	1330 ± 185						
MW-7	03/18/15	Reanalysis	1220 ± 176						
MW-7	04/18/15		743 ± 159	< 9.3	< 0.8	< 1.4	< 0.3	2.1 ± 1.2	< 1.4
MW-7	08/25/15		788 ± 158						
MW-7	10/22/15		1160 ± 184						
MW-BW-201S	01/17/15		393 ± 137						
MW-BW-201S	04/10/15		447 ± 129	< 6.1	< 0.9	< 1.3	< 0.6	8.4 ± 1.4	< 1.4
MW-BW-201S	09/18/15		425 ± 141						
MW-BW-201S	10/17/15		215 ± 127						
MW-BW-202S	03/13/15		464 ± 137						
MW-BW-202S	04/10/15		295 ± 119	< 4.9	< 0.7	< 4.3	< 0.6	10.0 ± 1.9	< 1.4
MW-BW-202S	08/24/15		271 ± 137						
MW-BW-202S	10/17/15		396 ± 136						
MW-BW-203S	03/13/15		202 ± 117						
MW-BW-203S	04/10/15		196 ± 112	< 4.5	< 1.0	< 1.1	< 0.6	7.6 ± 1.2	< 1.4
MW-BW-203S	08/24/15		< 194						
MW-BW-203S	10/17/15		236 ± 128						
MW-BW-207I	02/07/15		1040 ± 173						
MW-BW-207I	05/07/15		1050 ± 171	< 4.6	< 0.6	< 7.3	< 0.6	15.7 ± 5.3	< 1.5
MW-BW-207I	08/25/15		995 ± 172						
MW-BW-207I	10/11/15		1090 ± 176						
MW-P2D	06/17/15		< 172						
OWM31P	12/31/15		< 193						
P-13DR	08/20/15	Original	261 ± 134						
P-13DR	08/20/15	Recount	412 ± 117						
P-13DR	08/20/15	Reanalysis	256 ± 123						
P-13DR	12/09/15		< 190						
P-2D	03/18/15		< 175						

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
P-4DR	08/20/15		< 192						
P-4DR	09/23/15		< 190						
P-4DR	12/09/15		< 184						
PW-006	01/20/15		< 172						
PW-006	04/08/15		< 174						
PW-006P	01/20/15		< 173						
PW-006P	04/08/15		< 174						
PW-011	01/20/15		< 171						
PW-011	04/08/15		< 178						
PW-016	01/20/15		< 169						
PW-016	04/08/15		< 173						
PW-13	01/20/15		< 169						
PW-13	04/08/15		< 174						
RW-10	03/25/15		< 175						
RW-10	05/06/15		< 181	< 5.0	< 0.7	< 1.0	< 0.4	2.7 ± 0.9	< 1.5
RW-5	03/12/15	Original	198 ± 123						
RW-5	03/12/15	Recount	263 ± 126						
RW-5	06/24/15		< 182	< 6.1	< 0.6	< 2.7	< 0.6	3.0 ± 1.8	< 1.4
RW-6	03/11/15		1420 ± 194						
RW-6	04/12/15		1110 ± 161	< 5.7	< 0.8	< 1.9	< 0.6	5.5 ± 1.3	< 1.4
RW-6	08/28/15		578 ± 149						
RW-6	08/28/15		420 ± 142						
RW-6	10/07/15		513 ± 143						
RW-7	03/11/15	Original	469 ± 135						
RW-7	03/11/15	Recount	450 ± 138						
RW-7	04/12/15		424 ± 128	< 5.1	< 0.6	< 1.5	< 0.7	4.2 ± 1.0	< 2.0
RW-9	01/17/15		< 182						
RW-9	04/11/15		< 161	< 5.2	< 0.7	< 1.1	< 0.4	3.7 ± 1.0	< 1.5
SG-BW-102	08/28/15		< 197						
SG-BW-102	10/07/15		188 ± 125						
VB-1	06/24/15		< 187						
VB-1-9DR	08/20/15	Original	275 ± 138						
VB-1-9DR	08/20/15	Recount	418 ± 120						
VB-1-9DR	08/20/15	Reanalysis	277 ± 124						
VB-1-9DR	09/22/15		< 193						
VB-1-9DR	12/09/15		< 188						
VB-10-1R	03/17/15		< 179						
VB-10-1R	06/16/15		< 185						
VB-10-1R	09/22/15		< 192						
VB-10-1R	12/08/15		< 186						
VB-11-1	03/18/15		< 176						
VB-11-1	06/17/15		< 172						
VB-11-1	09/23/15		< 188						
VB-11-1	12/09/15		< 185						
VB-2-5DR	08/20/15		< 192						
VB-2-5DR	09/23/15		< 190						
VB-2-5DR	12/09/15	Original	191 ± 124						
VB-2-5DR	12/09/15	Recount	245 ± 132						
VB-2-5DR	12/09/15	Reanalysis	250 ± 131						
VB-3-4DR	08/20/15		< 194						
VB-3-4DR	09/23/15		< 188						

