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BRAIDWOOD STATION
UNITS 1 and 2

Annual Radiological
Environmental Operating Report

1 January through 31 December 2009

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear
Braidwood Station
Braceville, IL 60407

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Braidwood Station by Exelon covers the period 1 January 2009 through 31 December 2009. During that time period, 1,546 analyses were performed on 1327 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. No fission or activation products were detected. Gross beta and tritium activities detected were consistent with those detected in previous years.

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. One sediment sample had Cesium-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 activity.

Cow milk samples were analyzed for concentrations of I-131 and gamma emitting nuclides. All I-131 results were below the minimum detectable activity. Concentrations of naturally occurring K-40 were detected. No fission or activation products were found.

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 thermoluminescent dosimeters. Levels detected were consistent with those observed in previous years.

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II. Introduction

The Braidwood Station, consisting of two 3587 MWt pressurized water reactors owned and operated by Exelon Corporation, is located in Will County, Illinois. Unit No. 1 went critical on 29 May 1987. Unit No. 2 went critical on 08 March 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), Global Dosimetry, and Environmental Inc. (Midwest Labs) on samples collected during the period 1 January 2009 through 31 December 2009.

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 2009. Sample locations and descriptions can be found in Table B–1 and Figures B–1 through B–3, Appendix B. The collection procedures 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 sample of public drinking water location (BD-22) and ground/well water samples collected quarterly from eight locations (BD-13, BD-34, BD-35, BD-36, BD-37, BD-51, BD-53 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 bluegill, largemouth bass, smallmouth bass, golden redhorse, channel catfish and 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 two locations semiannually, BD-10 and BD-57.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate, airborne iodine, and milk. 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.

Milk samples were collected biweekly at two locations (BD-17 and BD-18) from May through October, and monthly from November through April. The control location was BD-18. 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. Various types of samples were collected and placed in new unused plastic bags, and sent to the laboratory for analysis.

Ambient Gamma Radiation

Direct radiation measurements were made using dual calcium fluoride and lithium flouride thermoluminescent dosimeters (TLD). Each location consisted of 2 TLD sets. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis. The TLDs were placed at locations on and around the Braidwood Station site as follows:

An inner ring (site boundary) 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 (intermediate distance) 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, 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 TLD 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, 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 2009. 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 and milk.

5. 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. Lower Limit of Detection and Minimum Detectable Concentration

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 minimum detectable concentration (MDC) is defined above with the exception that the measurement is an after the fact estimate of the presence of activity.

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 effecting 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, public, 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 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 single analysis uncertainty.

D. Program Exceptions

For 2009 the Braidwood Station REMP had a sample recovery rate in excess of 99%. 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
A/I	BD-19	03/12/09	No apparent reason for low timer reading of 141.2 hours: possible power outage.
A/I	BD-20	03/12/09	Pump was discovered with reverse flow. No apparent reason for the change.
A/I	BD-19	03/26/09	No apparent reason for low timer reading of 150.2 hours. Sample collector to monitor timer for placement.
A/I	BD-19	04/02/09	No apparent reason for low timer reading of 166.0; collector placed new timer.
A/I	BD-04	05/14/09	No apparent reason for low reading of 138.7 hours; possibly due to storms in the area.

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

Sample Type	Location Code	Collection Date	Reason
A/I	BD-19	05/14/09	No apparent reason for low reading of 131.3 hours; possibly due to storms in the area.
PW	BD-22	06/27/09	No access to compositor on 6/25/09. Sample collected on 06/27/09.
TLD	TLD-212-4	06/25/09	TLD was found damaged.
WG	BD-35	07/09/09	No sample, well pump off; homeowner absent, sample collected on 07/30/09.
WG	BD-34	10/09/09	No sample, well pump off; homeowner absent, sample collected on 11/25/09.
A/I	BD-05	11/25/09	Pump was discovered with reverse flow; no apparent reason for the change.
A/I	BD-03	12/23/09	No apparent reason for low timer reading of 113.5 hours.

Table D-2 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Collection Date	Reason
WG	BD-35	01/01/09	No sample, well pump off; homeowner was absent for the entire quarter.
WT	BD-55, BD-56	01/01/09	No sample. Water frozen.
WG	BD-50	01/08/09	No sample. Homeowner not cooperating.
WT	BD-38, BD-55 BD-56	01/08/09	No sample. Water frozen.
WT	BD-25, BD-38 BD-55, BD-56	01/15/09	No sample. Water frozen.

Table D-2 LISTING OF MISSED SAMPLES (continued)

Sample Type	Location Code	Collection Date	Reason
WT	BD-38, BD-55 BD-56	01/22/09	No sample. Water frozen.
WT	BD-38, BD-55 BD-56	01/29/09	No sample. Water frozen.
WT	BD-38, BD-55 BD-56	02/05/09	No sample. Water Frozen.
WG	BD-50	04/09/09	No sample. Homeowner not cooperating.
WG	BD-50	07/02/09	No sample. Homeowner not cooperating.
WG	BD-50	10/08/09	No sample. Homeowner not cooperating.
A/I	BD-21	11/05/09	Low timer reading of 42.5 hours; breaker tripped.
WT	BD-55, BD-56	12/31/09	No sample. Water frozen

Each program exception was reviewed to understand the causes of the program exception. Sampling and maintenance errors were reviewed with the personnel involved to prevent recurrence. Occasional equipment breakdowns and power outages 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 changes to the program in 2009. A homeowner, representing location BD-50, who had not been participating will be included in the program again in 2010. No ODCM change had occurred due to the homeowner's decisions.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken weekly and composited monthly at six locations (BD-10, BD-25, BD-38, BD-40, BD-55 and BD-56). Of these locations, only BD-10, BD-38, and BD-40 could be affected by Braidwood Station's effluent releases. 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 62 of 70 samples. The values ranged from 2.4 to 12 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 two of 24 samples. The concentrations ranged from 190 to 199 pCi/l. (Figures C–4 through C-6, Appendix C).

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–I.3, Appendix C). No nuclides were detected, and all required LLDs were met.

2. Public Water

Monthly composite of weekly samples were collected 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 3.7 to 6.9 pCi/l.

Concentrations detected were consistent with those detected in previous years (Figure C–7, Appendix C).

Tritium

Monthly composites of weekly samples from the location were analyzed for tritium activity (Table C–II.2, Appendix C). Tritium was detected in four of 12 samples. The values ranged from 333 to 799 pCi/l. Concentrations detected were consistent with those detected in previous years (Figure C–8, Appendix C).

Gamma Spectrometry

Samples from the location were analyzed for gamma emitting nuclides (Table C–II.3, 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-51, BD-53 and 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 detected in one of 31 samples at a concentration of 149 pCi/l. The concentration detected was consistent with those detected in previous years (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 bluegill, largemouth bass, smallmouth bass, golden redhorse, channel catfish and common carp were collected at three locations (BD-25, BD-28, and BD-41) semiannually. Locations BD-28 and BD-41 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 two locations (BD-10 and BD-57) semiannually. The locations, at the Braidwood Station outfall to the Kanakakee River and downstream of the outfall, could be affected by the 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 one station in one of four samples. The concentration was 61 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). Far field samples are analyzed when the respective near field sample results are inconsistent with previous measurements and radioactivity is confirmed as having its origin in airborne effluents from the station, or at the discretion of the REMP Program Owner. 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 8 to 41 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the far field (Group II) ranged from 3 to 44 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the Control location (Group III) ranged from 6 to 44 E–3 pCi/m^3 with a mean of 19 E–3 pCi/m^3. Comparison of the 2009 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 2009 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, BD19, BD-20, and BD-21) and analyzed weekly for I-131 (Table C–VII.1, Appendix C). I-131 was not detected, and the required LLD was met.

2. Terrestrial

a. Milk

Samples were collected from two locations (BD-17 and BD-18) biweekly May through October and monthly November through April. The following analyses were performed:

Iodine-131

Milk samples from all locations were analyzed for concentrations of I-131 (Table C–VIII.1, Appendix C). No I-131 was detected, and 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.

b. 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 downstream, BD-Quad 1, BD-Quad 2, BD-Quad 3 and BD-Quad 4) could be affected by Braidwood Station's effluent releases. 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.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing dual element calcium fluoride and lithium fluoride thermoluminescent dosimeters (TLD). Eighty TLD locations were established around the site. Results of TLD measurements are listed in Tables C–X.1 to C–X.3, Appendix C.

All TLD measurements were below 30 mR/quarter, with a range of 16 to 27 mR/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.

D. Land Use Survey

A Land Use Survey conducted during August 2009 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	1.8	-	-
C NE	0.7	0.9	-
D ENE	0.8	3.3	-
E E	0.8	2.3	-
F ESE	2.2	2.3	-
G SE	2.7	2.7	11.2
H SSE	4.5	-	-
J S	4.2	4.8	-
K SSW	1.3	5.3	5.6
L SW	0.4	1.2	-
M WSW	0.5	-	-
N W	0.4	1.6	8.7
P WNW	0.4	5.4	-
Q NW	0.4	-	-
R NNW	0.4	-	-

E. 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 primary laboratory, 17 out of 18 analytes met the specified acceptance criteria. One sample did not meet the specified acceptance criteria for the following reason:

1. Teledyne Brown Engineering's Analytics June 2009 Zn-65 in air particulate (AP) result of 137 pCi/L was higher than the known value of 101 pCi/L, resulting in a found to known ratio of 1.36. NCR 09-23 was initiated to investigate this failure. The failure appears to be a result of a slightly high bias on Detector 7. A recount on Detector 17 resulted in a Zn-65 result of 101 pCi/L. The detector has been tagged out-of-service until a recalibration can be performed. Detector 7 is not used for client samples.

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

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APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT QUARTERLY AND ANNUAL SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR *BRAIDWOOD STATION, 2009*

Name of Facility: BRAIDWOOD **DOCKET NUMBER: 50-456 & 50-457**
Location of Facility: BRACEVILLE, IL **REPORTING PERIOD: ANNUAL 2009**

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	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	GR-B	70	4	6.4 (50/58) (2.4/12.3)	7.2 (12/12) (3.7/11.6)	10.7 (12/12) (8.2/12.3)	BD-40 INDICATOR BRAIDWOOD STATION COOLING LAKE ONSITE	0
	H-3	24	200	195 (2/20) (190/199)	<LLD	195 (2/4) (190/199)	BD-38 INDICATOR MAIN DRAINAGE DITCH 1.5 MILES SW OF SITE	0
	GAMMA	70						
	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
	NB-95		15	<LLD	<LLD	-		0

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FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

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SURFACE WATER (PCI/LITER)	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	4.8 (10/12) (3.7/6.9)	NA	4.8 (10/12) (3.7/6.9)	BD-22 INDICATOR WILMINGTON 6.0 MILES NE OF SITE	0
	H-3	12	200	507 (4/12) (333/799)	NA	507 (4/12) (333/799)	BD-22 INDICATOR WILMINGTON 6.0 MILES NE OF SITE	0

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PUBLIC WATER (PCI/LITER)	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
	ZR-95		30	<LLD	NA	-		0
	I-131		15	<LLD	NA	-		0

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PUBLIC WATER (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
GROUND/WELL WATER (PCI/LITER)	H-3	31	200	149 (1/31)	NA	149 (1/4)	BD-36 INDICATOR HUTTON WELL 4.7 MILES E OF SITE	0
	GAMMA	31						
	MN-54		15	<LLD	NA	-		0
	CO-58		15	<LLD	NA	-		0
	FE-59		30	<LLD	NA	-		0

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GROUND/WELL WATER (PCI/LITER)	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
	BA-140		60	<LLD	NA	-		0

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GROUND/WELL WATER (PCI/LITER)	LA-140		15	<LLD	NA	-		0
FISH (PCI/KG WET)	GAMMA	12						
	MN-54		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
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0

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FISH (PCI/KG WET)	I-131		NA	<LLD	<LLD	-		0
	CS-134		130	<LLD	<LLD	-		0
	CS-137		150	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
SEDIMENT (PCI/KG DRY)	GAMMA	4						
	MN-54		NA	<LLD	NA	-		0
	CO-58		NA	<LLD	NA	-		0
	FE-59		NA	<LLD	NA	-		0

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SEDIMENT (PCI/KG DRY)	CO-60		NA	<LLD	NA	-		0
	ZN-65		NA	<LLD	NA	-		0
	NB-95		NA	<LLD	NA	-		0
	ZR-95		NA	<LLD	NA	-		0
	CS-134		150	<LLD	NA	-		0
	CS-137		180	61 (1/4)	NA	61 (1/2)	BD-57 INDICATOR 5.4 MILES E OF SITE	0
	BA-140		NA	<LLD	NA	-		0
	LA-140		NA	<LLD	NA	-		0

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AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	415	10	20 (360/363) (3/44)	19 (52/52) (6/44)	20 (52/52) (3/44)	BD-05 INDICATOR GARDNER 5.5 MILES SW 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
	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0

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AIR PARTICULATE (E-3 PCI/CU.METER)	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	415	70	<LLD	<LLD	-		0
MILK (PCI/LITER)	I-131	38	1	<LLD	<LLD	-		0
	GAMMA MN-54	38	NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0

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MILK (PCI/LITER)	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		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0
	BA-140		60	<LLD	<LLD	-		0

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MILK (PCI/LITER)	LA-140		15	<LLD	<LLD	-		0
VEGETATION (PCI/KG WET)	GAMMA	10						
	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

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VEGETATION (PCI/KG WET)	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 (MILLI-ROENTGEN/QTR.)	TLD-QUARTERLY	320	NA	20.3 (312/312) (15/27)	20.8 (8/8) (17/25)	25.0 (4/4) (24/26)	BD-209-2 INDICATOR 4.8 MILES S	0

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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, 2009

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 SW
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-53	Phelps Well (indicator)	0.7 miles E
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)	5.0 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-57	Circulating Water Blowdown Discharge (indicator)	5.4 miles E

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Braidwood Station, 2009

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 - TLD		
Site Boundary		
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 miles 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
Intermediate Distance		
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, 2009

Location	Location Description	Distance & Direction From Site
I. Environmental Dosimetry – TLD (cont'd)		
Control and Special Interest		
BD-03-1 and -2	Onsite 2	0.3 miles NE

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Braidwood Station, 2009

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
Drinking Water	Gross Beta	Monthly composite from weekly grab samples.	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices
Drinking Water	Gamma Spectroscopy	Monthly composite from weekly grab samples.	TBE, TBE-2007 Gamma emitting radioisotope analysis
Drinking Water	Tritium	Quarterly composite from weekly grab samples.	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Drinking 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	Gamma Spectroscopy	Samples collected twice annually via electroshocking or other techniques	TBE-2007 Gamma emitting radioisotope analysis

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Braidwood Station, 2009

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
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Global Dosimetry CaF_2 elements.	Global Dosimetry

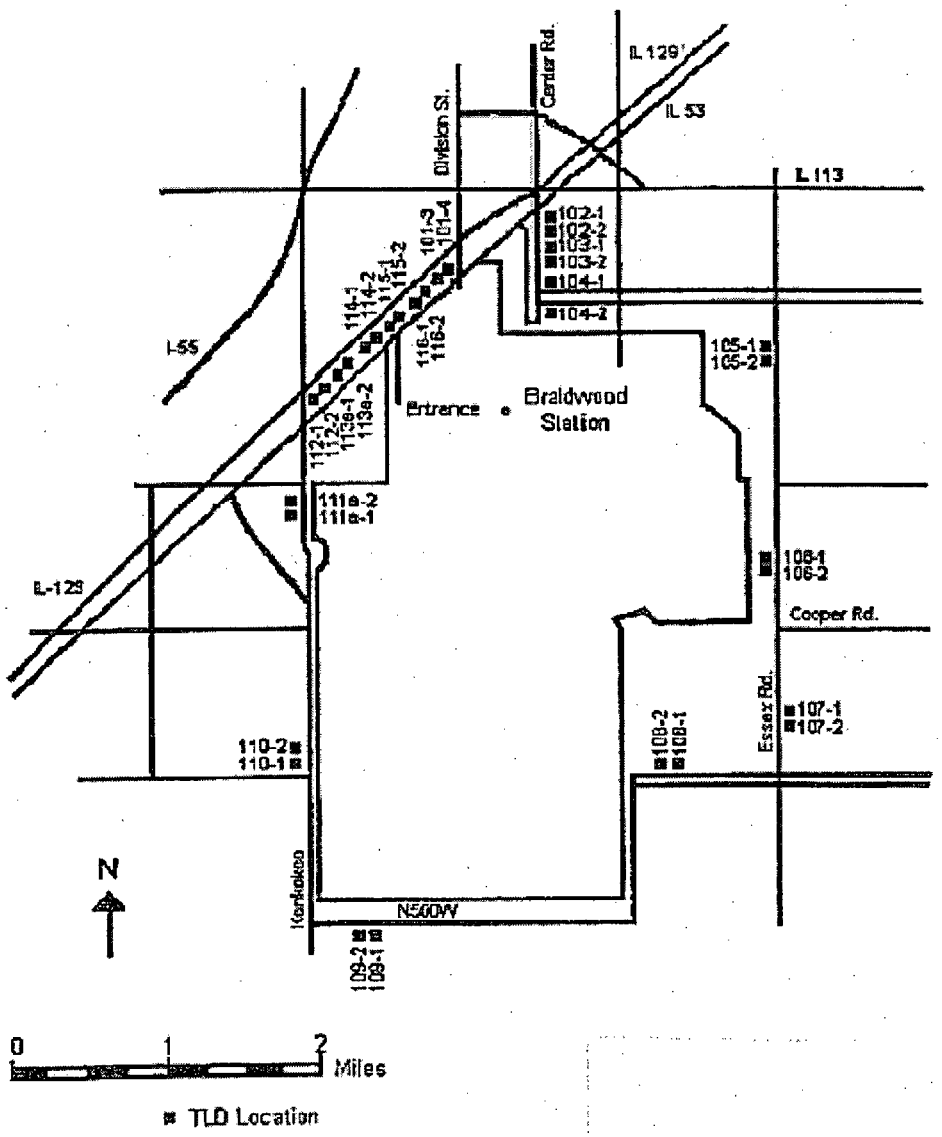


Figure B-1
Inner Ring TLD Locations of the
Braidwood Station, 2009

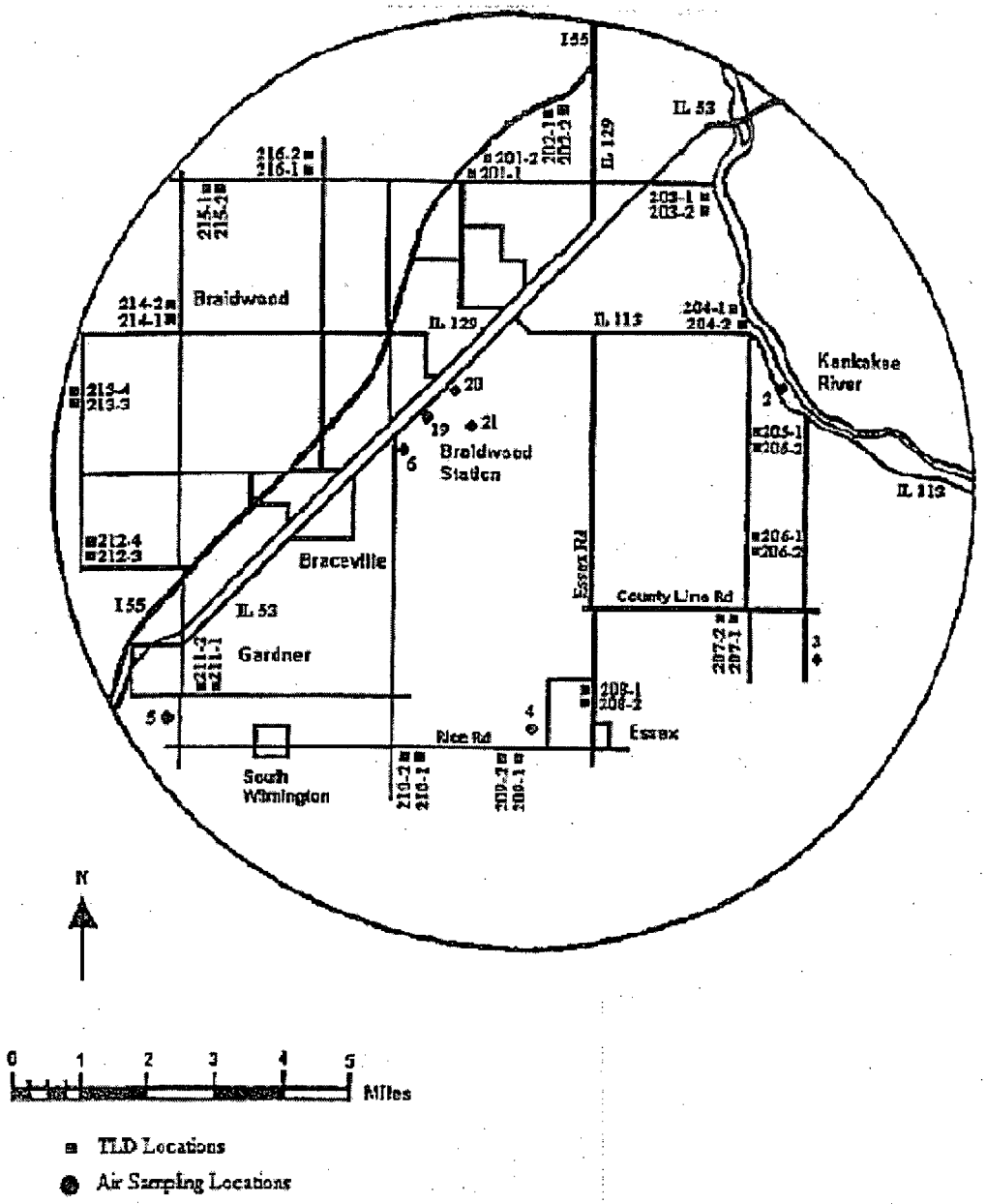


Figure B-2
Fixed Air Sampling and Outer Ring TLD Locations
of the Braidwood Station, 2009