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
VB-3-4DR	12/09/15	< 183						
VB-4-1	03/17/15	< 178						
VB-4-1	06/16/15	< 169						
VB-5-2	03/18/15	< 174						
VB-5-2	06/16/15	< 186						
VB-5-2	09/23/15	< 189						
VB-5-2	12/09/15	< 185						
VB-6-1	03/17/15	< 177						
VB-6-1	06/16/15	< 175						
VB-6-1	09/22/15	< 190						
VB-6-1	12/08/15	< 188						
VB-7-1	03/17/15	< 178						
VB-7-1	06/16/15	< 167						
VB-7-1	09/22/15	< 187						
VB-7-1	12/08/15	< 187						
VB-8-2R	03/17/15	< 179						
VB-8-2R	06/16/15	< 172						
VB-8-2R	09/22/15	< 188						
VB-8-2R	12/08/15	< 189						
VB-9-1	03/17/15	< 174						
VB-9-1	06/16/15	< 183						
VB-9-1	09/22/15	< 188						
VB-9-1	12/08/15	< 189						
VB-P-13DR	09/22/15	< 188						
VB1-1	08/27/15	< 198						
VB1-1	10/25/15	< 192						
VB3-2	01/17/15	< 180						
VB3-2	04/11/15	< 163						
VB3-2	08/28/15	< 195						
VB3-2	10/07/15	< 187						
VBI-1	03/25/15	< 185						

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
DS-2	06/24/15	< 20	< 18	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 24	< 10
MW-103	09/09/15	< 20	< 54	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 21	< 7
MW-109D	04/12/15	< 14	< 13	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 15	< 4
MW-11	04/05/15	< 18	< 17	< 2	< 2	< 4	< 2	< 3	< 3	< 4	< 13	< 2	< 2	< 22	< 8
MW-111DR	05/06/15	< 14	< 10	< 1	< 1	< 3	< 1	< 3	< 2	< 2	< 13	< 1	< 1	< 19	< 5
MW-112D	05/06/15	< 14	< 31	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 19	< 7
MW-113	06/24/15	< 14	< 21	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 16	< 5
MW-130D	04/12/15	< 11	< 11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 7	< 1	< 1	< 12	< 4
MW-131D	04/12/15	< 15	< 15	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 8	< 1	< 2	< 15	< 5
MW-134D	05/06/15	< 14	< 11	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 19	< 7
MW-135D	03/18/15	< 8	< 6	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 7	< 1	< 1	< 10	< 3
MW-135D	06/17/15	< 55	100 ± 58	< 5	< 5	< 10	< 7	< 10	< 7	< 12	< 12	< 5	< 6	< 25	< 7
MW-136D	03/18/15	< 14	< 24	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 5
MW-136D	06/18/15	< 63	< 114	< 6	< 6	< 11	< 7	< 12	< 7	< 11	< 12	< 6	< 8	< 35	< 11
MW-137D	03/18/15	< 10	< 24	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 13	< 3
MW-137D	06/17/15	< 49	< 117	< 8	< 6	< 15	< 6	< 15	< 7	< 11	< 12	< 6	< 6	< 38	< 11
MW-138D	03/18/15	< 11	< 24	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 14	< 5
MW-138D	06/17/15	< 51	< 107	< 5	< 5	< 12	< 6	< 9	< 5	< 10	< 12	< 5	< 4	< 29	< 8
MW-139D	03/18/15	< 9	< 23	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 12	< 4
MW-139D	06/18/15	< 61	< 58	< 6	< 8	< 13	< 7	< 14	< 9	< 12	< 12	< 6	< 9	< 35	< 12
MW-141D	04/19/15	< 20	51 ± 27	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 7
MW-142D	04/19/15	< 18	< 14	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 13	< 2	< 2	< 20	< 5
MW-143D	04/05/15	< 16	< 13	< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 12	< 1	< 1	< 19	< 5
MW-144D	04/22/15	< 25	< 21	< 2	< 2	< 5	< 2	< 5	< 3	< 5	< 13	< 2	< 2	< 25	< 8
MW-145D	03/19/15	< 11	< 25	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 12	< 4
MW-145D	06/18/15	< 44	< 56	< 5	< 5	< 11	< 6	< 10	< 5	< 9	< 8	< 4	< 5	< 24	< 7
MW-154	03/12/15	< 9	< 7	< 1	< 1	< 3	< 1	< 2	< 1	< 2	**< 16**	< 1	< 1	< 18	< 6
MW-154	05/07/15	< 15	< 10	< 1	< 1	< 4	< 1	< 2	< 1	< 3	< 15	< 1	< 1	< 21	< 5
MW-154	08/26/15	< 16	< 34	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 7
MW-154	10/25/15	< 13	< 14	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 6	< 1	< 1	< 11	< 4
MW-155	03/12/15	< 6	< 5	< 1	< 1	< 1	< 0	< 1	< 1	< 1	< 10	< 1	< 1	< 12	< 3
MW-155	05/07/15	< 16	< 42	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 22	< 6

BOLDED VALUES INDICATE LLD COULD NOT BE MET DUE TO AGE OF SAMPLE AT TIME OF RECEIPT AT LABORATORY

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MW-155	08/27/15	< 18	< 13	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 2	< 2	< 22	< 5
MW-155	10/25/15	< 13	< 11	< 1	< 1	< 3	< 1	< 3	< 1	< 2	< 6	< 1	< 1	< 11	< 4
MW-158D	03/18/15	< 12	< 11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 16	< 5
MW-158D	06/18/15	< 59	128 ± 63	< 7	< 7	< 14	< 7	< 13	< 7	< 12	< 13	< 7	< 7	< 30	< 11
MW-159D	01/17/15	< 22	< 21	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 9	< 2	< 2	< 18	< 6
MW-159D	04/12/15	< 17	< 13	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 13	< 1	< 2	< 19	< 5
MW-159D	08/24/15	< 14	< 21	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 14	< 1	< 1	< 19	< 5
MW-159D	10/18/15	< 59	< 122	< 6	< 8	< 13	< 4	< 11	< 8	< 10	< 15	< 5	< 7	< 38	< 11
MW-162D	04/05/15	< 17	< 49	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 12	< 1	< 2	< 20	< 5
MW-2	05/07/15	< 14	< 26	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 14	< 1	< 1	< 21	< 6
MW-4	04/18/15	< 17	< 42	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 13	< 1	< 2	< 19	< 6
MW-5	04/05/15	< 19	< 32	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 21	< 6
MW-6	04/18/15	< 20	< 17	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 21	< 7
MW-7	04/18/15	< 16	< 29	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 6
MW-BW-201S	04/10/15	< 9	< 8	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 7	< 1	< 1	< 11	< 3
MW-BW-202S	04/10/15	< 13	< 8	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 15	< 3
MW-BW-203S	04/10/15	< 14	154 ± 27	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 17	< 7
MW-BW-207I	05/07/15	< 14	< 11	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 15	< 1	< 1	< 18	< 7
MW-P2D	06/17/15	< 49	< 75	< 7	< 6	< 11	< 5	< 10	< 7	< 10	< 11	< 5	< 6	< 28	< 8
P-2D	03/18/15	< 13	< 8	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 18	< 4
RW-10	05/06/15	< 10	62 ± 32	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 13	< 1	< 1	< 17	< 5
RW-5	06/24/15	< 17	< 30	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 2	< 20	< 6
RW-6	04/12/15	< 15	< 16	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 6
RW-7	04/12/15	< 16	< 14	< 1	< 2	< 3	< 2	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 5
RW-9	04/11/15	< 14	< 42	< 1	< 2	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 16	< 5

BOLDED VALUES INDICATE LLD COULD NOT BE MET DUE TO AGE OF SAMPLE AT TIME OF RECEIPT AT LABORATORY

TABLE B-I.3 CONCENTRATIONS OF HARD TO DETECTS IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, BRAIDWOOD STATION, 2015

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Am-241	Cm-242	Cm-243/244	Pu-238	Pu-239/240	U-234	U-235	U-238	Fe-55	Ni-63
MW-103	09/09/15	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	0.4 ± 0.3	< 0.1	0.5 ± 0.3		

TABLE B-II.1 **CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	Sr-89	Sr-90	Gr-A (Dis)	Gr-A (Sus)	Gr-B (Dis)	Gr-B (Sus)
SW-05	01/20/15		< 173						
SW-05	04/08/15	Original	< 170						
SW-05	04/08/15	Recount	< 186						
SW-102	03/11/15		289 ± 128						
SW-102	04/11/15		175 ± 112	< 4.4	< 0.7	< 1.3	< 0.8	4.6 ± 1.0	< 1.9

TABLE B-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2015**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-102	04/11/15	< 14	< 24	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 16	< 5