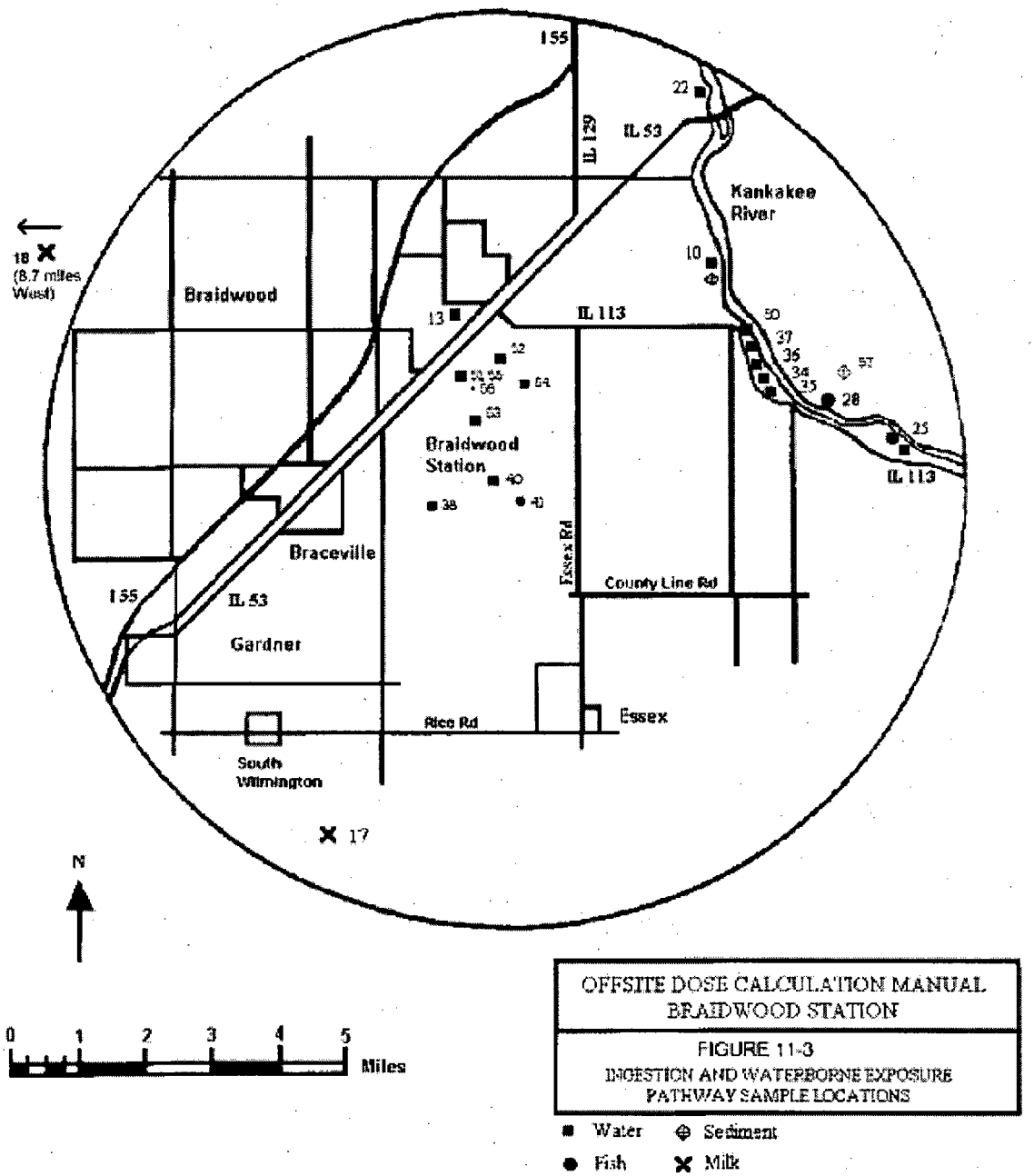


Figure B-3
Ingestion and Waterborne Exposure Pathway Sample Locations
of the Braidwood Station, 2009

APPENDIX C

DATA TABLES AND FIGURES
PRIMARY LABORATORY

TABLE C-I.1 **CONCENTRATIONS OF GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-10	BD-25	BD-38	BD-40	BD-55	BD-56
01/01/09 - 01/29/09	7.2 ± 1.9	9.7 ± 2.4	7.5 ± 2.4	11 ± 2.4	(1)	(1)
02/12/09 - 02/26/09	5.7 ± 1.8	12 ± 2.5	6.4 ± 2.1 (1)	12 ± 2.6	4.9 ± 1.6 (1)	4.9 ± 1.6 (1)
03/05/09 - 03/26/09	6.2 ± 1.9	6.1 ± 2.2	4.5 ± 2.1	12 ± 2.6	2.5 ± 1.6	2.8 ± 1.8
04/02/09 - 04/30/09	4.0 ± 2.0	8.3 ± 2.6	6.6 ± 2.5	11 ± 2.8	3.4 ± 1.9	5.7 ± 2.4
05/07/09 - 05/28/09	3.2 ± 2.0	4.5 ± 2.3	4.6 ± 2.5	10 ± 2.7	< 2.8	< 3.3
06/04/09 - 06/25/09	4.7 ± 1.9	7.8 ± 2.2	4.2 ± 2.1	11 ± 2.5	2.4 ± 1.6	3.4 ± 2.1
07/02/09 - 07/30/09	6.5 ± 2.4	7.1 ± 2.5	5.1 ± 2.8	10 ± 3.0	< 2.7	< 3.6
08/06/09 - 08/27/09	< 3.5	3.7 ± 2.3	5.1 ± 2.0	8.2 ± 2.8	< 3.1	< 3.7
09/03/09 - 09/24/09	4.3 ± 2.1	9.8 ± 2.4	6.9 ± 2.5	12 ± 2.7	4.4 ± 1.8	3.8 ± 2.1
10/01/09 - 10/29/09	< 3.2	4.7 ± 2.0	7.1 ± 2.8	9.9 ± 2.9	3.9 ± 2.1	4.1 ± 2.4
11/05/09 - 11/25/09	6.6 ± 2.1	6.1 ± 1.9	7.8 ± 2.4	11 ± 2.6	3.8 ± 1.8	7.3 ± 2.2
12/03/09 - 12/23/09	4.1 ± 2.0	7.6 ± 2.2	6.5 ± 2.4	9.9 ± 2.5	4.4 ± 1.8 (1)	4.4 ± 2.1 (1)
MEAN	5.2 ± 2.7	7.2 ± 4.8	6.0 ± 2.5	11 ± 2.3	3.7 ± 1.8	4.5 ± 2.8

TABLE C-I.2 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-10	BD-25	BD-38	BD-40	BD-55	BD-56
01/01/09 - 03/26/09	< 178	< 176	190 ± 116	< 170	< 173	< 178
04/02/09 - 06/25/09	< 126	< 121	< 126	< 121	< 124	< 120
07/02/09 - 09/24/09	< 125	< 118	199 ± 92	< 126	< 181	< 183
10/01/09 - 12/23/09	< 153	< 151	< 154	< 155	< 153	< 154
MEAN	-	-	195 ± 13	-	-	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/01/09 - 01/29/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 8	< 1	< 1	< 14	< 4
	02/05/09 - 02/26/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 6	< 1	< 1	< 11	< 4
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 0.5	< 1	< 1	< 1	< 15	< 0.5	< 0.5	< 13	< 4
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 0.4	< 1	< 1	< 1	< 15	< 0.5	< 1	< 15	< 5
	05/07/09 - 05/28/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 18	< 6
	06/04/09 - 06/25/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 9	< 3
	07/02/09 - 07/30/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 19	< 6
	08/06/09 - 08/27/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 8	< 1	< 1	< 12	< 4
	09/03/09 - 09/24/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 16	< 5
	10/01/09 - 10/29/09	< 2	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 2	< 3	< 24	< 8
	11/05/09 - 11/25/09	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 11	< 1	< 2	< 17	< 6
	12/03/09 - 12/31/09	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 22	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-25	01/01/09 - 01/29/09	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 14	< 2	< 2	< 23	< 8
	02/05/09 - 02/26/09	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 8	< 2	< 2	< 17	< 5
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 14	< 1	< 1	< 14	< 5
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 12	< 1	< 1	< 20	< 6
	05/07/09 - 05/28/09	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 12	< 1	< 2	< 17	< 5
	06/04/09 - 06/25/09	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 8	< 2
	07/02/09 - 07/30/09	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 7
	08/06/09 - 08/27/09	< 1	< 1	< 4	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 17	< 5
	09/03/09 - 09/24/09	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 6
	10/01/09 - 10/29/09	< 3	< 2	< 5	< 3	< 5	< 3	< 4	< 13	< 2	< 3	< 25	< 7
	11/05/09 - 11/25/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 10	< 1	< 1	< 15	< 5
	12/03/09 - 12/31/09	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 13	< 2	< 2	< 23	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/01/09 - 01/01/09	< 1 (1)	< 1	< 3	< 1	< 2	< 1	< 2	< 60	< 1	< 1	< 43	< 14
	02/12/09 - 02/26/09	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 15	< 3	< 3	< 28	< 10
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 15	< 1	< 1	< 17	< 5
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 23	< 8
	05/07/09 - 05/28/09	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 10	< 1	< 1	< 15	< 5
	06/04/09 - 06/25/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 10	< 1	< 2	< 18	< 6
	07/02/09 - 07/30/09	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 20	< 8
	08/06/09 - 08/27/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 12	< 1	< 2	< 18	< 5
	09/03/09 - 09/24/09	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 13	< 1	< 2	< 20	< 7
	10/01/09 - 10/29/09	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 2	< 3	< 24	< 7
	11/05/09 - 11/25/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 13	< 1	< 2	< 20	< 6
	12/03/09 - 12/31/09	< 2	< 3	< 6	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 23	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-40	01/01/09 - 01/29/09	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 18	< 6
	02/05/09 - 02/26/09	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 12	< 2	< 2	< 22	< 7
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 16	< 5
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 6	< 1	< 1	< 17	< 5
	05/07/09 - 05/28/09	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 26	< 9
	06/04/09 - 06/25/09	< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 8	< 1	< 1	< 13	< 5
	07/02/09 - 07/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 6	< 1	< 1	< 8	< 2
	08/06/09 - 08/27/09	< 1	< 1	< 3	< 2	< 2	< 1	< 2	< 11	< 1	< 1	< 18	< 5
	09/03/09 - 09/24/09	< 1	< 2	< 4	< 1	< 2	< 2	< 3	< 13	< 1	< 1	< 20	< 6
	10/01/09 - 10/29/09	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 15	< 3	< 3	< 28	< 8
	11/05/09 - 11/25/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 13	< 1	< 2	< 19	< 6
	12/03/09 - 12/31/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/01/09 - 01/29/09	(1)											
	02/12/09 - 02/26/09	< 3 (1)	< 4	< 9	< 4	< 7	< 4	< 7	< 15	< 3	< 4	< 30	< 10
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 14	< 1	< 1	< 16	< 5
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 12	< 1	< 1	< 19	< 6
	05/07/09 - 05/28/09	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 15	< 2	< 2	< 23	< 7
	06/04/09 - 06/25/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 8	< 1	< 1	< 13	< 5
	07/02/09 - 07/30/09	< 1	< 1	< 3	< 1	< 2	< 1	< 3	< 12	< 1	< 1	< 17	< 6
	08/06/09 - 08/27/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 14	< 5
	09/03/09 - 09/24/09	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 20	< 7
	10/01/09 - 10/29/09	< 2	< 3	< 6	< 2	< 5	< 3	< 4	< 12	< 2	< 2	< 22	< 7
	11/05/09 - 11/25/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 5
	12/03/09 - 12/23/09	< 1 (1)	< 1	< 3	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 19	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-56	01/01/09 - 01/29/09	(1)	-	-	-	-	-	-	-	-	-	-	-
	02/12/09 - 02/26/09	< 4 (1)	< 4	< 8	< 3	< 7	< 4	< 7	< 14	< 3	< 4	< 29	< 9
	03/05/09 - 03/26/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 15	< 1	< 1	< 16	< 5
	04/02/09 - 04/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 6	< 1	< 1	< 20	< 5
	05/07/09 - 05/28/09	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 24	< 8
	06/04/09 - 06/25/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 15	< 5
	07/02/09 - 07/30/09	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 20	< 7
	08/06/09 - 08/27/09	< 1	< 1	< 3	< 1	< 2	< 1	< 3	< 12	< 1	< 1	< 17	< 5
	09/03/09 - 09/24/09	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 15	< 1	< 2	< 20	< 7
	10/01/09 - 10/29/09	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 29	< 10
	11/05/09 - 11/25/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 10	< 1	< 1	< 16	< 5
	12/03/09 - 12/23/09	< 2 (1)	< 2	< 5	< 2	< 3	< 2	< 4	< 7	< 1	< 2	< 34	< 9
	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, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-22
01/01/09 - 01/29/09	4.6 ± 1.7
01/29/09 - 02/26/09	3.7 ± 1.7
02/26/09 - 04/02/09	6.9 ± 1.9
04/02/09 - 04/30/09	4.4 ± 1.8
04/30/09 - 05/28/09	4.9 ± 1.9
05/28/09 - 07/02/09	< 2.6 (1)
07/02/09 - 07/30/09	< 2.8
07/30/09 - 08/27/09	4.2 ± 1.7
08/27/09 - 10/01/09	4.8 ± 1.9
10/01/09 - 10/29/09	5.0 ± 1.9
11/05/09 - 12/03/09	5.9 ± 1.9
12/03/09 - 12/31/09	4.1 ± 1.8
MEAN	4.8 ± 1.9

TABLE C-II.2 **CONCENTRATIONS OF TRITIUM IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	BD-22
01/01/09 - 01/29/09	< 194
01/29/09 - 02/26/09	< 194
02/26/09 - 04/02/09	< 157
04/02/09 - 04/30/09	< 168
04/30/09 - 05/28/09	< 180
05/28/09 - 07/02/09	< 192
07/02/09 - 07/30/09	< 169
07/30/09 - 08/27/09	530 ± 132
08/27/09 - 10/01/09	333 ± 104
10/01/09 - 10/29/09	799 ± 146
11/05/09 - 12/03/09	365 ± 116
12/03/09 - 12/31/09	< 162
MEAN	507 ± 426

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-II.3 **CONCENTRATIONS OF GAMMA EMITTERS IN PUBLIC WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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-22	01/01/09 - 01/29/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 15	< 5
	01/29/09 - 02/26/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 18	< 5
	02/26/09 - 04/02/09	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 11	< 1	< 1	< 14	< 4
	04/02/09 - 04/30/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 8	< 1	< 1	< 14	< 4
	04/30/09 - 05/28/09	< 0.5	< 1	< 1	< 0.4	< 1	< 1	< 1	< 14	< 0.4	< 0.5	< 13	< 4
	05/28/09 - 07/02/09	< 0.5 (1)	< 1	< 2	< 0.4	< 1	< 1	< 1	< 12	< 0.5	< 0.4	< 32	< 11
	07/02/09 - 07/30/09	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 9	< 0.5	< 1	< 34	< 10
	07/30/09 - 08/27/09	< 1	< 2	< 4	< 1	< 2	< 2	< 3	< 8	< 1	< 1	< 36	< 12
	08/27/09 - 10/01/09	< 0.3	< 0.4	< 1	< 0.3	< 1	< 0.5	< 1	< 8	< 0.3	< 0.3	< 8	< 2
	10/01/09 - 10/29/09	< 0.5	< 1	< 2	< 0.4	< 1	< 1	< 1	< 12	< 0.4	< 0.5	< 20	< 6
	11/05/09 - 12/03/09	< 2	< 2	< 5	< 1	< 3	< 2	< 3	< 6	< 1	< 2	< 44	< 13
	12/03/09 - 12/31/09	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 8	< 1	< 1	< 14	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-III.1 CONCENTRATIONS OF TRITIUM IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009

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-53	BD-54
01/08/09 - 01/08/09	< 174	< 179	(1)	< 173	< 178	(1)	< 175	< 178	< 176
04/09/09 - 04/09/09	< 135	< 140	< 135	149 ± 96	< 140	(1)	< 135	< 134	< 135
07/30/09 - 07/30/09	< 180	< 177	< 173 (1)	< 185	< 183	(1)	< 184	< 183	< 176
10/09/09 - 11/25/09	< 168	< 170	< 172 (1)	< 168	< 166	(1)	< 171	< 173	< 169
MEAN	-	-	-	149	-		-	-	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/08/09 - 01/08/09	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 17	< 4
	04/09/09 - 04/09/09	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 13	< 1	< 1	< 17	< 5
	07/09/09 - 07/09/09	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 8	< 1	< 1	< 13	< 4
	10/08/09 - 10/08/09	< 5	< 5	< 10	< 5	< 9	< 5	< 9	< 13	< 5	< 6	< 32	< 10
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-34	01/08/09 - 01/08/09	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 17	< 5
	04/09/09 - 04/09/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 15	< 1	< 2	< 21	< 8
	07/09/09 - 07/09/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 10	< 3
	11/25/09 - 11/25/09	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 23	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-35	01/08/09 - 01/08/09	(1)											
	04/09/09 - 04/09/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 17	< 7
	07/30/09 - 07/30/09	< 2 (1)	< 2	< 4	< 2	< 4	< 2	< 3	< 3	< 2	< 2	< 9	< 3
	10/09/09 - 10/09/09	< 4 (1)	< 4	< 8	< 3	< 7	< 4	< 6	< 8	< 3	< 4	< 22	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-36	01/08/09 - 01/08/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 6
	04/09/09 - 04/09/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 21	< 6
	07/09/09 - 07/09/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 10	< 1	< 2	< 17	< 6
	10/09/09 - 10/09/09	< 4	< 4	< 8	< 3	< 9	< 4	< 7	< 8	< 4	< 4	< 20	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-37	01/08/09 - 01/08/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 15	< 5
	04/09/09 - 04/09/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 15	< 1	< 1	< 19	< 6
	07/09/09 - 07/09/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 14	< 6
	10/09/09 - 10/09/09	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 8	< 4	< 3	< 19	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUND/WELL WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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-51	01/08/09 - 01/08/09	(1)											
	04/09/09 - 04/09/09	(1)											
	07/09/09 - 07/09/09	(1)											
	10/09/09 - 10/09/09	(1)											
	MEAN												
BD-51	01/08/09 - 01/08/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 6
	04/09/09 - 04/09/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 14	< 4
	07/09/09 - 07/09/09	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 5	< 1	< 1	< 10	< 3
	10/09/09 - 10/09/09	< 5	< 5	< 10	< 4	< 11	< 6	< 9	< 10	< 4	< 5	< 25	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-53	01/08/09 - 01/08/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 15	< 1	< 2	< 20	< 7
	04/09/09 - 04/09/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 16	< 5
	07/09/09 - 07/09/09	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 12	< 2	< 2	< 19	< 6
	10/09/09 - 10/09/09	< 5	< 5	< 11	< 4	< 10	< 5	< 8	< 10	< 4	< 5	< 25	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
BD-54	01/08/09 - 01/08/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 13	< 1	< 1	< 19	< 6
	04/09/09 - 04/09/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 16	< 6
	07/09/09 - 07/09/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 10	< 3
	10/09/09 - 10/09/09	< 4	< 4	< 8	< 3	< 7	< 4	< 6	< 8	< 3	< 4	< 19	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IV.1 **CONCENTRATIONS OF GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	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-25														
	05/05/09	Channel Catfish	< 52	< 89	< 214	< 50	< 144	< 94	< 145	< 2270	< 55	< 65	< 1950	< 375
	05/05/09	Common Carp	< 42	< 51	< 140	< 50	< 91	< 64	< 92	< 1330	< 43	< 41	< 1390	< 279
	10/14/09	Channel Catfish	< 50	< 65	< 144	< 45	< 110	< 80	< 108	< 774	< 54	< 48	< 989	< 310
	10/14/09	Golden Redhorse	< 59	< 81	< 215	< 57	< 115	< 100	< 120	< 950	< 54	< 56	< 1140	< 332
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-
BD-28														
	05/05/09	Channel Catfish	< 19	< 31	< 67	< 16	< 47	< 29	< 46	< 731	< 20	< 21	< 612	< 206
	05/05/09	Common Carp	< 13	< 24	< 48	< 19	< 34	< 23	< 26	< 574	< 15	< 17	< 540	< 125
	10/14/09	Golden Redhorse	< 48	< 67	< 153	< 54	< 98	< 61	< 108	< 653	< 43	< 45	< 824	< 231
	10/14/09	Smallmouth Bass	< 70	< 90	< 218	< 56	< 134	< 98	< 150	< 1030	< 65	< 54	< 1250	< 382
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-
BD-41														
	05/05/09	Channel Catfish	< 17	< 19	< 62	< 17	< 36	< 17	< 35	< 585	< 18	< 21	< 543	< 195
	05/05/09	Largemouth Bass	< 36	< 40	< 89	< 48	< 82	< 47	< 91	< 1270	< 32	< 35	< 1010	< 389
	10/13/09	Bluegill	< 75	< 96	< 253	< 79	< 159	< 119	< 165	< 1280	< 70	< 78	< 1520	< 619
	10/13/09	Largemouth Bass	< 59	< 69	< 169	< 56	< 98	< 91	< 122	< 1080	< 51	< 52	< 1210	< 339
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.1 **CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

STC	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-10	05/07/09	< 83	< 100	< 233	< 56	< 181	< 107	< 170	< 69	< 100	< 1680	< 408
	10/10/09	< 47	< 36	< 91	< 45	< 89	< 56	< 79	< 40	< 43	< 256	< 78
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-57	05/07/09	< 41	< 50	< 124	< 46	< 102	< 63	< 95	< 40	61 ± 39	< 817	< 240
	10/10/09	< 46	< 46	< 107	< 47	< 105	< 42	< 78	< 37	< 51	< 242	< 56
	MEAN	-	-	-	-	-	-	-	-	61	-	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

TABLE C-VI.1 **CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

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

COLLECTION	GROUP I				GROUP II			GROUP III
PERIOD	BD-06	BD-19	BD-20	BD-21	BD-02	BD-04	BD-05	BD-03
01/01/09 - 01/08/09	31 ± 5	31 ± 5	33 ± 5	32 ± 5	30 ± 5	33 ± 5	44 ± 6	31 ± 5
01/08/09 - 01/15/09	30 ± 5	31 ± 5	31 ± 5	31 ± 5	29 ± 5	27 ± 5	33 ± 5	24 ± 5
01/15/09 - 01/22/09	33 ± 5	33 ± 5	< 5	38 ± 6	33 ± 5	31 ± 5	33 ± 5	36 ± 6
01/22/09 - 01/29/09	37 ± 5	34 ± 5	30 ± 5	41 ± 5	31 ± 5	36 ± 5	39 ± 5	32 ± 5
01/29/09 - 02/05/09	20 ± 4	21 ± 4	17 ± 4	25 ± 5	21 ± 5	23 ± 5	25 ± 5	19 ± 4
02/05/09 - 02/12/09	32 ± 5	24 ± 4	29 ± 5	27 ± 5	28 ± 5	27 ± 5	31 ± 5	26 ± 5
02/12/09 - 02/19/09	23 ± 5	15 ± 4	17 ± 4	15 ± 4	22 ± 5	17 ± 4	21 ± 5	17 ± 4
02/19/09 - 02/26/09	27 ± 5	33 ± 5	32 ± 5	31 ± 5	33 ± 5	28 ± 5	37 ± 5	32 ± 5
02/26/09 - 03/05/09	23 ± 5	19 ± 4	20 ± 4	17 ± 4	19 ± 4	19 ± 4	5 ± 2	19 ± 4
03/05/09 - 03/12/09	19 ± 4	19 ± 5	(1) 8 ± 4	(1) 16 ± 4	14 ± 4	20 ± 4	19 ± 4	16 ± 4
03/12/09 - 03/19/09	26 ± 5	24 ± 5	22 ± 5	19 ± 4	20 ± 4	21 ± 4	24 ± 5	23 ± 4
03/19/09 - 03/26/09	16 ± 4	21 ± 5	(1) 18 ± 4	18 ± 4	19 ± 4	21 ± 5	19 ± 4	17 ± 4
03/26/09 - 04/02/09	18 ± 4	14 ± 4	(1) 15 ± 4	13 ± 4	11 ± 4	15 ± 4	18 ± 4	12 ± 4
04/02/09 - 04/09/09	13 ± 4	11 ± 4	11 ± 4	12 ± 4	16 ± 4	15 ± 4	13 ± 4	14 ± 4
04/09/09 - 04/16/09	17 ± 4	18 ± 4	16 ± 4	17 ± 4	17 ± 4	19 ± 4	17 ± 4	16 ± 4
04/16/09 - 04/23/09	14 ± 4	16 ± 4	14 ± 4	14 ± 4	18 ± 4	12 ± 4	19 ± 4	14 ± 4
04/23/09 - 04/30/09	14 ± 4	11 ± 4	14 ± 4	15 ± 4	11 ± 4	16 ± 4	3 ± 2	16 ± 4
04/30/09 - 05/07/09	18 ± 4	15 ± 4	21 ± 4	20 ± 4	19 ± 4	20 ± 4	22 ± 4	21 ± 4
05/07/09 - 05/14/09	10 ± 4	11 ± 5	11 ± 4	8 ± 4	10 ± 4	14 ± 5	10 ± 4	10 ± 4
05/14/09 - 05/21/09	13 ± 4	12 ± 4	(1) 13 ± 4	18 ± 4	18 ± 4	14 ± 4	(1) 16 ± 4	15 ± 4
05/21/09 - 05/28/09	18 ± 4	16 ± 4	12 ± 4	18 ± 4	17 ± 4	18 ± 4	18 ± 4	15 ± 4
05/28/09 - 06/04/09	15 ± 4	12 ± 4	13 ± 4	13 ± 4	14 ± 4	14 ± 4	16 ± 4	12 ± 4
06/04/09 - 06/11/09	17 ± 4	11 ± 4	13 ± 4	15 ± 4	14 ± 4	13 ± 4	16 ± 4	16 ± 4
06/11/09 - 06/18/09	14 ± 4	14 ± 4	12 ± 4	12 ± 4	13 ± 4	11 ± 4	12 ± 4	13 ± 4
06/18/09 - 06/25/09	19 ± 5	18 ± 5	20 ± 5	20 ± 5	17 ± 5	23 ± 5	19 ± 5	17 ± 5
06/25/09 - 07/02/09	9 ± 4	< 6	10 ± 4	10 ± 4	< 6	7 ± 4	8 ± 4	7 ± 4
07/02/09 - 07/09/09	14 ± 4	14 ± 4	17 ± 4	17 ± 4	12 ± 4	18 ± 4	16 ± 4	16 ± 4
07/09/09 - 07/16/09	18 ± 5	16 ± 4	20 ± 5	20 ± 5	19 ± 5	18 ± 5	17 ± 4	19 ± 5
07/16/09 - 07/23/09	13 ± 4	17 ± 4	14 ± 4	14 ± 4	15 ± 4	13 ± 4	17 ± 4	11 ± 4
07/23/09 - 07/30/09	23 ± 5	24 ± 5	19 ± 5	13 ± 4	17 ± 5	19 ± 5	18 ± 5	19 ± 5
07/30/09 - 08/06/09	17 ± 4	16 ± 4	20 ± 4	18 ± 4	16 ± 4	18 ± 4	17 ± 4	14 ± 4
08/06/09 - 08/13/09	18 ± 4	18 ± 4	18 ± 4	18 ± 4	23 ± 5	21 ± 5	21 ± 5	17 ± 4
08/13/09 - 08/20/09	20 ± 5	21 ± 5	16 ± 5	13 ± 4	21 ± 5	21 ± 5	26 ± 5	21 ± 5
08/20/09 - 08/27/09	13 ± 4	17 ± 4	12 ± 4	10 ± 4	11 ± 4	14 ± 4	14 ± 4	13 ± 4
08/27/09 - 09/03/09	17 ± 4	16 ± 4	15 ± 4	15 ± 4	12 ± 4	17 ± 4	15 ± 4	13 ± 4
09/03/09 - 09/10/09	30 ± 4	32 ± 4	31 ± 4	35 ± 5	31 ± 4	32 ± 5	35 ± 5	31 ± 4
09/10/09 - 09/17/09	23 ± 5	19 ± 5	29 ± 5	26 ± 5	23 ± 5	24 ± 5	26 ± 5	27 ± 5
09/17/09 - 09/24/09	26 ± 4	24 ± 4	23 ± 4	22 ± 4	25 ± 4	23 ± 4	22 ± 4	24 ± 4
09/24/09 - 10/01/09	15 ± 4	12 ± 4	15 ± 4	14 ± 4	13 ± 4	15 ± 4	17 ± 4	11 ± 4
10/01/09 - 10/08/09	9 ± 4	10 ± 4	8 ± 4	11 ± 4	8 ± 4	7 ± 4	10 ± 4	6 ± 4
10/08/09 - 10/15/09	17 ± 4	18 ± 4	16 ± 4	18 ± 4	14 ± 4	13 ± 4	13 ± 4	15 ± 4
10/15/09 - 10/22/09	18 ± 4	15 ± 4	20 ± 5	21 ± 5	14 ± 4	17 ± 4	16 ± 4	19 ± 5

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VI.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009

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

COLLECTION	GROUP I				GROUP II			GROUP III
PERIOD	BD-06	BD-19	BD-20	BD-21	BD-02	BD-04	BD-05	BD-03
10/22/09 - 10/29/09	16 ± 4	15 ± 4	17 ± 4	16 ± 4	12 ± 4	13 ± 4	15 ± 4	15 ± 4
10/29/09 - 11/05/09	13 ± 4	18 ± 4	18 ± 4	(1)	16 ± 4	23 ± 4	18 ± 4	17 ± 4
11/05/09 - 11/12/09	25 ± 4	26 ± 4	31 ± 4	36 ± 4	26 ± 4	30 ± 4	29 ± 4	29 ± 4
11/12/09 - 11/19/09	16 ± 4	16 ± 4	15 ± 4	15 ± 4	15 ± 4	17 ± 4	19 ± 4	15 ± 4
11/19/09 - 11/25/09	20 ± 5	17 ± 5	22 ± 5	19 ± 5	18 ± 5	19 ± 5	7 ± 4 (1)	20 ± 5
11/25/09 - 12/03/09	19 ± 4	20 ± 4	21 ± 4	24 ± 4	24 ± 4	21 ± 4	21 ± 4	23 ± 4
12/03/09 - 12/10/09	17 ± 4	20 ± 5	20 ± 4	21 ± 5	23 ± 5	22 ± 5	19 ± 4	20 ± 5
12/10/09 - 12/17/09	34 ± 5	32 ± 5	33 ± 5	36 ± 5	23 ± 4	36 ± 5	33 ± 5	38 ± 5
12/17/09 - 12/23/09	37 ± 6	38 ± 6	35 ± 6	39 ± 7	32 ± 6	35 ± 6	36 ± 6	44 ± 8 (1)
12/23/09 - 12/31/09	22 ± 4	23 ± 4	20 ± 4	19 ± 4	13 ± 3	22 ± 4	22 ± 4	26 ± 4
MEAN	20 ± 14	19 ± 14	19 ± 14	20 ± 17	19 ± 13	20 ± 14	20 ± 18	19 ± 16

* THE MEAN AND 2 STANDARD DEVIATION VALUES 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, 2009

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
01/01/09 - 01/29/09	30	41	33 ± 6	01/01/09 - 01/29/09	27	44	33 ± 9	01/01/09 - 01/29/09	24	36	31 ± 10
01/29/09 - 02/26/09	15	33	24 ± 12	01/29/09 - 02/26/09	17	37	26 ± 11	01/29/09 - 02/26/09	17	32	24 ± 13
02/26/09 - 04/02/09	8	26	18 ± 8	02/26/09 - 04/02/09	5	24	18 ± 9	02/26/09 - 04/02/09	12	23	17 ± 8
04/02/09 - 04/30/09	11	18	14 ± 5	04/02/09 - 04/30/09	3	19	15 ± 9	04/02/09 - 04/30/09	14	16	15 ± 2
04/30/09 - 05/28/09	8	21	15 ± 8	04/30/09 - 05/28/09	10	22	16 ± 7	04/30/09 - 05/28/09	10	21	15 ± 8
05/28/09 - 07/02/09	9	20	14 ± 7	05/28/09 - 07/02/09	7	23	14 ± 9	05/28/09 - 07/02/09	7	17	13 ± 8
07/02/09 - 07/30/09	13	24	17 ± 7	07/02/09 - 07/30/09	12	19	17 ± 5	07/02/09 - 07/30/09	11	19	16 ± 7
07/30/09 - 09/03/09	10	21	16 ± 6	07/30/09 - 09/03/09	11	26	18 ± 8	07/30/09 - 09/03/09	13	21	15 ± 6
09/03/09 - 10/01/09	12	35	23 ± 14	09/03/09 - 10/01/09	13	35	24 ± 13	09/03/09 - 10/01/09	11	31	23 ± 17
10/01/09 - 10/29/09	8	21	15 ± 8	10/01/09 - 10/29/09	7	17	13 ± 6	10/01/09 - 10/29/09	6	19	14 ± 11
10/29/09 - 12/03/09	13	36	21 ± 11	10/29/09 - 12/03/09	7	30	20 ± 11	10/29/09 - 12/03/09	15	29	21 ± 11
12/03/09 - 12/31/09	17	39	28 ± 16	12/03/09 - 12/31/09	13	36	26 ± 15	12/03/09 - 12/31/09	20	44	32 ± 22
01/01/09 - 12/31/09	8	41	20 ± 15	01/01/09 - 12/31/09	3	44	20 ± 15	01/01/09 - 12/31/09	6	44	19 ± 16

* THE MEAN AND 2 STANDARD DEVIATION VALUES 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, 2009**

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

STC	LLECTION 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	01/01/09 - 04/02/09	< 2	< 3	< 7	< 2	< 7	< 4	< 6	< 2	< 2	< 76	< 19
	04/02/09 - 07/02/09	< 3	< 6	< 23	< 2	< 11	< 6	< 12	< 4	< 4	< 926	< 291
	07/02/09 - 10/01/09	< 4	< 5	< 21	< 5	< 11	< 7	< 13	< 4	< 3	< 776	< 237
	10/01/09 - 12/31/09	< 3	< 4	< 5	< 5	< 9	< 6	< 9	< 4	< 4	< 50	< 24
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-03	01/01/09 - 04/02/09	< 3	< 2	< 10	< 2	< 6	< 5	< 6	< 4	< 3	< 85	< 27
	04/02/09 - 07/02/09	< 3	< 6	< 15	< 3	< 9	< 6	< 11	< 3	< 2	< 501	< 303
	07/02/09 - 10/01/09	< 3	< 4	< 17	< 3	< 6	< 5	< 8	< 3	< 2	< 570	< 254
	10/01/09 - 12/31/09	< 1	< 2	< 3	< 1	< 2	< 2	< 3	< 1	< 1	< 17	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-04	01/01/09 - 04/02/09	< 3	< 3	< 7	< 2	< 7	< 3	< 5	< 3	< 2	< 52	< 23
	04/02/09 - 07/02/09	< 3	< 5	< 23	< 2	< 9	< 7	< 10	< 4	< 3	< 773	< 318
	07/02/09 - 10/01/09	< 3	< 5	< 15	< 3	< 7	< 4	< 10	< 3	< 3	< 727	< 233
	10/01/09 - 12/31/09	< 3	< 4	< 12	< 4	< 12	< 5	< 5	< 4	< 4	< 65	< 15
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-05	01/01/09 - 04/02/09	< 3	< 4	< 12	< 1	< 7	< 6	< 9	< 4	< 3	< 83	< 37
	04/02/09 - 07/02/09	< 2	< 3	< 17	< 3	< 5	< 5	< 8	< 2	< 2	< 576	< 243
	07/02/09 - 10/01/09	< 3	< 6	< 16	< 3	< 8	< 5	< 9	< 3	< 2	< 515	< 154
	10/01/09 - 12/31/09	< 2	< 2	< 6	< 2	< 7	< 3	< 4	< 2	< 2	< 38	< 17
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-06	01/01/09 - 04/02/09	< 3	< 4	< 9	< 2	< 7	< 4	< 6	< 3	< 3	< 72	< 22
	04/02/09 - 07/02/09	< 3	< 8	< 20	< 3	< 9	< 6	< 10	< 3	< 3	< 698	< 294
	07/02/09 - 10/01/09	< 4	< 5	< 20	< 3	< 9	< 8	< 11	< 3	< 3	< 817	< 185
	10/01/09 - 12/31/09	< 5	< 5	< 8	< 3	< 8	< 6	< 11	< 4	< 4	< 54	< 19
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-VI.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

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

STC	LLECTION 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	01/01/09 - 04/02/09	< 3	< 3	< 6	< 2	< 8	< 4	< 6	< 3	< 2	< 69	< 29
	04/02/09 - 07/02/09	< 3	< 6	< 19	< 3	< 8	< 6	< 11	< 3	< 3	< 651	< 215
	07/02/09 - 10/01/09	< 4	< 7	< 21	< 3	< 10	< 6	< 10	< 3	< 3	< 729	< 223
	10/01/09 - 12/31/09	< 2	< 3	< 7	< 3	< 7	< 3	< 5	< 2	< 2	< 31	< 15
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-20	01/01/09 - 04/02/09	< 4	< 4	< 8	< 5	< 8	< 3	< 8	< 3	< 4	< 86	< 37
	04/02/09 - 07/02/09	< 2	< 6	< 15	< 2	< 8	< 4	< 10	< 3	< 3	< 574	< 321
	07/02/09 - 10/01/09	< 3	< 5	< 13	< 2	< 7	< 5	< 8	< 3	< 3	< 613	< 221
	10/01/09 - 12/31/09	< 4	< 4	< 10	< 3	< 10	< 5	< 7	< 5	< 4	< 52	< 24
	MEAN	-	-	-	-	-	-	-	-	-	-	-
BD-21	01/01/09 - 04/02/09	< 3	< 2	< 8	< 3	< 4	< 4	< 5	< 3	< 2	< 73	< 27
	04/02/09 - 07/02/09	< 4	< 4	< 20	< 4	< 8	< 6	< 10	< 3	< 3	< 824	< 214
	07/02/09 - 10/01/09	< 3	< 6	< 25	< 5	< 10	< 7	< 13	< 3	< 4	< 782	< 338
	10/01/09 - 12/31/09	< 3	< 4	< 2	< 2	< 6	< 4	< 5	< 2	< 3	< 20	< 9

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009

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

COLLECTION PERIOD	GROUP I					GROUP II				GROUP III	
	BD-06	BD-19		BD-20		BD-21	BD-02	BD-04		BD-05	BD-03	
01/01/09 - 01/08/09	< 56	< 56		< 56		< 56	< 30	< 56		< 56	< 56	
01/08/09 - 01/15/09	< 17	< 17		< 17		< 17	< 17	< 16		< 17	< 17	
01/15/09 - 01/22/09	< 64	< 57		< 57		< 57	< 64	< 64		< 64	< 35	
01/22/09 - 01/29/09	< 29	< 30		< 30		< 30	< 27	< 27		< 27	< 27	
01/29/09 - 02/05/09	< 37	< 32		< 33		< 33	< 37	< 22		< 36	< 37	
02/05/09 - 02/12/09	< 42	< 42		< 42		< 41	< 41	< 41		< 41	< 41	
02/12/09 - 02/19/09	< 42	< 38		< 38		< 38	< 42	< 42		< 23	< 42	
02/19/09 - 02/26/09	< 31	< 31		< 31		< 31	< 43	< 43		< 43	< 43	
02/26/09 - 03/05/09	< 26	< 60		< 60		< 60	< 39	< 39		< 39	< 39	
03/05/09 - 03/12/09	< 29	< 34	(1)	< 29	(1)	< 29	< 23	< 23		< 23	< 23	
03/12/09 - 03/19/09	< 42	< 34		< 45		< 43	< 41	< 41		< 41	< 41	
03/19/09 - 03/26/09	< 24	< 28	(1)	< 25		< 25	< 25	< 25		< 25	< 25	
03/26/09 - 04/02/09	< 69	< 69	(1)	< 30		< 70	< 42	< 42		< 42	< 42	
04/02/09 - 04/09/09	< 51	< 51		< 50		< 52	< 44	< 44		< 44	< 44	
04/09/09 - 04/16/09	< 48	< 48		< 48		< 20	< 31	< 31		< 31	< 31	
04/16/09 - 04/23/09	< 38	< 38		< 38		< 38	< 42	< 42		< 43	< 42	
04/23/09 - 04/30/09	< 67	< 58		< 58		< 58	< 37	< 67		< 67	< 67	
04/30/09 - 05/07/09	< 63	< 61		< 61		< 61	< 48	< 45		< 45	< 48	
05/07/09 - 05/14/09	< 57	< 68	(1)	< 65		< 65	< 31	< 68	(1)	< 57	< 31	
05/14/09 - 05/21/09	< 66	< 66		< 66		< 66	< 56	< 56		< 56	< 56	
05/21/09 - 05/28/09	< 52	< 68		< 68		< 68	< 52	< 26		< 52	< 52	
05/28/09 - 06/04/09	< 37	< 37		< 37		< 37	< 26	< 26		< 26	< 26	
06/04/09 - 06/11/09	< 51	< 51		< 48		< 48	< 48	< 46		< 31	< 48	
06/11/09 - 06/18/09	< 62	< 63		< 63		< 63	< 54	< 54		< 54	< 54	
06/18/09 - 06/25/09	< 28	< 68		< 68		< 68	< 65	< 65		< 68	< 65	
06/25/09 - 07/02/09	< 61	< 61		< 61		< 33	< 44	< 44		< 61	< 44	
07/02/09 - 07/09/09	< 69	< 38		< 69		< 70	< 69	< 70		< 69	< 70	
07/09/09 - 07/16/09	< 50	< 50		< 50		< 37	< 31	< 31		< 13	< 31	
07/16/09 - 07/23/09	< 44	< 44		< 27		< 45	< 48	< 48		< 46	< 48	
07/23/09 - 07/30/09	< 26	< 26		< 26		< 26	< 13	< 13		< 13	< 13	
07/30/09 - 08/06/09	< 52	< 52		< 50		< 52	< 41	< 41		< 41	< 41	
08/06/09 - 08/13/09	< 28	< 28		< 28		< 28	< 26	< 26		< 26	< 26	
08/13/09 - 08/20/09	< 24	< 24		< 24		< 24	< 20	< 46		< 46	< 46	
08/20/09 - 08/27/09	< 44	< 46		< 46		< 46	< 33	< 33		< 33	< 33	
08/27/09 - 09/03/09	< 61	< 61		< 61		< 61	< 59	< 55		< 59	< 59	
09/03/09 - 09/10/09	< 25	< 25		< 25		< 26	< 21	< 21		< 21	< 21	
09/10/09 - 09/17/09	< 45	< 45		< 45		< 45	< 64	< 64		< 64	< 64	
09/17/09 - 09/24/09	< 50	< 50		< 50		< 50	< 46	< 46		< 46	< 46	
09/24/09 - 10/01/09	< 68	< 68		< 68		< 68	< 65	< 66		< 28	< 66	
10/01/09 - 10/08/09	< 35	< 35		< 35		< 35	< 20	< 21		< 21	< 20	
10/08/09 - 10/15/09	< 27	< 46		< 46		< 46	< 63	< 63		< 64	< 63	
10/15/09 - 10/22/09	< 50	< 50		< 50		< 50	< 49	< 49		< 49	< 49	
10/22/09 - 10/29/09	< 67	< 37		< 67		< 67	< 69	< 70		< 67	< 70	
10/29/09 - 11/05/09	< 67	< 67		< 67		(1)	< 50	< 51		< 51	< 51	
11/05/09 - 11/12/09	< 65	< 65		< 39		< 65	< 44	< 44		< 70	< 44	
11/12/09 - 11/19/09	< 46	< 46		< 46		< 46	< 68	< 68		< 68	< 68	
11/19/09 - 11/25/09	< 60	< 60		< 60		< 26	< 50	< 50		< 60	< 50	
11/25/09 - 12/03/09	< 50	< 50		< 50		< 50	< 67	< 67		< 67	(1)	< 67
12/03/09 - 12/10/09	< 55	< 68		< 68		< 68	< 30	< 55		< 55	< 56	
12/10/09 - 12/17/09	< 65	< 65		< 66		< 66	< 62	< 62		< 62	< 62	
12/17/09 - 12/23/09	< 68	< 68		< 68		< 68	< 45	< 45		< 46	< 57	
12/23/09 - 12/31/09	< 53	< 61		< 61		< 61	< 29	< 52		< 52	< 52	(1)
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, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

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

TABLE C-VIII.2 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/01/09	< 5	< 6	< 12	< 5	< 15	< 7	< 12	< 5	< 5	< 53	< 13
	02/05/09	< 2	< 3	< 7	< 3	< 6	< 3	< 5	< 2	< 3	< 23	< 7
	03/05/09	< 6	< 7	< 18	< 9	< 18	< 7	< 13	< 6	< 6	< 34	< 8
	04/02/09	< 6	< 6	< 16	< 6	< 12	< 6	< 12	< 4	< 6	< 48	< 14
	05/07/09	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 1	< 2	< 38	< 12
	05/21/09	< 5	< 6	< 14	< 6	< 13	< 7	< 11	< 5	< 6	< 50	< 9
	06/04/09	< 4	< 4	< 10	< 4	< 9	< 4	< 8	< 4	< 4	< 28	< 8
	06/18/09	< 4	< 4	< 10	< 4	< 10	< 4	< 8	< 4	< 4	< 36	< 11
	07/02/09	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 2	< 2	< 28	< 8
	07/16/09	< 3	< 4	< 11	< 4	< 9	< 5	< 9	< 3	< 4	< 22	< 8
	07/30/09	< 5	< 5	< 14	< 4	< 11	< 5	< 9	< 4	< 4	< 40	< 12
	08/13/09	< 8	< 8	< 20	< 11	< 18	< 8	< 12	< 6	< 8	< 50	< 13
	08/27/09	< 4	< 4	< 10	< 5	< 10	< 5	< 8	< 4	< 5	< 20	< 6
	09/10/09	< 5	< 5	< 11	< 6	< 12	< 4	< 8	< 4	< 5	< 20	< 6
	09/24/09	< 4	< 4	< 10	< 4	< 9	< 4	< 8	< 4	< 4	< 21	< 6
	10/08/09	< 6	< 6	< 13	< 5	< 11	< 7	< 9	< 4	< 5	< 32	< 11
	10/22/09	< 5	< 5	< 11	< 5	< 12	< 5	< 9	< 4	< 5	< 24	< 6
	11/05/09	< 7	< 7	< 16	< 5	< 16	< 7	< 11	< 6	< 7	< 44	< 12
	12/03/09	< 3	< 4	< 8	< 4	< 8	< 4	< 6	< 3	< 3	< 28	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-VIII.2 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	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	01/01/09	< 4	< 5	< 13	< 5	< 10	< 5	< 8	< 4	< 4	< 43	< 12
	02/05/09	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 19	< 6
	03/05/09	< 7	< 7	< 17	< 7	< 17	< 7	< 13	< 7	< 6	< 48	< 11
	04/02/09	< 4	< 5	< 13	< 5	< 11	< 5	< 9	< 4	< 5	< 38	< 13
	05/07/09	< 2	< 3	< 7	< 2	< 5	< 3	< 4	< 2	< 2	< 43	< 14
	05/20/09	< 7	< 8	< 15	< 6	< 15	< 8	< 10	< 6	< 7	< 54	< 15
	06/04/09	< 3	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 3	< 22	< 6
	06/18/09	< 4	< 4	< 12	< 4	< 10	< 5	< 8	< 4	< 4	< 40	< 10
	07/02/09	< 4	< 5	< 11	< 4	< 9	< 5	< 9	< 4	< 4	< 39	< 11
	07/16/09	< 4	< 4	< 11	< 4	< 8	< 4	< 8	< 3	< 4	< 25	< 9
	07/30/09	< 4	< 5	< 12	< 5	< 10	< 5	< 9	< 4	< 4	< 43	< 10
	08/12/09	< 4	< 4	< 9	< 3	< 9	< 4	< 5	< 2	< 3	< 24	< 11
	08/27/09	< 6	< 6	< 15	< 7	< 14	< 7	< 10	< 6	< 7	< 30	< 9
	09/10/09	< 6	< 7	< 15	< 7	< 17	< 7	< 12	< 6	< 7	< 28	< 10
	09/24/09	< 5	< 5	< 11	< 5	< 12	< 6	< 10	< 5	< 6	< 30	< 7
	10/08/09	< 4	< 6	< 14	< 6	< 12	< 7	< 11	< 5	< 5	< 35	< 13
	10/21/09	< 4	< 5	< 10	< 5	< 10	< 4	< 8	< 4	< 5	< 22	< 7
	11/05/09	< 7	< 8	< 18	< 10	< 15	< 8	< 15	< 7	< 8	< 46	< 14
	12/03/09	< 5	< 5	< 14	< 5	< 12	< 6	< 10	< 5	< 5	< 45	< 13
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IX.1

CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009

RESULTS IN UNITS OF PC/KG WET ± 2 SIGMA

STC	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	09/12/09	Cabbage	< 15	< 20	< 39	< 19	< 45	< 17	< 40	< 16	< 15	< 99	< 46
	09/12/09	Onions	< 20	< 23	< 59	< 28	< 47	< 30	< 20	< 20	< 28	< 148	< 40
	MEAN		-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 1	09/12/09	Broccoli	< 20	< 23	< 50	< 17	< 48	< 15	< 42	< 17	< 17	< 88	< 28
	09/12/09	Cabbage	< 20	< 21	< 57	< 18	< 47	< 23	< 37	< 19	< 26	< 111	< 22
	MEAN		-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 2	09/18/09	Cabbage	< 16	< 17	< 39	< 18	< 31	< 21	< 29	< 15	< 15	< 94	< 32
	09/18/09	Sweet potatoes	< 15	< 15	< 43	< 17	< 31	< 14	< 28	< 14	< 16	< 83	< 39
	MEAN		-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 3	09/18/09	Beets	< 15	< 16	< 34	< 18	< 33	< 20	< 31	< 13	< 15	< 108	< 18
	09/18/09	Cabbage	< 16	< 18	< 40	< 17	< 37	< 24	< 31	< 16	< 21	< 109	< 34
	MEAN		-	-	-	-	-	-	-	-	-	-	-
BD-QUAD 4	09/12/09	Cabbage	< 20	< 17	< 39	< 18	< 48	< 20	< 26	< 17	< 21	< 96	< 23
	09/12/09	Onions	< 13	< 14	< 32	< 10	< 34	< 12	< 27	< 12	< 13	< 72	< 23
	MEAN		-	-	-	-	-	-	-	-	-	-	-

TABLE C-X.1 QUARTERLY TLD RESULTS FOR BRAIDWOOD STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
BD-02-1	19.0 ± 2.8	20	19	17	20
BD-02-2	19.0 ± 3.7	20	17	18	21
BD-03-1	20.5 ± 6.2	20	18	19	25
BD-03-2	21.0 ± 6.7	20	17	22	25
BD-04-1	18.8 ± 2.5	20	19	17	19
BD-04-2	18.8 ± 4.4	21	16	18	20
BD-05-1	20.0 ± 4.3	21	17	20	22
BD-05-2	19.3 ± 3.4	20	17	19	21
BD-06-1	18.3 ± 4.7	20	15	18	20
BD-06-2	18.8 ± 4.1	20	17	17	21
BD-19-1	21.8 ± 4.4	21	20	21	25
BD-19-2	20.5 ± 4.8	20	19	19	24
BD-20-1	20.8 ± 4.4	24	20	19	20
BD-20-2	20.5 ± 3.5	21	21	18	22
BD-21-1	18.8 ± 4.4	20	16	18	21
BD-21-2	20.3 ± 1.9	20	19	21	21
BD-101-3	19.8 ± 5.0	21	16	21	21
BD-101-4	21.3 ± 5.5	24	20	18	23
BD-102-1	20.0 ± 4.3	21	17	20	22
BD-102-2	20.3 ± 4.4	21	17	21	22
BD-103-1	21.5 ± 5.3	24	18	21	23
BD-103-2	21.3 ± 1.9	22	20	21	22
BD-104-1	18.3 ± 1.9	19	18	17	19
BD-104-2	17.8 ± 2.5	18	16	18	19
BD-105-1	18.3 ± 3.0	19	17	17	20
BD-105-2	19.5 ± 2.0	19	19	21	19
BD-106-1	19.3 ± 4.4	20	17	18	22
BD-106-2	19.3 ± 2.5	19	19	18	21
BD-107-1	20.0 ± 5.9	24	19	17	20
BD-107-2	19.0 ± 4.0	20	16	20	20
BD-108-1	18.5 ± 1.2	19	19	18	18
BD-108-2	19.8 ± 2.5	20	20	18	21
BD-109-1	21.0 ± 3.7	22	19	20	23
BD-109-2	22.3 ± 2.5	22	21	22	24
BD-110-1	20.3 ± 2.5	22	20	19	20
BD-110-2	19.8 ± 3.4	22	20	18	19
BD-112-1	20.0 ± 2.8	21	20	18	21
BD-112-2	19.5 ± 3.5	21	17	20	20
BD-114-1	20.3 ± 4.7	22	17	20	22
BD-114-2	20.3 ± 5.0	21	17	20	23
BD-115-1	20.3 ± 1.9	20	19	21	21
BD-115-2	19.3 ± 6.0	20	16	18	23
BD-116-1	20.8 ± 2.5	21	21	19	22
BD-116-2	20.3 ± 2.5	20	19	20	22
BD-201-1	24.8 ± 4.1	23	23	26	27
BD-201-2	21.5 ± 5.8	24	19	19	24
BD-202-1	20.5 ± 1.2	21	20	21	20
BD-202-2	19.8 ± 3.4	22	19	18	20
BD-203-1	20.0 ± 2.3	21	19	19	21
BD-203-2	18.8 ± 3.0	20	17	18	20
BD-204-1	19.0 ± 2.8	20	17	20	19

TABLE C-X.1 QUARTERLY TLD RESULTS FOR BRAIDWOOD STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
BD-204-2	18.8 ± 3.0	20	18	17	20
BD-205-1	17.8 ± 2.5	18	16	18	19
BD-205-2	18.8 ± 1.9	19	18	20	18
BD-206-1	23.0 ± 3.7	25	22	21	24
BD-206-2	20.0 ± 1.6	20	21	19	20
BD-207-1	20.3 ± 6.8	19	17	20	25
BD-207-2	18.8 ± 3.4	21	17	18	19
BD-208-1	19.5 ± 3.8	20	18	18	22
BD-208-2	20.0 ± 0.0	20	20	20	20
BD-209-1	18.0 ± 21	23	22	25	22
BD-209-2	25.0 ± 2.3	24	24	26	26
BD-210-1	22.8 ± 6.8	23	18	24	26
BD-210-2	19.5 ± 2.6	20	18	19	21
BD-211-1	23.8 ± 1.9	24	23	23	25
BD-211-2	24.5 ± 2.6	24	23	26	25
BD-212-3	20.3 ± 5.3	20	18	19	24
BD-212-4	24.5 ± 3.5	24	24 (1)	23	27
BD-213-3	20.8 ± 3.4	23	20	19	21
BD-213-4	20.0 ± 1.6	20	20	19	21
BD-214-1	19.8 ± 2.5	20	20	18	21
BD-214-2	21.8 ± 1.9	22	21	21	23
BD-215-1	19.3 ± 2.5	21	19	18	19
BD-215-2	19.0 ± 3.7	20	17	18	21
BD-216-1	21.3 ± 5.7	21	18	21	25
BD-216-2	21.8 ± 3.8	23	19	22	23
BD-111A-1	19.3 ± 1.9	20	19	18	20
BD-111A-2	20.8 ± 4.1	23	18	21	21
BD-113A-1	20.3 ± 5.0	21	20	17	23
BD-113A-2	20.5 ± 4.2	21	20	18	23

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-X.2 **MEAN QUARTLY TLD RESULTS FOR THE INNER RING, OUTER RING, OTHER AND CONTROL LOCATIONS FOR BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF MILLI-ROENTGENS/QUARTER

COLLECTION PERIOD	SITE BOUNDARY ± 2 S.D.	INTERMEDIATE DISTANCE	OTHER	CONTROL
JAN-MAR	20.9 ± 3.1	21.4 ± 3.7	20.6 ± 2.2	20.0 ± 0.0
APR-JUN	18.5 ± 3.1	19.5 ± 4.5	18.0 ± 3.6	17.5 ± 1.4
JUL-SEP	19.2 ± 3.0	20.4 ± 5.3	18.6 ± 2.7	20.5 ± 4.2
OCT-DEC	21.2 ± 3.1	22.1 ± 5.2	21.2 ± 3.3	25.0 ± 0.0

TABLE C-X.3 **SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
SITE BOUNDARY	128	16.0	24.0	19.9 ± 3.8
INTERMEDIATE DISTANCE	128	16.0	27.0	20.9 ± 5.1
OTHER	56	15.0	25.0	19.6 ± 4.0
CONTROL	8	17.0	25.0	20.8 ± 6.0

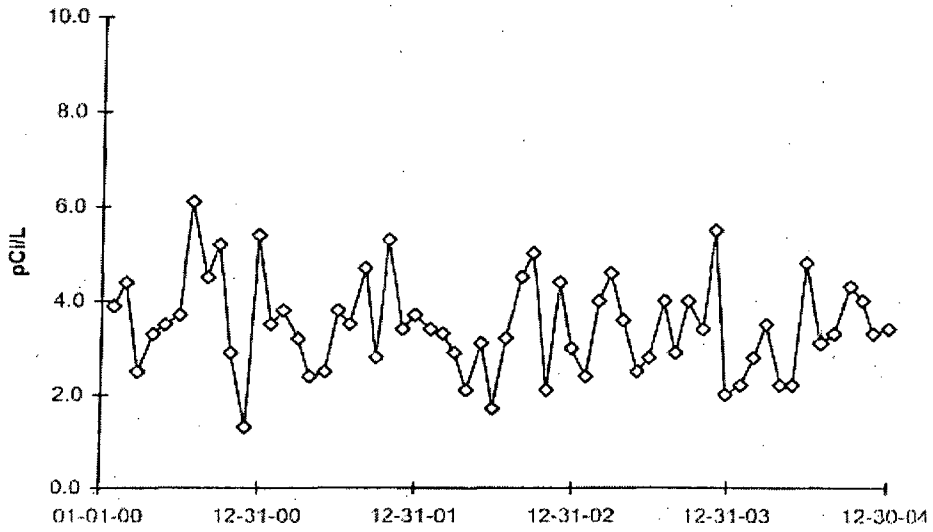
SITE BOUNDARY STATIONS - BD-101-3, BD-101-4, BD-102-1, BD-102-2, BD-103-1, BD-103-2, BD-104-1, BD-104-2, BD-105-1, BD-105-2, BD-106-1, BD-106-2, BD-107-1, BD-107-2, BD-108-1, BD-108-2, BD-109-1, BD-109-2, BD-110-1, BD-110-2, BD-111A-1, BD-111A-2, BD-112-1, BD-112-2, BD-113A-1, BD-113A-2, BD-114-1, BD-114-2,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

INTERMEDIATE DISTANCE 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

FIGURE C-1
Surface Water - Gross Beta - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2000 - 2004



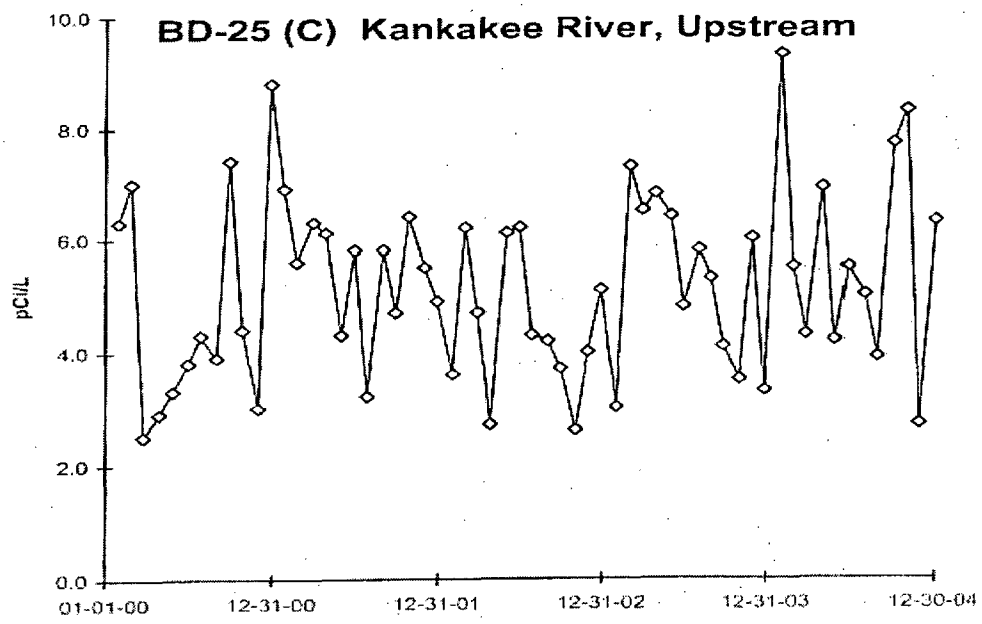
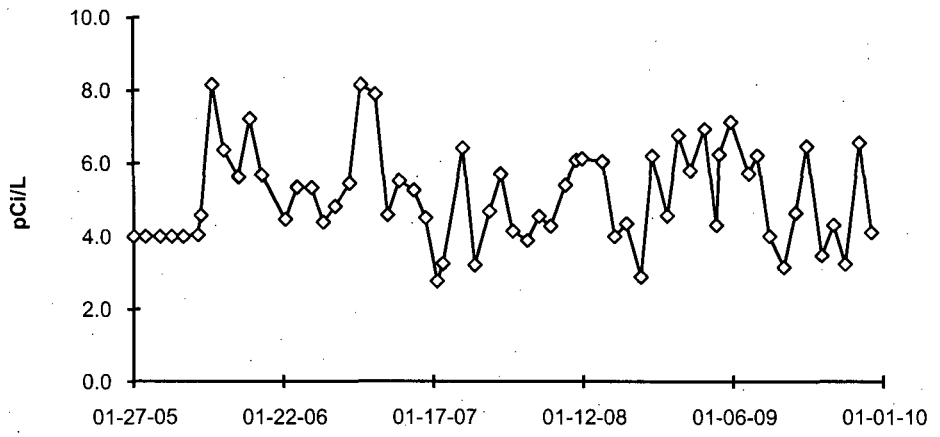
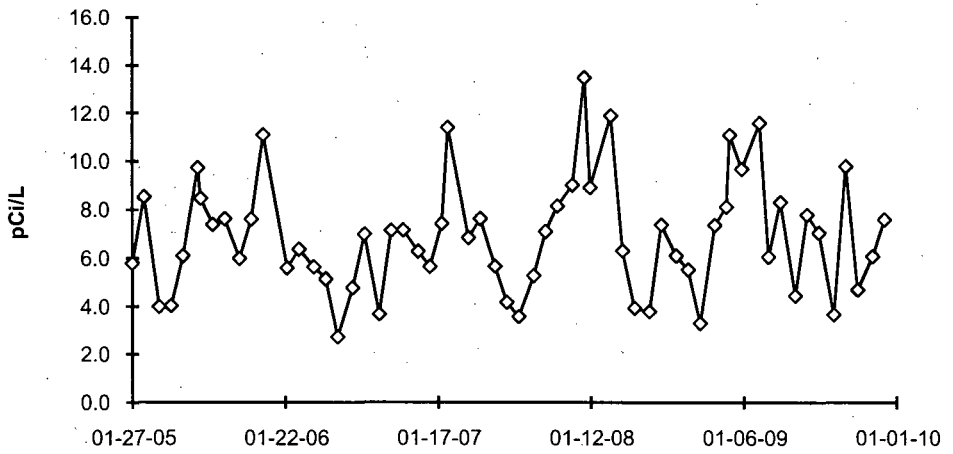


FIGURE C-1 (cont.)
Surface Water - Gross Beta - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-10 Kankaee River, Downstream



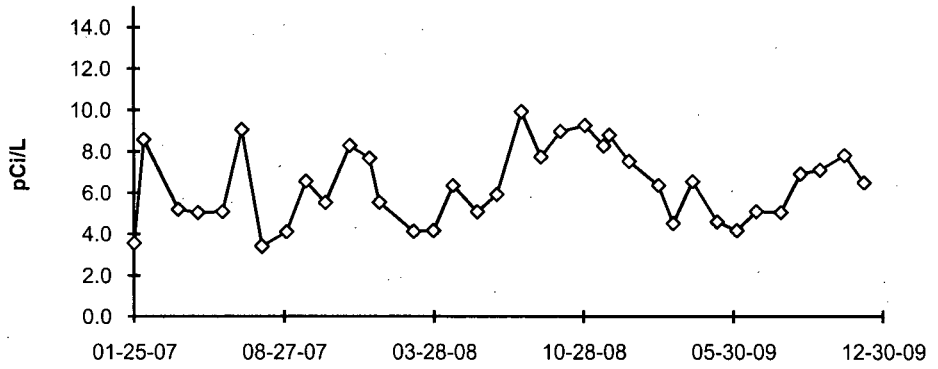
BD-25 (C) Kankakee River, Upstream



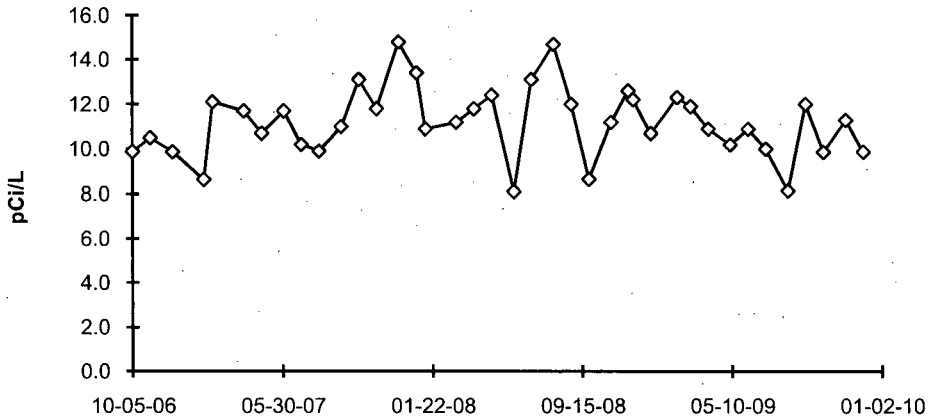
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

FIGURE C-2
Surface Water - Gross Beta - Stations BD-38 and BD-40 Collected in the Vicinity of Braidwood Station, 2007 - 2009

BD-38 Main Drainage Ditch



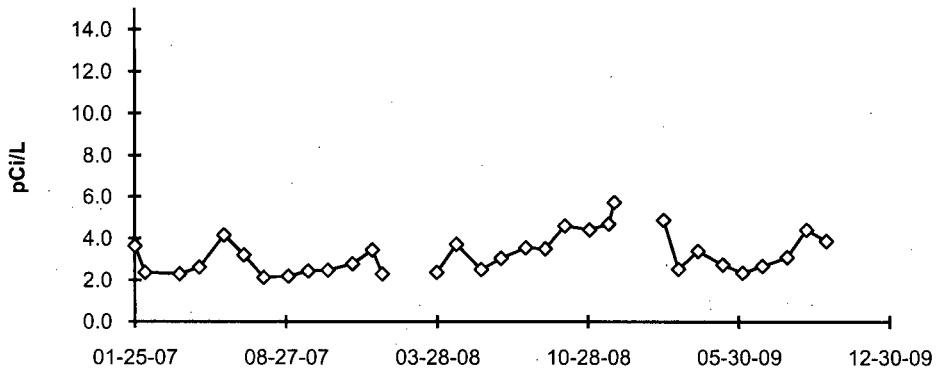
BD-40 Braidwood Station Cooling Lake



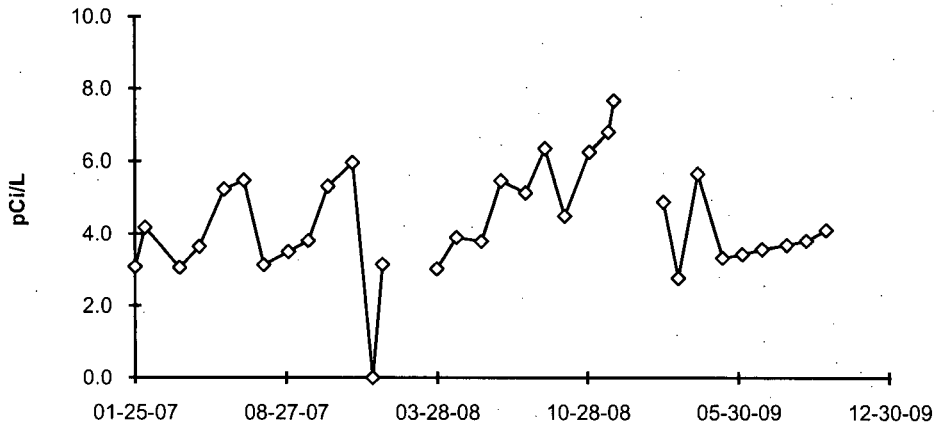
NEW STATION BD-40 ADDED ON 10/05/06
NEW STATION BD-38 ADDED ON 01/25/07

FIGURE C-3
Surface Water - Gross Beta - Stations BD-55 and BD-56 Collected in the Vicinity of Braidwood Station, 2007 - 2009

BD-55 North Pond Fatlan Site

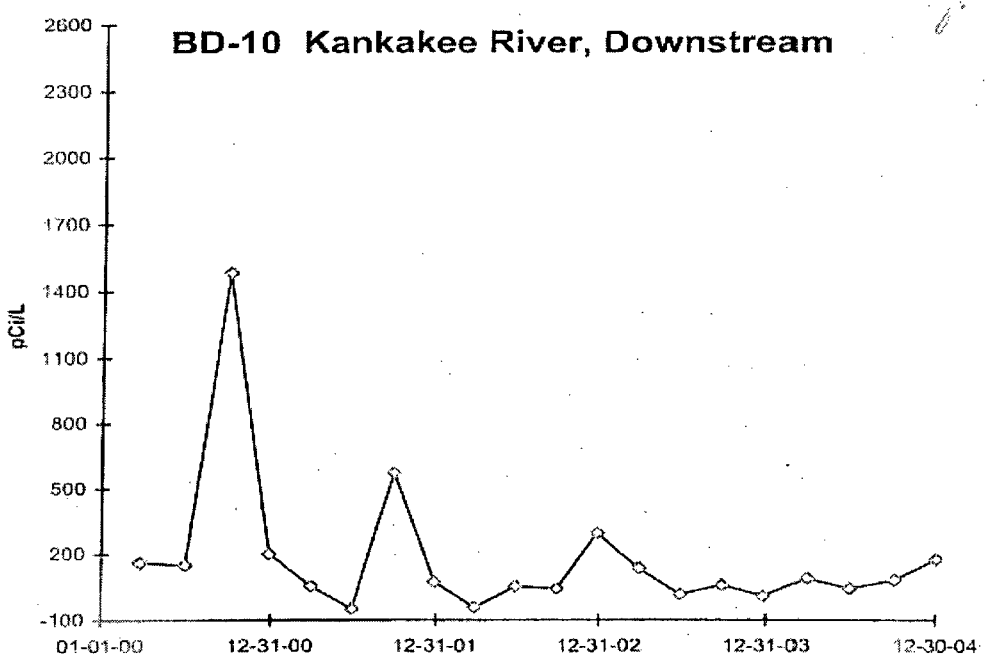


BD-56 South Pond Fatlan Site



NEW STATIONS BD-55 AND BD-56 ADDED ON 01/04/07

FIGURE C-4
Surface Water - Tritium - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2000 - 2004



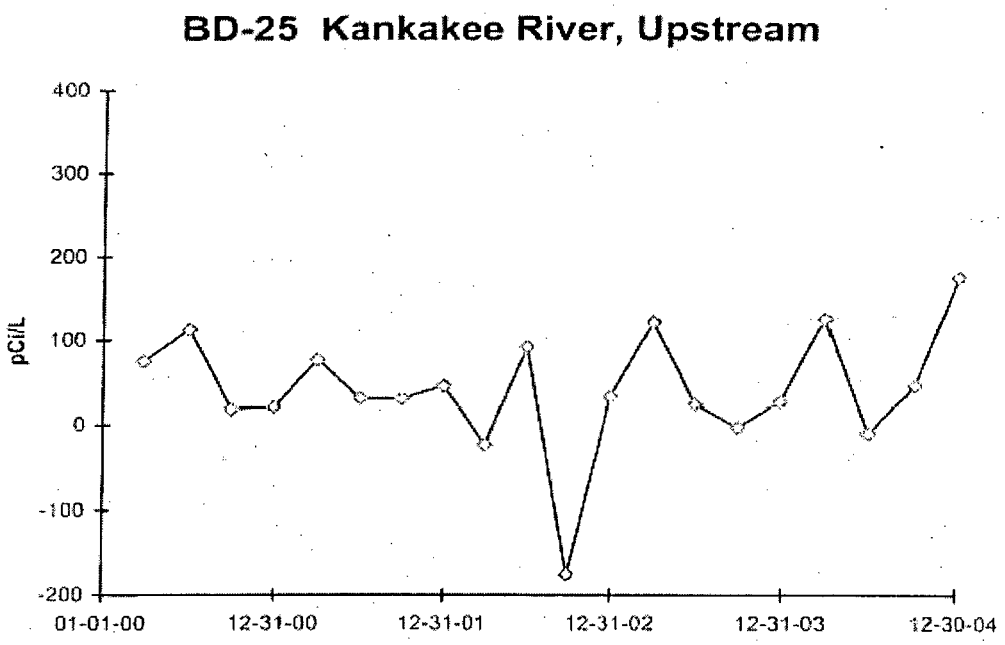
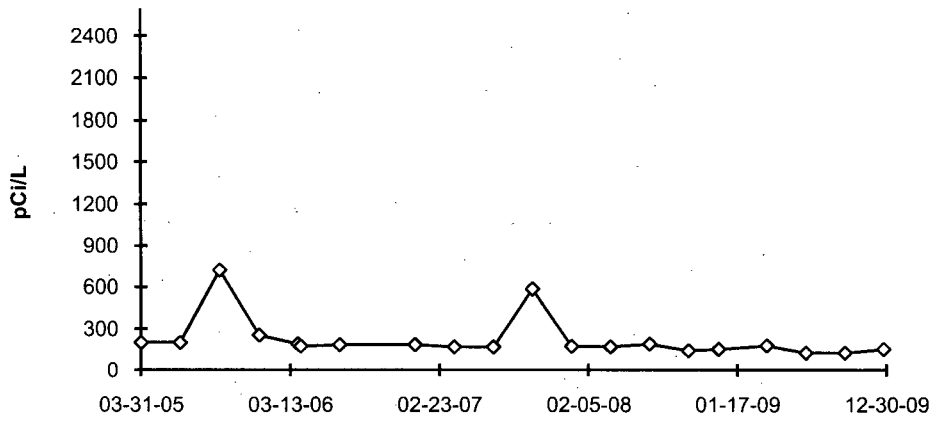
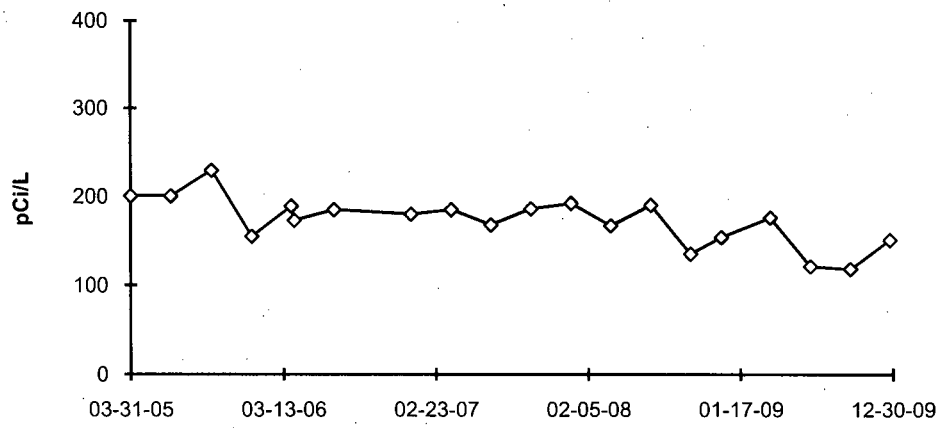


FIGURE C-4 (cont.)
Surface Water - Tritium - Stations BD-10 and BD-25 (C) Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-10 Kankakee River, Downstream



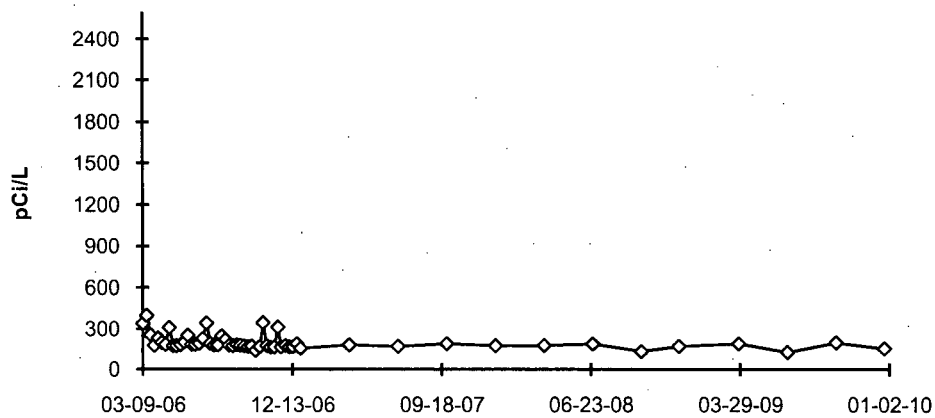
BD-25 (C) Kankakee River, Upstream



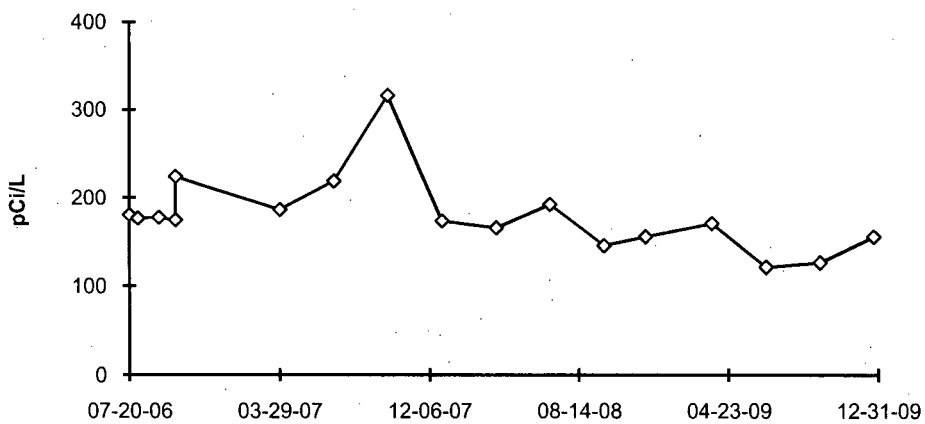
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JUNE 2005

FIGURE C-5
Surface Water - Tritium - Stations BD-38 and BD-40 Collected in the Vicinity of Braidwood Station, 2006 - 2009

BD-38 Main Drainage Ditch



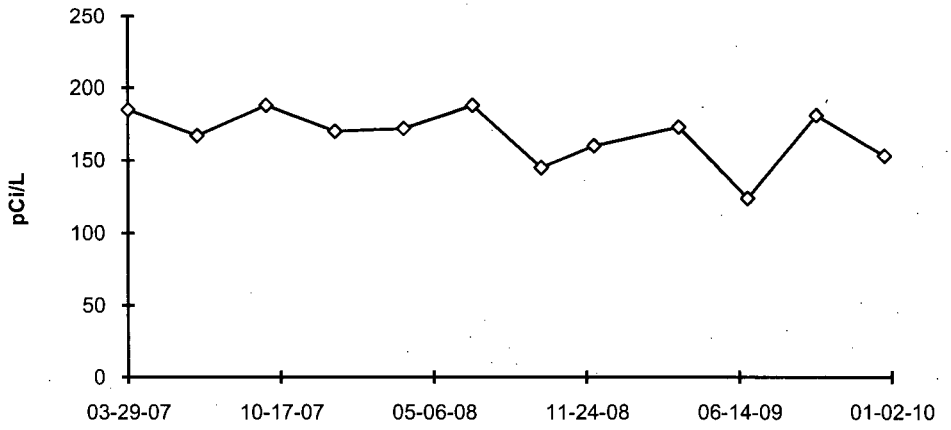
BD-40 Braidwood Station Cooling Lake



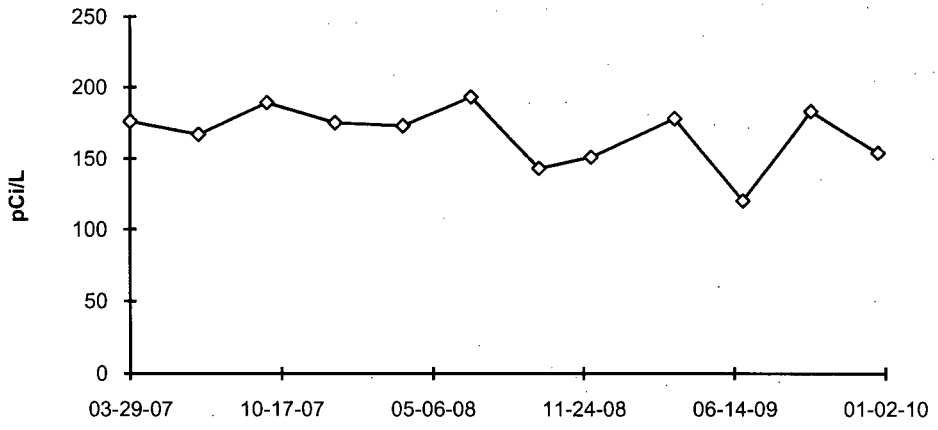
NEW STATIONS BD-38 AND BD-40 ADDED IN 2006

FIGURE C-6
Surface Water - Tritium - Stations BD-55 and BD-56 Collected in the Vicinity of Braidwood Station, 2007 - 2009

BD-55 North Pond Fatlan Site



BD-56 South Pond Fatlan Site



NEW STATIONS BD-55 AND BD-56 ADDED IN 2007

FIGURE C-7
Public Water - Gross Beta - Station BD-22
Collected in the Vicinity of Braidwood Station, 2000 - 2004

BD-22 Wilmington

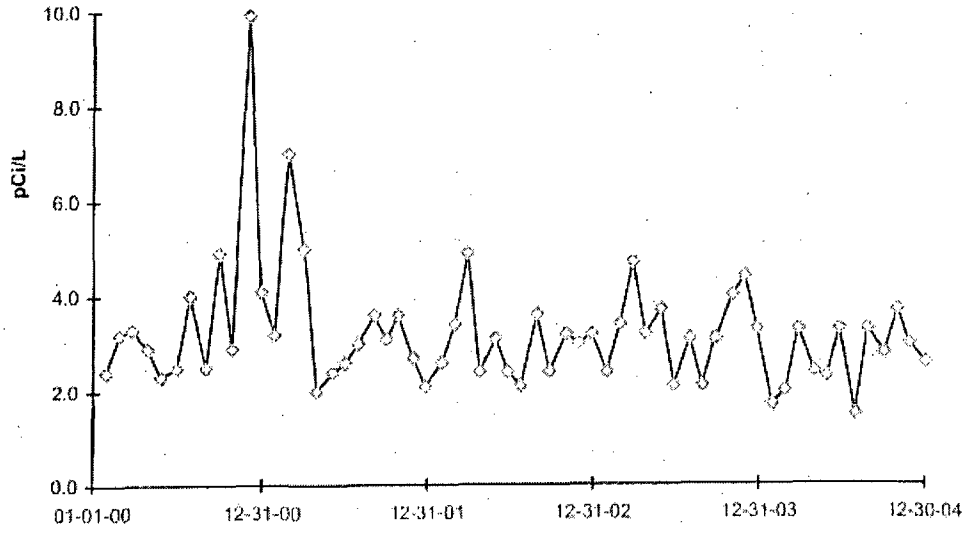
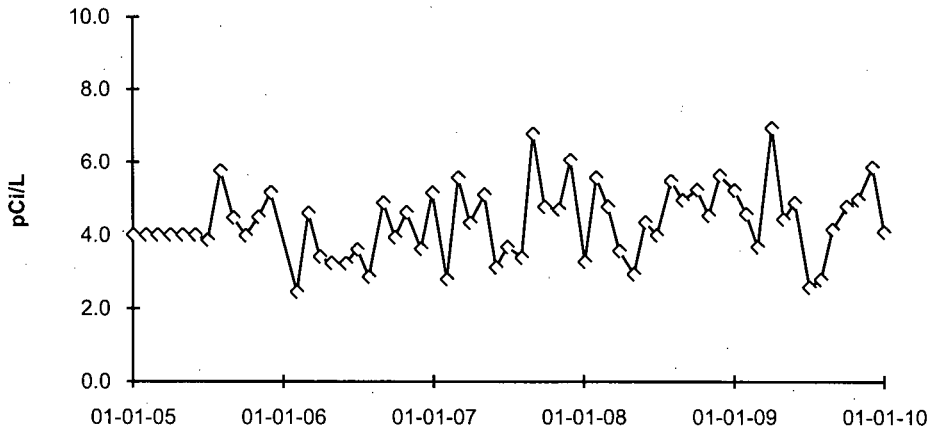


FIGURE C-7 (cont.)
Public Water - Gross Beta - Station BD-22
Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-22 Wilmington



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 - 2004

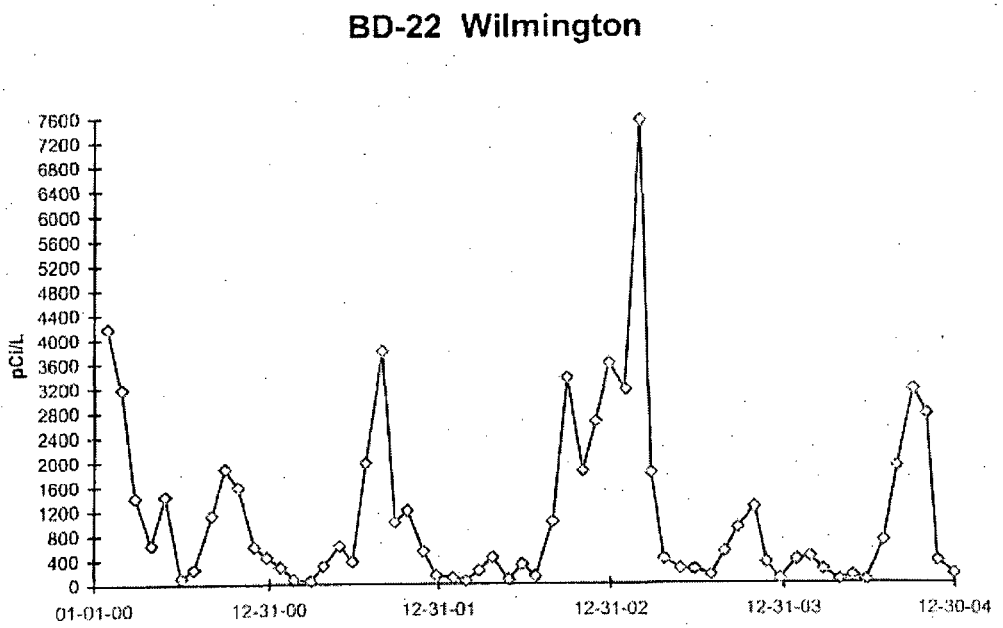
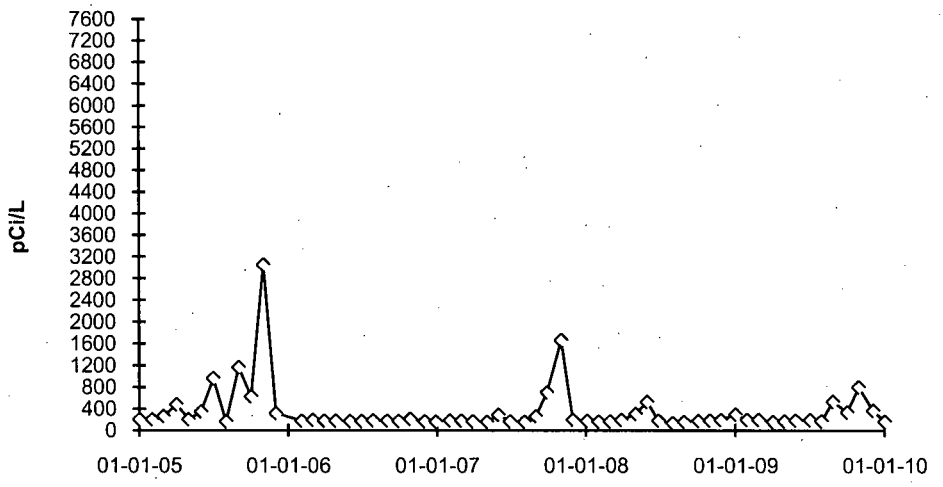


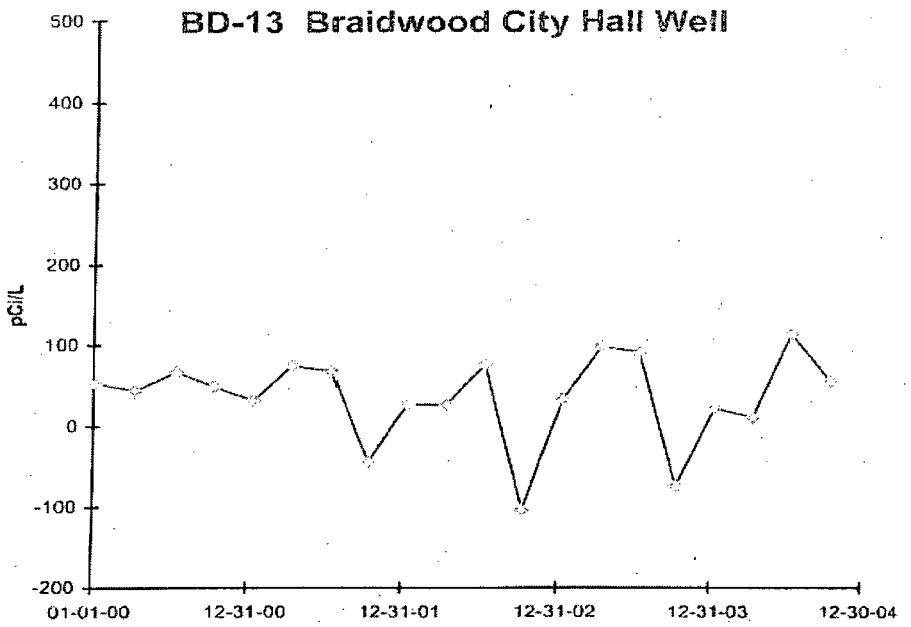
FIGURE C-8 (cont.)
Public Water - Tritium - Station BD-22
Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-22 Wilmington



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 - 2004



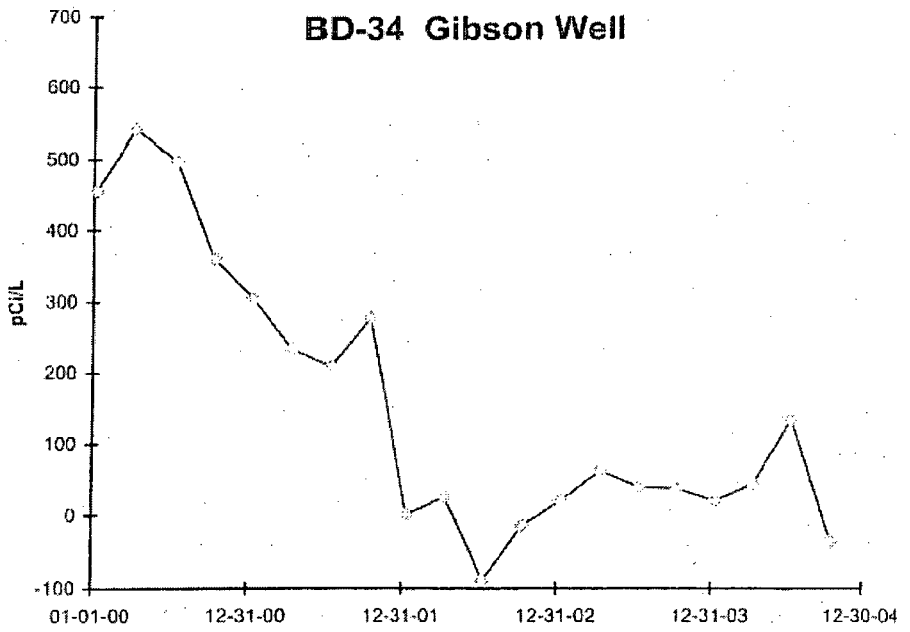
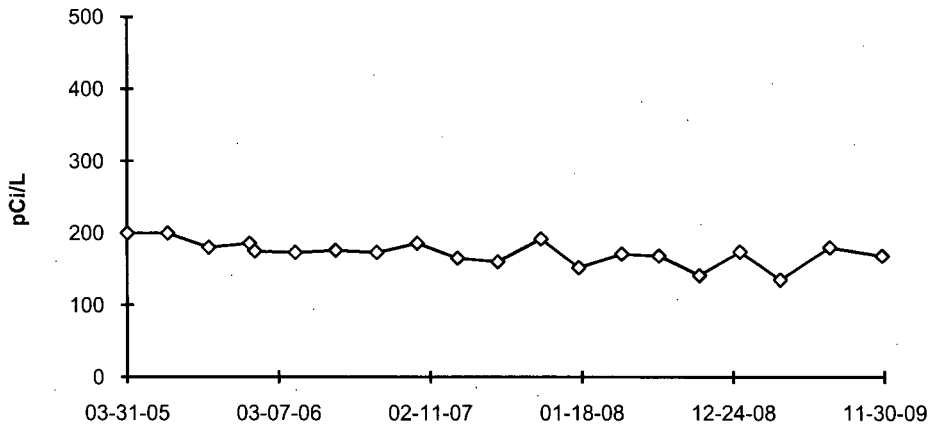
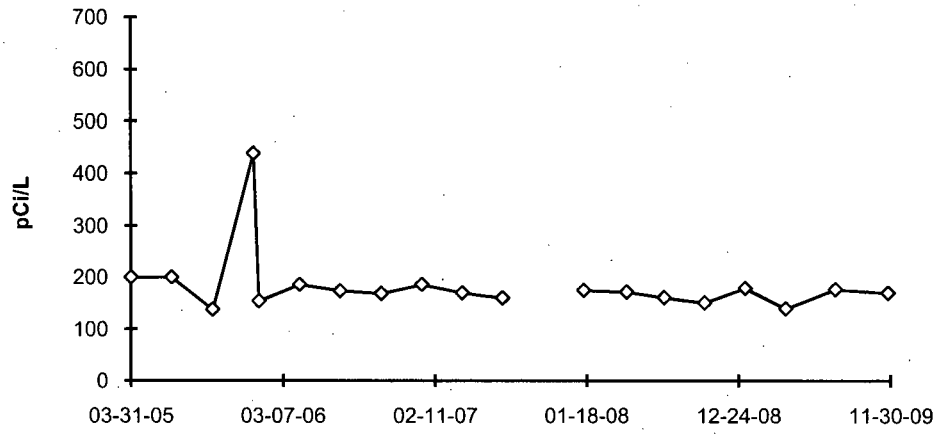


FIGURE C-9 (cont.)
Ground/Well Water - Tritium - Stations BD-13 and BD-34 Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-13 Braidwood City Hall Well

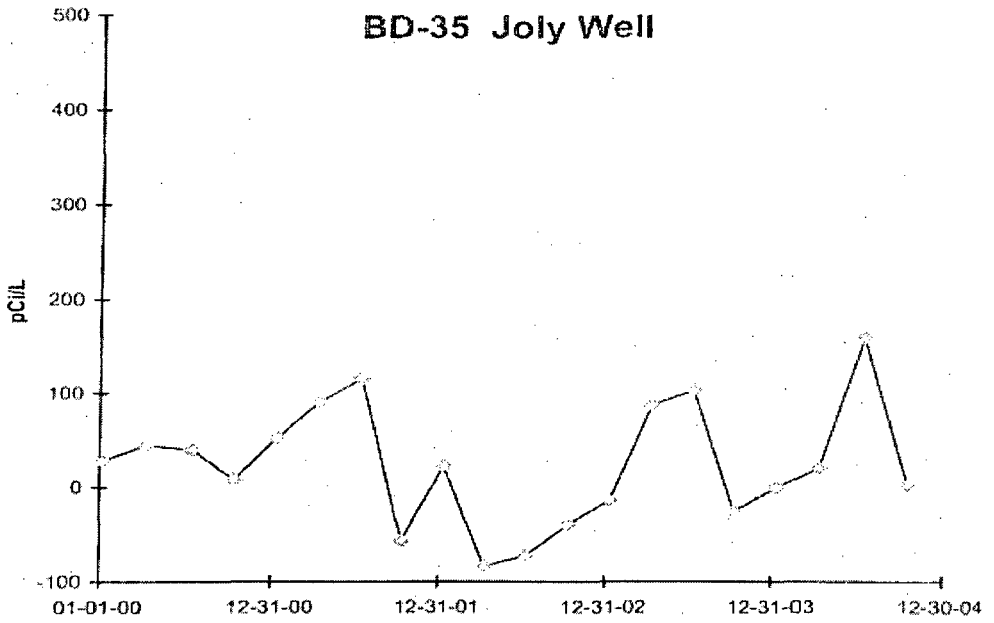


BD-34 Gibson Well



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

FIGURE C-10
Ground/Well Water - Tritium - Stations BD-35 and BD-36 Collected in the Vicinity of Braidwood Station, 2000 - 2004



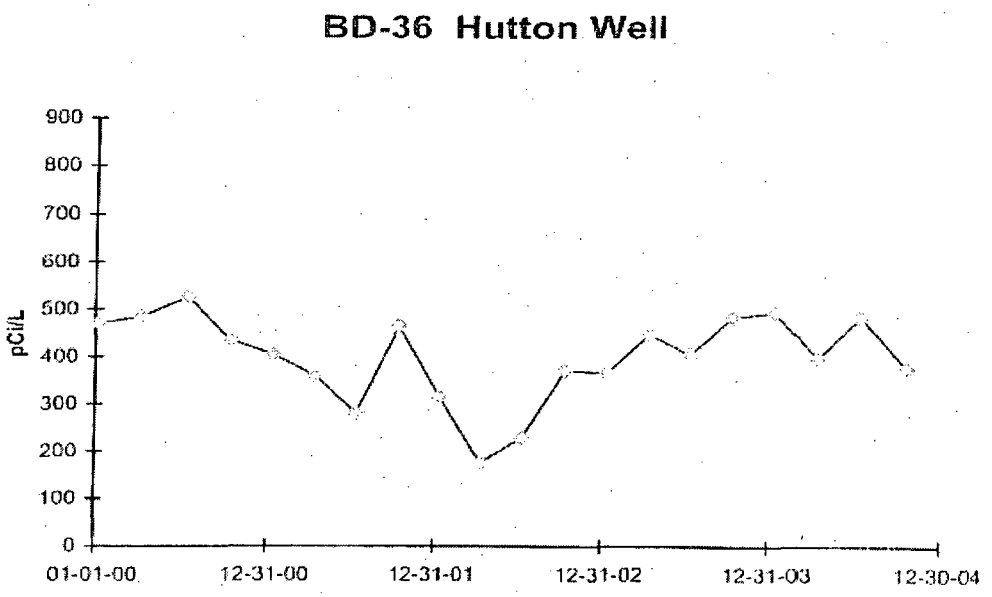
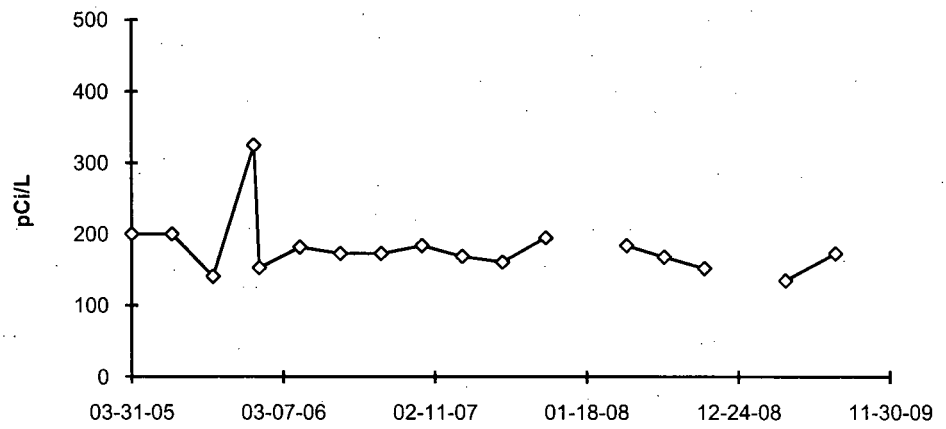
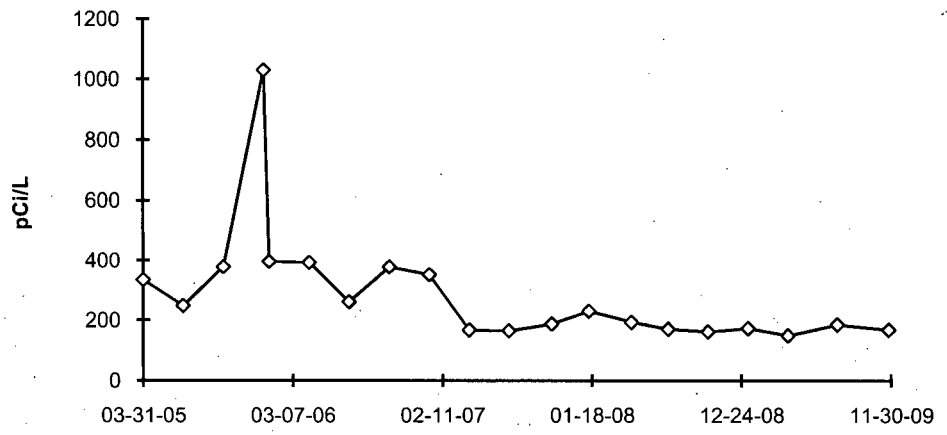


FIGURE C-10 (cont.)
Ground/Well Water - Tritium - Stations BD-35 and BD-36 Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-35 Joly Well



BD-36 Hutton Well



DUE TO VENDOR CHANGE, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE AND MDC VALUES JULY THROUGH DECEMBER

FIGURE C-11
Ground/Well Water - Tritium - Station BD-37
Collected in the Vicinity of Braidwood Station, 2000 - 2004

BD-37 Nurczyk Well

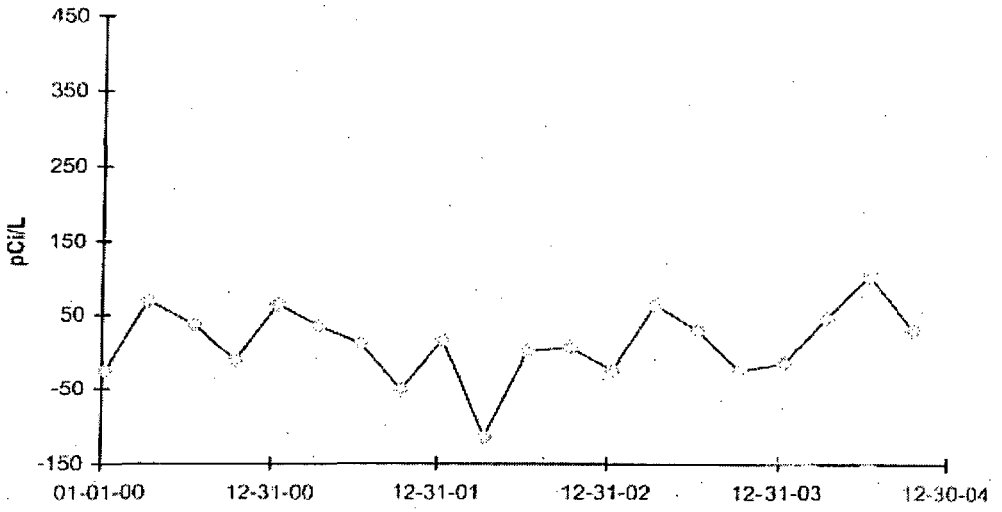
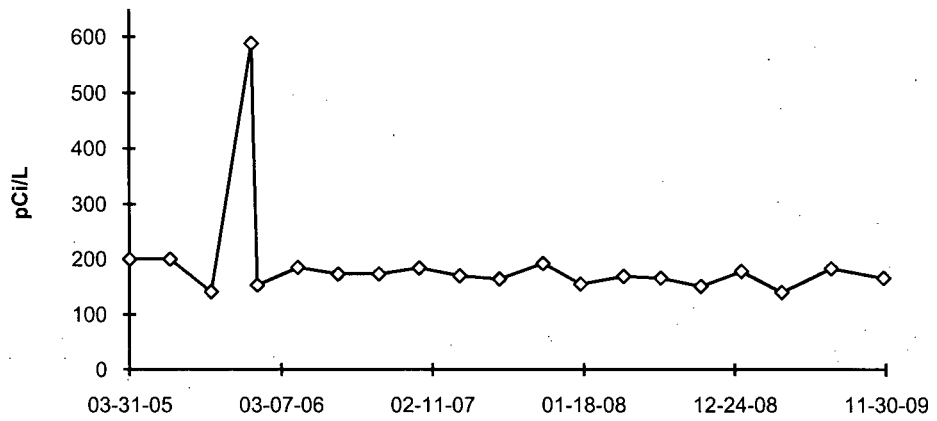


FIGURE C-11 (cont.)
Ground/Well Water - Tritium - Station BD-37
Collected in the Vicinity of Braidwood Station, 2005 - 2009

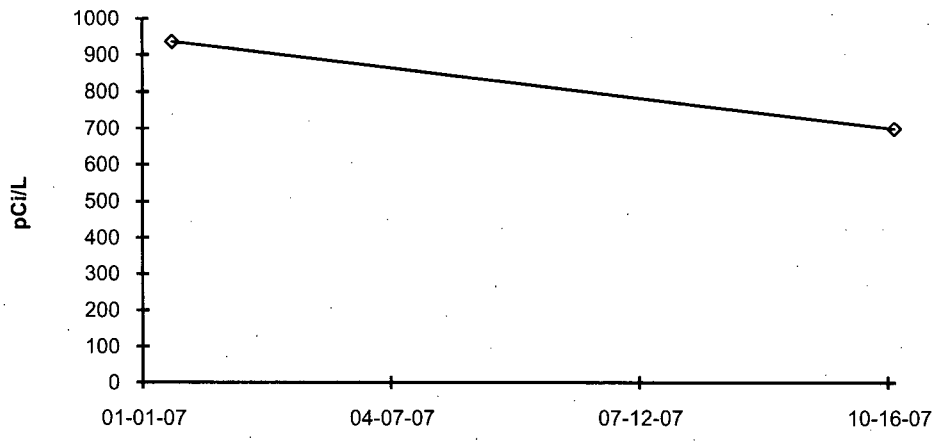
BD-37 Nurczyk Well



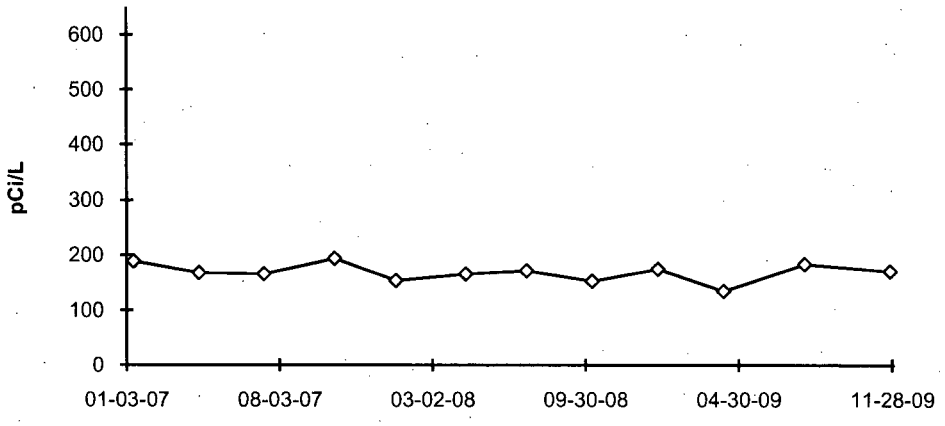
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE AND MDC VALUES JULY THROUGH DECEMBER

FIGURE C-12
Ground/Well Water - Tritium - Station BD-50 and BD-51 Collected in the Vicinity of Braidwood Station, 2007-2009

BD-50 Skole Well



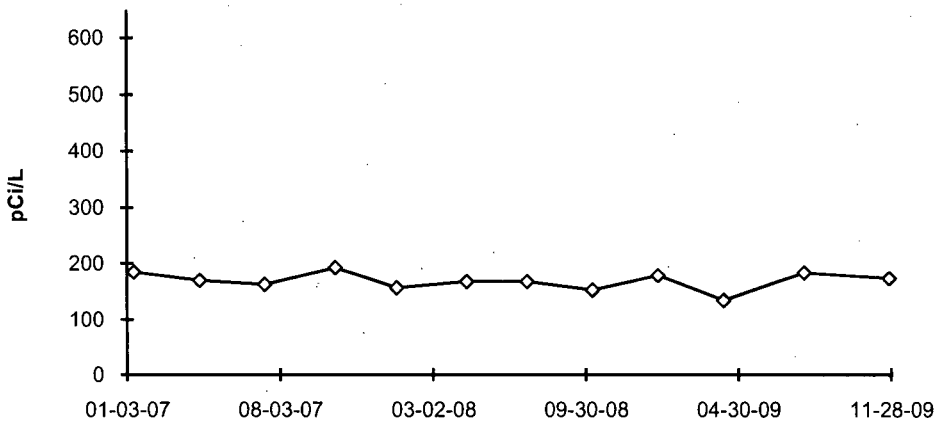
BD-51 Fatlan Well



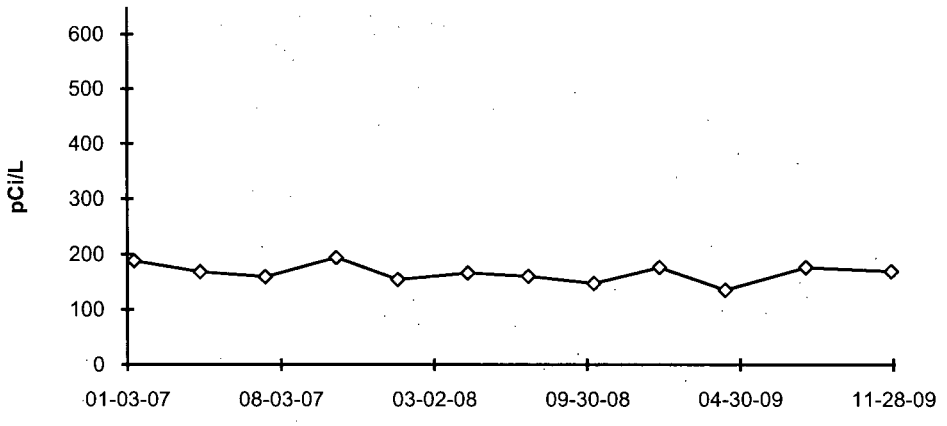
NEW STATIONS BD-50 AND BD-51 ADDED IN 2007
NEW STATION BD-50 DISCONTINUED 10/18/07

FIGURE C-13
Ground/Well Water - Tritium - Station BD-53 and BD-54 Collected in the Vicinity of Braidwood Station, 2007 - 2009

BD-53 Phelps Well



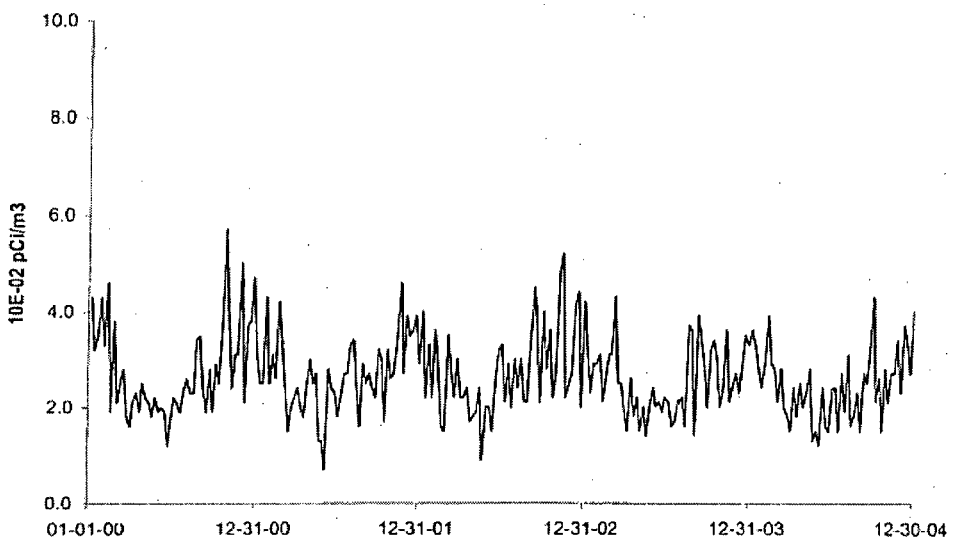
BD-54 Cash Well



NEW STATIONS BD-53 AND BD-54 ADDED IN 2007

FIGURE C-14
Air Particulates - Gross Beta- Stations BD-03 (C) and BD-06 Collected in the Vicinity of Braidwood Station, 2000 - 2004

BD-03 (C) County Line Road



BD-06 Godley

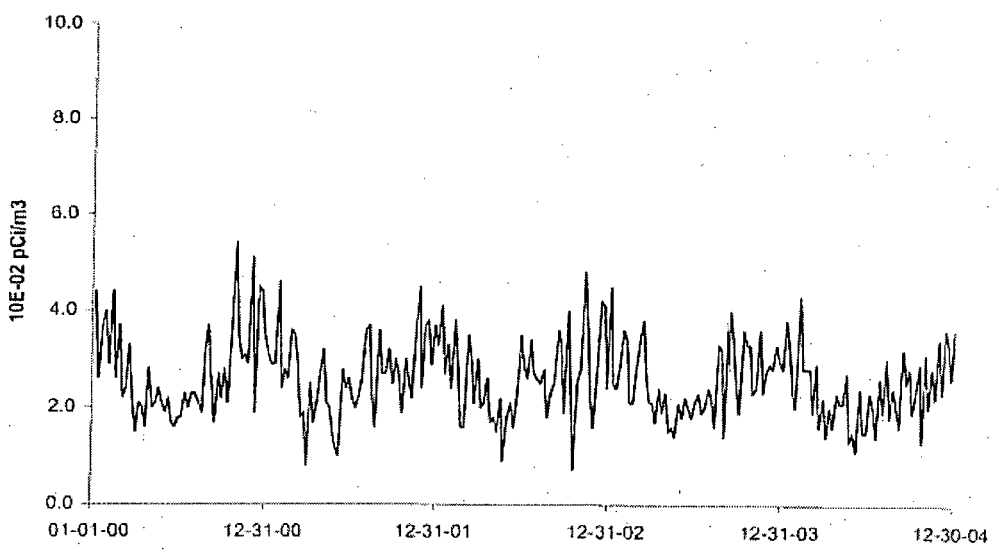
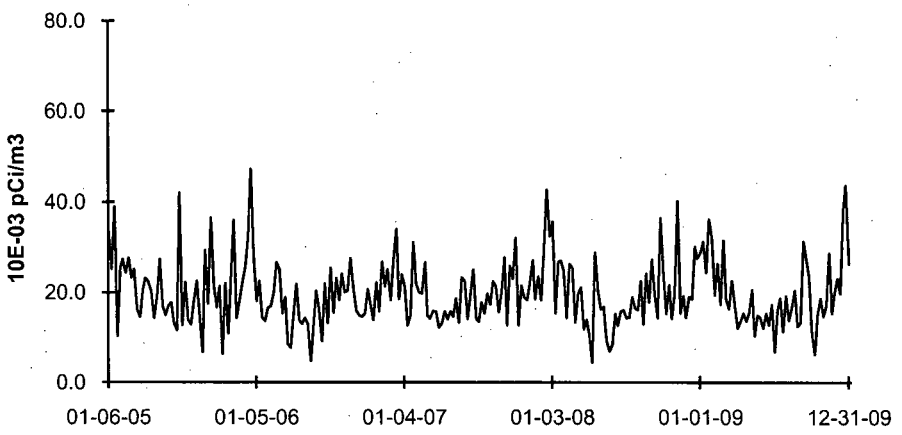
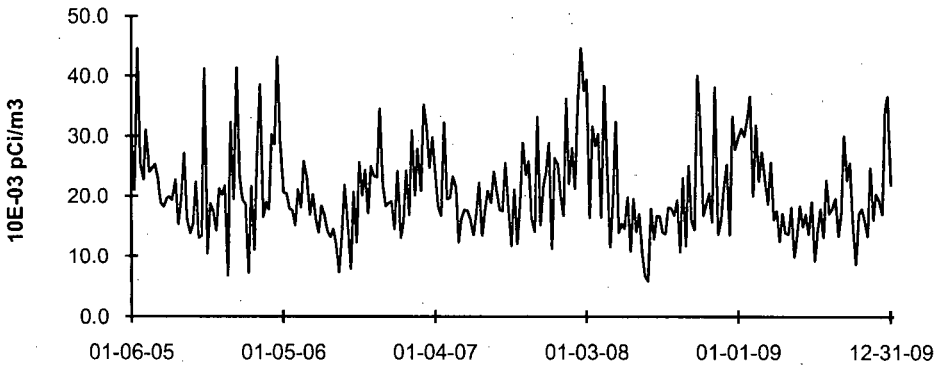


FIGURE C-14 (cont.)
Air Particulates - Gross Beta- Stations BD-03 (C) and BD-06 Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-03 (C) County Line Road



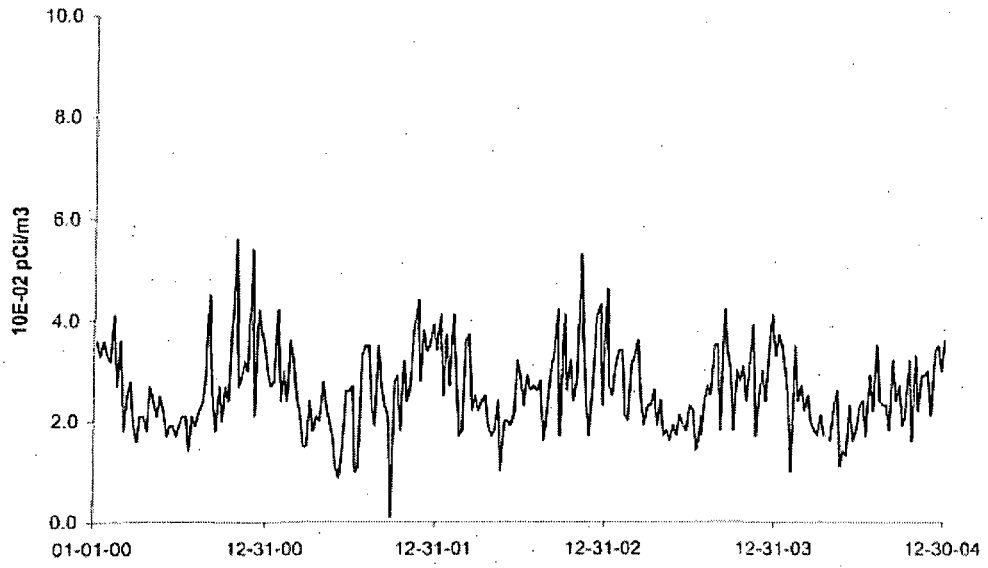
BD-06 Godley



DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-15
Air Particulates - Gross Beta- Stations BD-19 and BD-20 Collected in the Vicinity of Braidwood Station, 2000 - 2004

BD-19 Nearsite, NW



BD-20 Nearsite, N

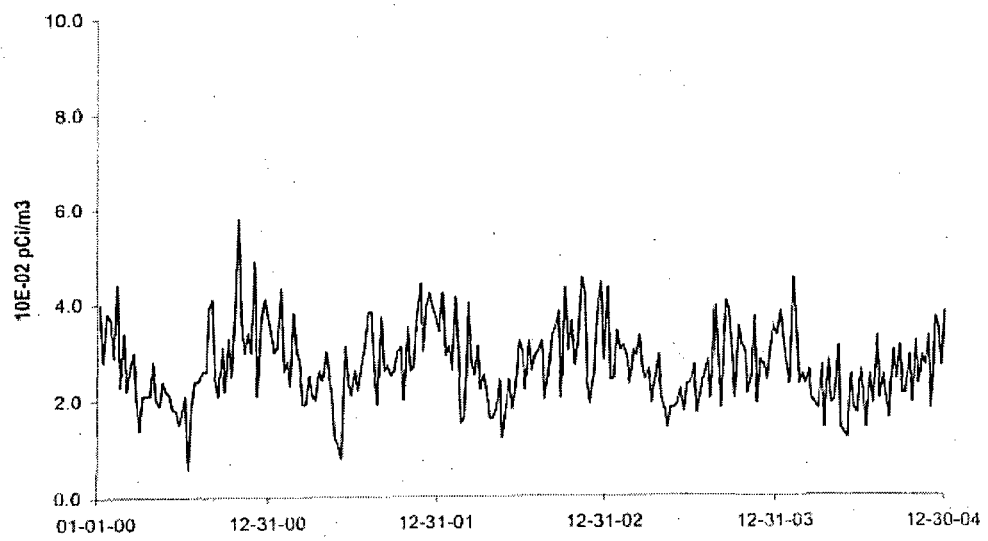
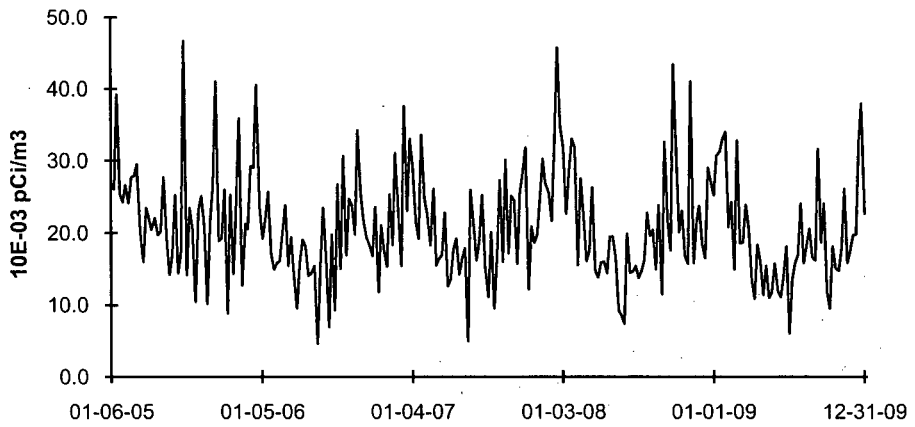
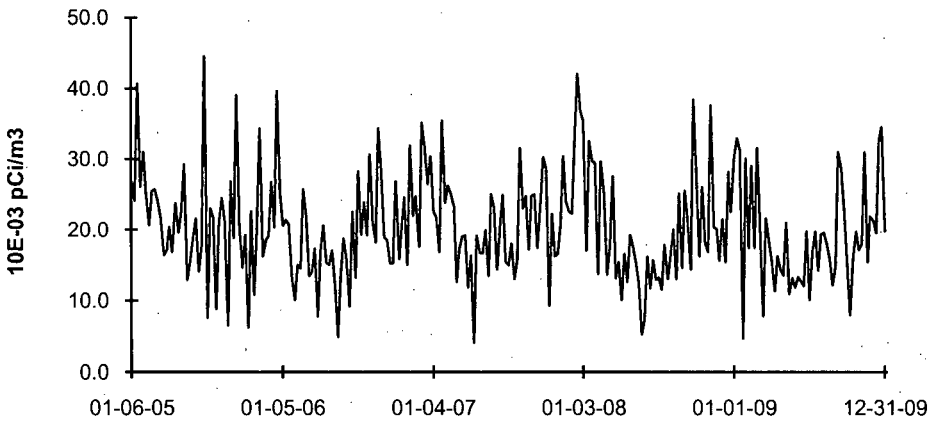


FIGURE C-15 (cont.)
Air Particulates - Gross Beta- Stations BD-19 and BD-20 Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-19 Nearsite, NW



BD-20 Nearsite, N



DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-16
Air Particulates - Gross Beta- Station BD-21
Collected in the Vicinity of Braidwood Station, 2000 - 2004

BD-21 Nearsite, NE

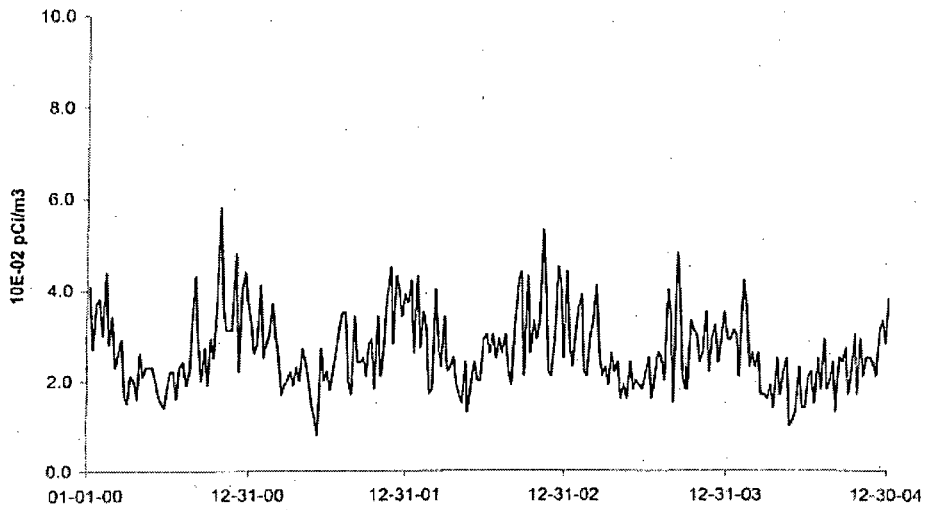
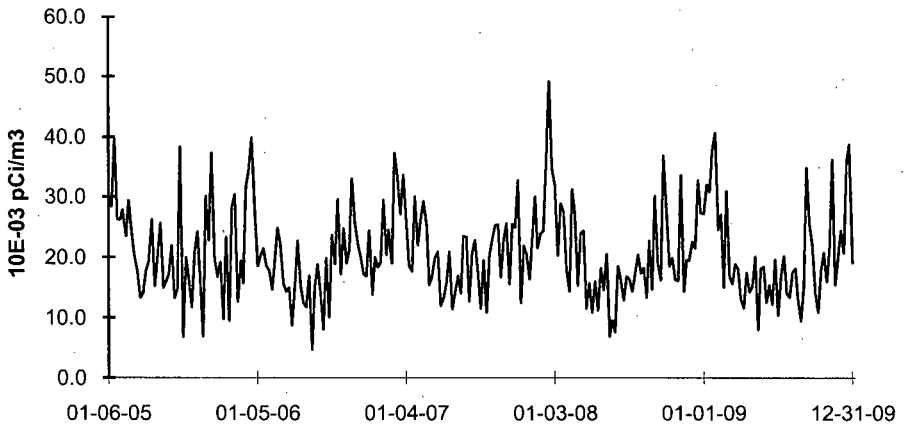


FIGURE C-16 (cont.)
Air Particulates - Gross Beta- Station BD-21
Collected in the Vicinity of Braidwood Station, 2005 - 2009

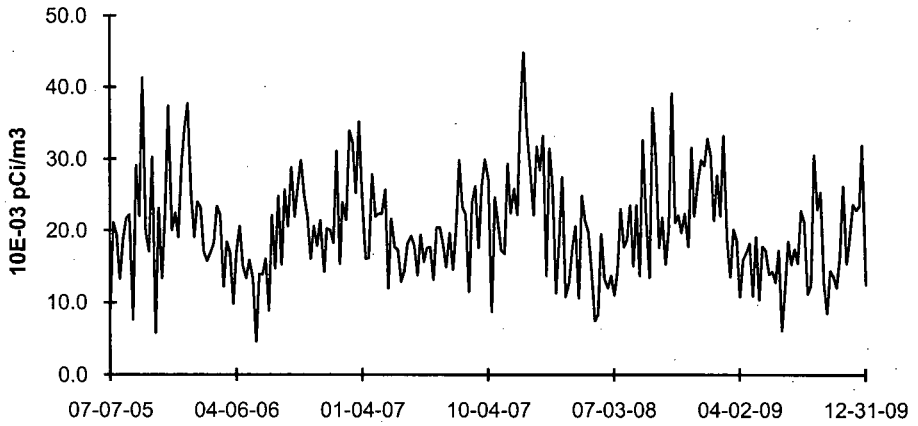
BD-21 Nearsite, NE



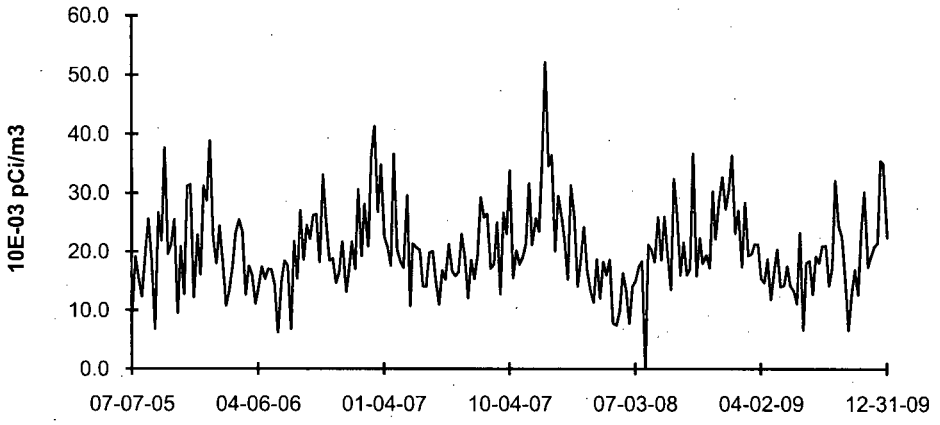
DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-17
Air Particulates - Gross Beta- Stations BD-02 and BD-04 Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-02 Nearsite, NW



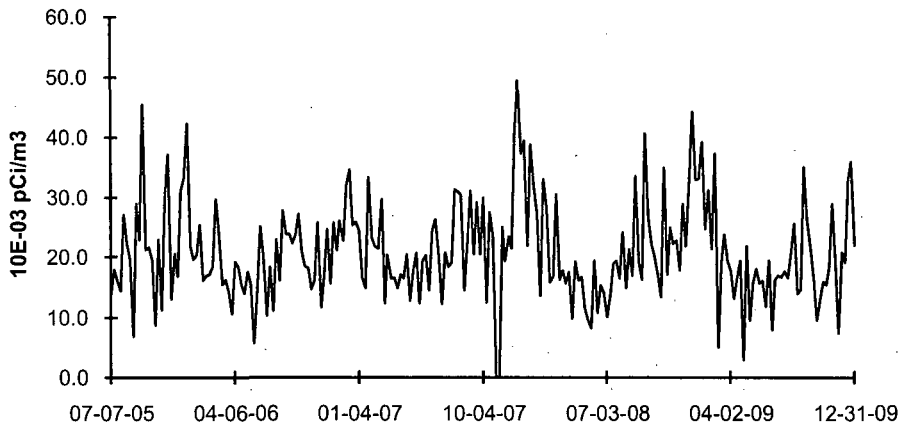
BD-04 Nearsite, N



DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-18
Air Particulates - Gross Beta- Station BD-05
Collected in the Vicinity of Braidwood Station, 2005 - 2009

BD-05 Nearsite, NE



DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2009	E6533-396	Milk	Sr-89	pCi/L	102	97.7	1.04	A
			Sr-90	pCi/L	14.9	15.6	0.96	A
	E6534-396	Milk	I-131	pCi/L	66.7	79.3	0.84	A
			Ce-141	pCi/L	87.5	94.9	0.92	A
			Cr-51	pCi/L	275	305	0.90	A
			Cs-134	pCi/L	82.0	93.7	0.88	A
			Cs-137	pCi/L	111	111	1.00	A
			Co-58	pCi/L	114	119	0.96	A
			Mn-54	pCi/L	136	128	1.06	A
			Fe-59	pCi/L	112	99.9	1.12	A
			Zn-65	pCi/L	160	156	1.03	A
			Co-60	pCi/L	142	142	1.00	A
	E6536-396	AP	Ce-141	pCi	120	115	1.04	A
			Cr-51	pCi	385	371	1.04	A
			Cs-134	pCi	113	114	0.99	A
			Cs-137	pCi	149	135	1.10	A
			Co-58	pCi	153	145	1.06	A
			Mn-54	pCi	155	155	1.00	A
			Fe-59	pCi	118	121	0.98	A
			Zn-65	pCi	195	189	1.03	A
			Co-60	pCi	190	173	1.10	A
	E6535-396	Charcoal	I-131	pCi	82.8	79.4	1.04	A
June 2009	E6742-396	Milk	Sr-89	pCi/L	107	112	0.96	A
			Sr-90	pCi/L	19.0	16.7	1.14	A
	E6743-396	Milk	I-131	pCi/L	98.1	102.0	0.96	A
			Ce-141	pCi/L	260	284	0.92	A
			Cr-51	pCi/L	389	400	0.97	A
			Cs-134	pCi/L	144.0	166	0.87	A
			Cs-137	pCi/L	185	192	0.96	A
			Co-58	pCi/L	86.9	91.9	0.95	A
			Mn-54	pCi/L	133	137	0.97	A
			Fe-59	pCi/L	126	122	1.03	A
			Zn-65	pCi/L	173	175	0.99	A
			Co-60	pCi/L	298	312	0.96	A
	E6745-396	AP	Ce-141	pCi	186	163	1.14	A
			Cr-51	pCi	262	231	1.13	A
			Cs-134	pCi	101	95	1.06	A
			Cs-137	pCi	135	111	1.22	W
			Co-58	pCi	61	53	1.16	A
			Mn-54	pCi	83.1	79	1.05	A
			Fe-59	pCi	84	70	1.19	A
			Zn-65	pCi	137	101	1.36	N (1)
			Co-60	pCi	202	180	1.12	A
	E6744-396	Charcoal	I-131	pCi	92.2	95.8	0.96	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2009	E6897-396	Milk	Sr-89	pCi/L	113	107	1.06	A
			Sr-90	pCi/L	17.4	18.8	0.93	A
	E6898-396	Milk	I-131	pCi/L	89.2	98.6	0.90	A
			Ce-141	pCi/L	249	275	0.91	A
			Cr-51	pCi/L	213	221	0.96	A
			Cs-134	pCi/L	104.0	123	0.85	A
			Cs-137	pCi/L	172	185	0.93	A
			Co-58	pCi/L	96.3	99.4	0.97	A
			Mn-54	pCi/L	201	206	0.98	A
			Fe-59	pCi/L	154	147	1.05	A
			Zn-65	pCi/L	213	204	1.04	A
			Co-60	pCi/L	154	160	0.96	A
	E6900-396	AP	Ce-141	pCi	181	161	1.12	A
			Cr-51	pCi	145	130	1.12	A
			Cs-134	pCi	71.8	72	0.99	A
			Cs-137	pCi	115	109	1.06	A
			Co-58	pCi	62	58	1.06	A
			Mn-54	pCi	129	121	1.07	A
			Fe-59	pCi	97	98	0.98	A
			Zn-65	pCi	110	120	0.92	A
			Co-60	pCi	98.7	94.1	1.05	A
	E6899-396	Charcoal	I-131	pCi	89.5	92.3	0.97	A
December 2009	E6946-396	Milk	Sr-89	pCi/L	131	131	1.00	A
			Sr-90	pCi/L	19.3	17.9	1.08	A
	E6947-396	Milk	I-131	pCi/L	79.2	87.3	0.91	A
			Ce-141	pCi/L	193	202	0.96	A
			Cr-51	pCi/L	512	548	0.93	A
			Cs-134	pCi/L	222	253	0.88	A
			Cs-137	pCi/L	163	179	0.91	A
			Co-58	pCi/L	200	211	0.95	A
			Mn-54	pCi/L	178	178	1.00	A
			Fe-59	pCi/L	176	178	0.99	A
			Zn-65	pCi/L	326	345	0.94	A
			Co-60	pCi/L	240	256	0.94	A
	E6949-396	AP	Ce-141	pCi	103	103	1.00	A
			Cr-51	pCi	290	280	1.04	A
			Cs-134	pCi	116	129	0.90	A
			Cs-137	pCi	93.4	91.5	1.02	A
			Co-58	pCi	111	108	1.03	A
			Mn-54	pCi	81.0	90.8	0.89	A
			Fe-59	pCi	106	90.8	1.17	A
			Zn-65	pCi	155	176	0.88	A
			Co-60	pCi	135	131	1.03	A

TABLE D-1 **ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2009	E6948-396	Charcoal	I-131	pCi	93.3	93.9	0.99	A

(1) Detector 7 appears to have a slightly high bias. Detector 7 was removed from service until it can be recalibrated. NCR 09-23

(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 **ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
April 2009	RAD 77	Water	Sr-89	pCi/L	57.4	48.3	37.8 - 55.7	N (1)
			Sr-90	pCi/L	30.6	31.4	22.9 - 36.4	A
			Ba-133	pCi/L	55.2	52.7	43.4 - 58.3	A
			Cs-134	pCi/L	65.8	72.9	59.5 - 80.2	A
			Cs-137	pCi/L	157	168	151 - 187	A
			Co-60	pCi/L	86.4	88.9	80.0 - 100	A
			Zn-65	pCi/L	85.5	84.4	76.0 - 101	A
			Gr-A	pCi/L	47.7	54.2	28.3 - 67.7	A
			Gr-B	pCi/L	45.2	43.5	29.1 - 50.8	A
			I-131	pCi/L	25.2	26.1	21.7 - 30.8	A
			H-3	pCi/L	19733	20300	17800 - 22300	A
October 2009	RAD 79	Water	Sr-89	pCi/L	64.75	62.2	50.2 - 70.1	A
			Sr-90	pCi/L	30.30	30.7	22.4 - 35.6	A
			Ba-133	pCi/L	97.9	92.9	78.3 - 102	A
			Cs-134	pCi/L	76.8	79.4	65.0 - 87.3	A
			Cs-137	pCi/L	59.9	54.6	49.1 - 62.9	A
			Co-60	pCi/L	121	117	105 - 131	A
			Zn-65	pCi/L	115	99.5	89.6 - 119	A
			Gr-A	pCi/L	19.6	23.2	11.6 - 31.1	A
			Gr-B	pCi/L	28.5	26.0	16.2 - 33.9	A
			I-131	pCi/L	22.1	22.2	18.4 - 26.5	A
			H-3	pCi/L	16133	16400	14300 - 18000	A

(1) Calculation did not allow for Y-90 ingrowth on the Sr-89 mount. NCR 09-14

(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.

TABLE D-3 **DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)**
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
March 2009	09-MaW20	Water	Cs-134	Bq/L	18.8	22.5	18.5 - 29.3	A
			Cs-137	Bq/L	0.0601		(1)	A
			Co-57	Bq/L	17.0	18.9	13.2 - 24.6	A
			Co-60	Bq/L	16.1	17.21	12.05 - 22.37	A
			H-3	Bq/L	332	330.9	231.6 - 430.2	A
			Mn-54	Bq/L	13.8	14.7	10.26 - 19.06	A
			Sr-90	Bq/L	6.88	7.21	5.05- 9.37	A
			Zn-65	Bq/L	13.2	13.6	9.5 - 17.7	A
	09-GrW20	Water	Gr-A	Bq/L	0.529	0.635	>0.0 - 1.270	A
			Gr-B	Bq/L	1.87	1.27	0.64 - 1.91	A
	09-MaS20	Soil	Cs-134	Bq/kg	433	467	327 - 607	A
			Cs-137	Bq/kg	649	605	424 - 787	A
			Co-57	Bq/kg	-0.120		(1)	A
			Co-60	Bq/kg	3.91	4.113	(2)	A
			Mn-54	Bq/kg	339	307	215 - 399	A
			K-40	Bq/kg	644	570	399 - 741	A
			Sr-90	Bq/kg	245	257	180 - 334	A
			Zn-65	Bq/kg	272	242	169 - 315	A
	09-RdF20	AP	Cs-134	Bq/sample	2.77	2.93	2.05 - 3.81	A
			Cs-137	Bq/sample	1.41	1.52	1.06 - 1.98	A
			Co-57	Bq/sample	1.24	1.30	0.91 - 1.69	A
			Co-60	Bq/sample	1.33	1.22	0.85 - 1.59	A
			Mn-54	Bq/sample	2.42	2.2709	1.5898 - 2.9522	A
			Sr-90	Bq/sample	0.713	0.64	0.448 - 0.832	A
			Zn-65	Bq/sample	1.30	1.36	0.95 - 1.77	A
	09-GrF20	AP	Gr-A	Bq/sample	0.188	0.348	>0.0 - 0.696	A
			Gr-B	Bq/sample	0.313	0.279	0.140 - 0.419	A
March 2009	09-RdV20	Vegetation	Cs-134	Bq/sample	3.48	3.40	2.38 - 4.42	A
			Cs-137	Bq/sample	1.15	0.93	0.65 - 1.21	W
			Co-57	Bq/sample	3.12	2.36	1.65 - 3.07	N (3)
			Co-60	Bq/sample	-0.0105		(1)	A
			Mn-54	Bq/sample	2.98	2.3	1.61 - 2.99	W
			K-40	Bq/sample	64.1		(4)	
			Sr-90	Bq/sample	1.09	1.260	0.882 - 1.638	A
			Zn-65	Bq/sample	1.73	1.3540	0.948 - 1.760	W
September 2009	09-MaW21	Water	Cs-134	Bq/L	26.5	32.2	22.5 - 41.9	A
			Cs-137	Bq/L	37.2	41.2	28.8 - 53.6	A
			Co-57	Bq/L	32.2	36.6	25.6 - 47.6	A
			Co-60	Bq/L	14.0	15.40	10.8 - 20.0	A
			H-3	Bq/L	705	634.1	443.9 - 824.3	A
			Mn-54	Bq/L	-0.1015		(1)	A
			Sr-90	Bq/L	13.9	12.99	9.09- 16.89	A
			Zn-65	Bq/L	26.2	26.9	18.8 - 35.0	A
	09-GrW21	Water	Gr-A	Bq/L	1.27	1.047	>0.0 - 2.094	A
			Gr-B	Bq/L	9.70	7.53	3.77 - 11.30	A

TABLE D-3 **DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)**
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 2 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
September 2009	09-MaS21	Soil	Am-241	Bq/kg	74.7	89.8	62.9 - 116.7	A
			Cs-134	Bq/kg	0.554		(1)	A
			Cs-137	Bq/kg	706	669	468 - 870	A
			Co-57	Bq/kg	606	586	410 - 762	A
			Co-60	Bq/kg	350	327.000	229 - 425	A
			Mn-54	Bq/kg	876	796	557 - 1035	A
			K-40	Bq/kg	425	375	263 - 488	A
			Sr-90	Bq/kg	505	455	319 - 592	A
			Zn-65	Bq/kg	1370	1178	825 - 1531	A
	09-RdF21	AP	Cs-134	Bq/sample	-0.02		(1)	A
			Cs-137	Bq/sample	1.4	1.4	0.98 - 1.82	A
			Co-57	Bq/sample	5.98	6.48	4.54 - 8.42	A
			Co-60	Bq/sample	1.01	1.03	0.72 - 1.34	A
			Mn-54	Bq/sample	5.16	5.49	3.84 - 7.14	A
			Sr-90	Bq/sample	0.925	0.0835	0.585 - 1.086	A
			Zn-65	Bq/sample	4.39	3.93	2.75 - 5.11	A
	09-GrF21	AP	Gr-A	Bq/sample	0.357	0.659	>0.0 - 1.318	A
			Gr-B	Bq/sample	1.403	1.320	0.66 - 1.98	A
	09-RdV21	Vegetation	Cs-134	Bq/sample	-0.0027		(1)	A
			Cs-137	Bq/sample	2.36	2.43	1.70 - 3.16	A
			Co-60	Bq/sample	2.58	2.57	1.80 - 3.34	A
			Mn-54	Bq/sample	8.36	7.9	5.5 - 10.3	A
			K-40	Bq/sample	57.8		(4)	
			Sr-90	Bq/sample	1.73	1.78	1.25 - 2.31	A
			Zn-65	Bq/sample	-0.59		(1)	A

(1) False positive test.
(2) Sensativity evaluation.
(3) Homogeniety problem. MAPEP requires using entire sample but due to geometry limitations we can only use part of the sample. NCR 09-13
(4) Not evaluated by MAPEP.
(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.

APPENDIX E

EFFLUENT DATA

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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 3586.6 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.

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.

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. External gamma radiation exposure from noble gases and internal dose from I-131 in milk are the critical pathways at this site; however, an environmental monitoring program is conducted which also includes other pathways.

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 Total Effective Dose Equivalent (TEDE) due to licensed activities at Braidwood Station calculated for the maximally exposed individual for the period is 4.47E-01 mrem. The annual limit on TEDE is 100 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, and particulate radioactivity released to the atmosphere during the year, are listed in Table 1.1-1.

A total of 1.15E+01 curies of fission and activation gases were released with a maximum quarterly average release rate of 5.30E-01 µCi/sec at Unit 1 and 4.28E-01 µCi/sec at Unit 2.

A total of 5.73E-04 curies of 1-131 were released during the year with a maximum average quarterly release rate of 4.11E-05 µCi/sec for Unit 1 and 1.61E-05 µCi/sec for Unit 2.

A total of 1.24E-04 curies of beta-gamma emitters were released as airborne particulate matter with a maximum average release rate of 7.54E-06 µCi/sec at Unit 1 and 1.66E-06 µCi/sec at Unit 2. Alpha-emitting radionuclides were below the lower limit of detection (LLD) for the year.

A total of 3.32E+02 curies of tritium were released with a maximum average quarterly release rate of 1.23E+01 µCi/sec at Unit 1 and 3.78E+00 µCi/sec at Unit 2.

1.2 Liquids Released to Kankakee River

A total of 2.28E+06 liters of radioactive liquid wastes (prior to dilution) containing 2.72E-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 1.78E-08 µCi/ml. Alpha-emitting radionuclides were less than the LLD for the year. A total of 1.06E+03 curies of tritium was 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 disposal facility; the Barnwell, South Carolina disposal facility and various waste processors. For detail, refer the Braidwood Station 2009 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 7.08E-02 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 8.64E-05 mrem (Table 3.4-1). The maximum gamma air dose was 1.23E-04 mrad (Table 3.1-1) based on measured effluents and average meteorological data and 1.56E-04 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 5.12E-04 mrem based on concurrent meteorological data (Table 3.4-1).

The maximum offsite beta air dose for the year was 4.99E-04 mrad (Table 3.1-1) based on measured effluents and average meteorological data and 1.08E-03 mrad based on concurrent meteorological data (Table 3.4-1).

3.1.2 Radioactive Iodine

The human thyroid exhibits a significant capacity to concentrate ingested or inhaled iodine and the radionuclide I-131. Minimal levels of radioiodine released during routine operation of the station may be made available to man, thus resulting in a dose to the thyroid. The principal pathway of interest for this radionuclide is ingestion of radioiodine in milk. Calculations performed in 2009 and previous years indicate that contributions to doses from inhalation of I-131 and I-133, and ingestion of I-133 in milk are negligible.

3.1.2.1 Dose to Thyroid

The hypothetical thyroid dose to the maximum exposed individual living near the station via ingestion of milk was calculated. The radionuclide considered was I-131 and the source of milk was taken to be the nearest dairy farm with the cows pastured from May through October. The maximum thyroid dose did not exceed 1.61E-01 mrem during the year (Table 3.1-1[infant]).

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 Exelon Offsite Dose Calculation Manual. The maximum whole body dose for the year was 9.82E-02 mrem and no organ dose exceeded 1.14E-01 mrem (Table 3.2-1 [child]).

3.3 Assessment of Dose to Member of Public

During the period January to December, 2009, 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), Figure 3.1-1 (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 E. 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 99.4% during 2009.

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*Nuclear Regulatory Commission, Regulatory Guide 1.109 (Rev. 1)

APPENDIX E-1

DATA TABLES AND FIGURES

TABLE 1.1-1
BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2009
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	8.16E-01	7.89E-01	9.43E-01	2.62E+00	7.59
2. Average Release Rate	µCi/sec	1.05E-01	1.00E-01	1.19E-01	3.30E-01	
3. Percent of ODCM Limit - gamma	%	5.20E-05	1.58E-04	2.34E-04	5.84E-04	
4. Percent of ODCM Limit - beta	%	1.98E-04	3.84E-04	5.67E-04	1.17E-03	
B. Iodine Releases						
1. Total I-131 Activity	Ci	7.47E-05	3.23E-04	<LLD	1.07E-05	33.20
2. Average Release Rate	µCi/sec	9.61E-06	4.11E-05	0.00E+00	1.35E-06	
3. Percent of ODCM Limit - gamma	%	2.31E-01	9.80E-01	0.00E+00	1.08E+00	
C. Particulate (> 8 day half-life) Releases						
1. Gross Activity	Ci	3.62E-05	3.46E-06	2.83E-06	5.99E-05	19.80
2. Average Release Rate	µCi/sec	4.66E-06	4.45E-07	3.56E-07	7.54E-06	
3. Percent of ODCM Limit	%	2.31E-01	9.80E-01	1.00E+00	1.08E+00	
4. Gross Alpha Activity	Ci	<LLD	<LLD	<LLD	<LLD	
D. Tritium Releases						
1. Total Release Activity	Ci	9.55E+01	9.08E+01	2.12E+01	3.68E+01	8.07
2. Average Release Rate	µCi/sec	1.23E+01	1.15E+01	2.67E+00	4.63E+00	
3. Percent of ODCM Limit	%	2.31E-01	9.80E-01	1.00E+00	1.08E+00	

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

TABLE 1.1-1 (cont.)
BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2009
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	8.16E-01	7.89E-01	9.72E-01	3.40E+00	7.59
2. Average Release Rate	µCi/sec	1.05E-01	1.00E-01	1.22E-01	4.28E-01	
3. Percent of ODCM Limit - gamma	%	5.20E-05	1.58E-04	2.36E-04	6.49E-04	
4. Percent of ODCM Limit - beta	%	1.98E-04	3.84E-04	5.72E-04	1.33E-03	
B. Iodine Releases						
1. Total I-131 Activity	Ci	<LLD	<LLD	3.68E-05	1.28E-04	33.20
2. Average Release Rate	µCi/sec	0.00E+00	0.00E+00	4.63E-06	1.61E-05	
3. Percent of ODCM Limit	%	0.00E+00	0.00E+00	9.26E-02	3.21E-01	
C. Particulate (> 8 day half-life) Releases						
1. Gross Activity	Ci	1.29E-05	<LLD	8.20E-06	4.33E-07	19.80
2. Average Release Rate	µCi/sec	1.66E-06	0.00E+00	1.03E-06	5.45E-08	
3. Percent of OCDM Limit	%	1.62E-02	0.00E+00	9.26E-02	3.21E-01	
4. Gross Alpha Activity	Ci	<LLD	<LLD	<LLD	<LLD	
D. Tritium Releases						
1. Total Release Activity	Ci	1.14E+01	2.97E+01	1.66E+01	2.98E+01	8.07
2. Average Release Rate	µCi/sec	1.47E+00	3.78E+00	2.09E+00	3.75E+00	
3. Percent of ODCM Limit	%	1.62E-02	5.83E-02	9.26E-02	3.21E-01	

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

TABLE 1.2-1
BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2009
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 Activity Released	Ci	2.62E-03	2.56E-02	7.73E-02	3.05E-02	2.64
2. Average Concentration Released	μCi/ml	4.45E-10	8.61E-09	1.78E-08	6.86E-09	
3. Percent of limit	%	*	*	*	*	
B. Tritium						
1. Total Activity Released	Ci	8.42E+01	1.48E+02	1.03E+02	1.94E+02	5.85
2. Average Concentration Released	μCi/ml	1.43E-05	4.98E-05	2.38E-05	4.36E-05	
3. % of Limit (1E-2 μCi/ml)	%	1.43E-01	4.98E-01	2.38E-01	4.36E-01	
C. Dissolved Noble Gases						
1. Total Activity Released	Ci	<LLD	<LLD	<LLD	7.15E-06	2.64
2. Average Concentration Released	μCi/ml	0.00E+00	0.00E+00	0.00E+00	1.61E-12	
3. % of Limit (2E-4 μCi/ml)	%	0.00E+00	0.00E+00	0.00E+00	8.04E-07	
D. Gross Alpha						
1. Total Activity Released	Ci	2.17E-05	2.94E-05	2.29E-05	9.70E-05	14.70
2. Average Concentration Released	μCi/ml	3.69E-12	9.89E-12	5.28E-12	2.18E-11	
E. Volume of Releases						
1. Volume of Liquid Waste to Discharge	liters	1.51E+05	3.81E+05	1.73E+05	4.39E+05	
2. Volume of Dilution Water	liters	5.89E+09	2.97E+09	4.33E+09	4.45E+09	

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

Note: % Limit Values are included in Appendix B 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.

TABLE 1.2-1 (cont.)
BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2009
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 Activity Released	Ci	2.62E-03	2.56E-02	7.73E-02	3.05E-02	2.64
2. Average Concentration Released	μCi/ml	4.45E-10	8.61E-09	1.78E-08	6.86E-09	
3. Percent of Limit	%	*	*	*	*	
B. Tritium						
1. Total Activity Released	Ci	8.42E+01	1.48E+02	1.03E+02	1.94E+02	5.85
2. Average Concentration Released	μCi/ml	1.43E-05	4.98E-05	2.38E-05	4.36E-05	
3. % of Limit (1E-3 μCi/ml)	%	1.43E-01	4.98E-01	2.38E-01	4.36E-01	
C. Dissolved Noble Gases						
1. Total Activity Released	Ci	<LLD	<LLD	<LLD	7.15E-06	2.64
2. Average Concentration Released	μCi/ml	0.00E+00	0.00E+00	0.00E+00	1.61E-12	
3. % of Limit (2E-4 μCi/ml)	%	0.00E+00	0.00E+00	0.00E+00	8.04E-07	
D. Gross Alpha						
1. Total Activity Released	Ci	2.17E-05	2.94E-05	2.29E-05	9.70E-05	14.70
2. Average Concentration Released	μCi/ml	3.69E-12	9.89E-12	5.28E-12	2.18E-11	
E. Volume of Releases						
1. Volume of Liquid Waste to Discharge	liters	1.51E+05	3.81E+05	1.73E+05	4.39E+05	
2. Volume of Dilution Water	liters	5.89E+09	2.97E+09	4.33E+09	4.45E+09	

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

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

*This limit is equal to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10CFR20.1001-2402.

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....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	INFANT	THYROID	1.61E-01	31-day	2.25E-01	7.17E+01	3.00E-01	5.38E+01
Qrtr->End	INFANT	THYROID	1.61E-01	Quarter	5.63E+00	2.87E+00	7.50E+00	2.15E+00
Year->End	INFANT	THYROID	1.61E-01	Annual	1.13E+01	1.43E+00	1.50E+01	1.08E+00

Critical Pathway.....: 3 Grs/Goat/Milk (GMILK)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	2.51E+01
I-131	7.44E+01
I-132	9.36E-04
I-133	6.20E-01
ND-147	9.48E-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	5.21E-02	31-day	1.50E-01	3.48E+01	2.00E-01	2.61E+01
Qrtr->End	CHILD	TBODY	5.21E-02	Quarter	5.25E+00	9.93E-01	7.50E+00	6.95E-01
Year->End	CHILD	TBODY	5.21E-02	Annual	1.05E+01	4.97E-01	1.50E+01	3.48E-01

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

Nuclide	Percentage
H-3	9.99E+01
I-131	1.73E-01
I-132	3.01E-04
I-133	2.01E-03
ND-147	2.95E-05

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Table 3.1-1 (cont.)

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....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	5.84E-05	31-day	1.50E-01	3.90E-02	2.00E-01	2.92E-02
Qrtr->End	Gamma	5.84E-05	Quarter	3.75E+00	1.56E-03	5.00E+00	1.17E-03
Year->End	Gamma	5.84E-05	Annual	7.50E+00	7.79E-04	1.00E+01	5.84E-04

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

Nuclide	Percentage
AR-41	2.37E+00
KR-85M	2.54E-01
KR-85	1.47E-01
XE-133M	1.07E+00
KR-88	1.52E+00
XE-131M	2.87E-02
XE-135	3.50E+01
XE-133	5.96E+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	2.34E-04	31-day	3.00E-01	7.80E-02	4.00E-01	5.85E-02
Qrtr->End	Beta	2.34E-04	Quarter	7.50E+00	3.12E-03	1.00E+01	2.34E-03
Year->End	Beta	2.34E-04	Annual	1.50E+01	1.56E-03	2.00E+01	1.17E-03

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

Nuclide	Percentage
AR-41	3.40E-01
KR-85M	1.66E-01
KR-85	6.79E+00
XE-133M	1.97E+00
KR-88	1.20E-01
XE-131M	8.31E-02
XE-135	1.83E+01
XE-133	7.23E+01

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Table 3.1-1 (cont.)

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

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....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	INFANT	THYROID	4.81E-02	31-day	2.25E-01	2.14E+01	3.00E-01	1.60E+01
Qrtr->End	INFANT	THYROID	4.81E-02	Quarter	5.63E+00	8.55E-01	7.50E+00	6.41E-01
Year->End	INFANT	THYROID	4.81E-02	Annual	1.13E+01	4.28E-01	1.50E+01	3.21E-01

Critical Pathway.....: 3 Grs/Goat/Milk (GMILK)
Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	3.01E+01
CO-58	2.97E-03
AG-110M	3.74E-03
I-131	6.86E+01
I-132	1.20E-03
I-133	1.25E+00
ND-147	3.97E-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	1.87E-02	31-day	1.50E-01	1.24E+01	2.00E-01	9.34E+00
Qrtr->End	CHILD	TBODY	1.87E-02	Quarter	5.25E+00	3.56E-01	7.50E+00	2.49E-01
Year->End	CHILD	TBODY	1.87E-02	Annual	1.05E+01	1.78E-01	1.50E+01	1.24E-01

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

Nuclide	Percentage
H-3	9.96E+01
CO-58	1.34E-02
AG-110M	1.00E-02
I-131	1.33E-01
I-132	3.22E-04
I-133	3.37E-03
ND-147	1.03E-05

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Table 3.1-1 (cont.)
MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

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....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	6.49E-05	31-day	1.50E-01	4.33E-02	2.00E-01	3.24E-02
Qrtr->End	Gamma	6.49E-05	Quarter	3.75E+00	1.73E-03	5.00E+00	1.30E-03
Year->End	Gamma	6.49E-05	Annual	7.50E+00	8.65E-04	1.00E+01	6.49E-04

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

Nuclide	Percentage
AR-41	2.13E+00
KR-85M	2.29E-01
KR-85	1.32E-01
XE-133M	9.61E-01
KR-88	1.37E+00
XE-131M	2.58E-02
XE-135	3.15E+01
XE-133	6.36E+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	2.65E-04	31-day	3.00E-01	8.84E-02	4.00E-01	6.63E-02
Qrtr->End	Beta	2.65E-04	Quarter	7.50E+00	3.53E-03	1.00E+01	2.65E-03
Year->End	Beta	2.65E-04	Annual	1.50E+01	1.77E-03	2.00E+01	1.33E-03

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

Nuclide	Percentage
AR-41	3.00E-01
KR-85M	1.46E-01
KR-85	5.99E+00
XE-133M	1.74E+00
KR-88	1.06E-01
XE-131M	7.33E-02
XE-135	1.61E+01
XE-133	7.55E+01

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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.....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	CHILD	LIVER	5.72E-02	31-day	1.50E-01	3.81E+01	2.00E-01	2.86E+01
Qrtr->End	CHILD	LIVER	5.72E-02	Quarter	3.75E+00	1.52E+00	5.00E+00	1.14E+00
Year->End	CHILD	LIVER	5.72E-02	Annual	7.50E+00	7.62E-01	1.00E+01	5.72E-01

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

Nuclide	Percentage
H-3	5.37E+01
CR-51	0.00E+00
MN-54	1.68E-01
FE-55	3.01E-01
FE-59	2.47E-02
CO-58	3.52E-01
CO-60	1.03E-01
ZR-95	4.06E-07
NB-95	1.94E-03
AG-110M	2.78E-06
TE-125M	1.55E-02
TE-132	2.26E-03
I-132	3.90E-05
CS-134	2.34E+01
CS-137	2.19E+01
BA-139	1.08E-09

=== 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	ADULT	TBODY	4.91E-02	31-day	4.50E-02	1.09E+02	6.00E-02	8.19E+01
Qrtr->End	ADULT	TBODY	4.91E-02	Quarter	1.13E+00	4.37E+00	1.50E+00	3.28E+00
Year->End	ADULT	TBODY	4.91E-02	Annual	2.25E+00	2.18E+00	3.00E+00	1.64E+00

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

Nuclide	Percentage
H-3	5.48E+01
CR-51	2.02E-05

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Table 3.2-1 (cont.)

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.....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 00:00
Period Duration (mins): 5.256E+05

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

Nuclide	Percentage
MN-54	4.80E-02
FE-55	7.55E-02
FE-59	1.25E-02
CO-58	1.11E+00
CO-60	3.09E-01
ZR-95	2.59E-07
NB-95	1.46E-03
AG-110M	1.53E-06
TE-125M	6.33E-03
TE-132	2.73E-03
I-132	1.56E-05
CS-134	2.61E+01
CS-137	1.77E+01
BA-139	3.50E-08

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Table 3.2-1 (cont.)

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.....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 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	CHILD	LIVER	5.72E-02	31-day	1.50E-01	3.81E+01	2.00E-01	2.86E+01
Qrtr->End	CHILD	LIVER	5.72E-02	Quarter	3.75E+00	1.52E+00	5.00E+00	1.14E+00
Year->End	CHILD	LIVER	5.72E-02	Annual	7.50E+00	7.62E-01	1.00E+01	5.72E-01

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

Nuclide	Percentage
H-3	5.37E+01
CR-51	0.00E+00
MN-54	1.68E-01
FE-55	3.01E-01
FE-59	2.47E-02
CO-58	3.52E-01
CO-60	1.03E-01
ZR-95	4.06E-07
NB-95	1.94E-03
AG-110M	2.78E-06
TE-125M	1.55E-02
TE-132	2.26E-03
I-132	3.90E-05
CS-134	2.34E+01
CS-137	2.19E+01
BA-139	1.08E-09

=== 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	ADULT	TBODY	4.91E-02	31-day	4.50E-02	1.09E+02	6.00E-02	8.19E+01
Qrtr->End	ADULT	TBODY	4.91E-02	Quarter	1.13E+00	4.37E+00	1.50E+00	3.28E+00
Year->End	ADULT	TBODY	4.91E-02	Annual	2.25E+00	2.18E+00	3.00E+00	1.64E+00

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

Nuclide	Percentage
H-3	5.48E+01
CR-51	2.02E-05

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Table 3.2-1 (cont.)

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

Release ID.....: 1 All Liquid Release Types
Period Start Date.....: 01/01/2009 00:00
Period End Date.....: 01/01/2010 00:00
Period Duration (mins): 5.256E+05

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

Nuclide	Percentage
MN-54	4.80E-02
FE-55	7.55E-02
FE-59	1.25E-02
CO-58	1.11E+00
CO-60	3.09E-01
ZR-95	2.59E-07
NB-95	1.46E-03
AG-110M	1.53E-06
TE-125M	6.33E-03
TE-132	2.73E-03
I-132	1.56E-05
CS-134	2.61E+01
CS-137	1.77E+01
BA-139	3.50E-08

Table 3.3-1

10CFR20 Compliance Assessment

Braidwood Nuclear Station

Unit 1

10CFR20 Compliance Assessment

Period of Assessment: 1/1/09 through 12/31/09
Calculated 5/5/10

10 CFR 20.1301(a)(1) Compliance

Total Effective Dose Equivalent (TEDE)	mrem/year	2.79E-01
10 CFR 20.1301(a)(1) limit	mrem/year	100.00
	% of limit	0.28

Compliance Summary

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
TEDE (mrem)	4.83E-02	1.34E-01	5.90E-02	3.82E-02	2.79E-01

Table 3.3-1 (cont.)

10CFR20 Compliance Assessment

Braidwood Nuclear Station

Unit 2

10CFR20 Compliance Assessment

Period of Assessment: 1/1/09 through 12/31/09
Calculated 5/5/10

10 CFR 20.1301(a)(1) Compliance

Total Effective Dose Equivalent (TEDE)	mrem/year	1.67E-01
10 CFR 20.1301(a)(1) limit	mrem/year	100.00
	% of limit	0.17

Compliance Summary

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
TEDE (mrem)	1.62E-02	2.81E-02	6.09E-02	6.32E-02	1.67E-01

Table 3.4-1

Braidwood Station - Unit 1

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

2009

TYPE OF DOSE	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	ANNUAL
GAMMA AIR (mrad)	5.130E-06(WNW)	1.250E-05(SW)	1.620E-05(WSW)	4.540E-05(W)	7.357E-05(W)
BETA AIR (mrad)	6.150E-05(WNW)	7.020E-05(W)	9.810E-05(WSW)	2.890E-04(W)	5.025E-04(W)
WHOLE BODY (mrem)	2.590E-06(WNW)	7.770E-06(SW)	7.050E-06(SW)	2.390E-05(W)	3.931E-05(W)
SKIN (mrem)	2.740E-05(WNW)	3.750E-05(W)	3.310E-05(SW)	1.460E-04(W)	2.403E-04(W)
ORGAN (mrem)	3.540E-03(WNW)	4.190E-03(W)	1.400E-03(WSW)	2.080E-03(W)	1.067E-02(W)
CRITICAL PERSON	Teenager	Teenager	Teenager	Teenager	Teenager
CRITICAL ORGAN	Thyroid	Thyroid	Liver	Liver	Thyroid

COMPLIANCE STATUS

TYPE OF DOSE	10 CFR 50 APP. I QUARTERLY OBJECTIVE	% OF APP. I	10 CFR 50 APP.I YEARLY OBJECTIVE	% OF APP. I
GAMMA AIR (mrad)	5.0	0.00	10.0	0.00
BETA AIR (mrad)	10.0	0.00	20.0	0.00
WHOLE BODY (mrem)	2.5	0.00	5.0	0.00
SKIN (mrem)	7.5	0.00	15.0	0.00
ORGAN (mrem)	7.5	0.06	15.0	0.07
CRITICAL PERSON		Teenager		Teenager
CRITICAL ORGAN		Thyroid		Thyroid

Calculation used release data from the following:
Unit 1 - Vent

Date of calculation: 3/23/2010

Table 3.4-1 (cont.)

Braidwood Station - Unit 2

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

2009

TYPE OF DOSE	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER	ANNUAL
GAMMA AIR (mrad)	5.130E-06(WNW)	1.250E-05(SW)	1.670E-05(WSW)	5.430E-05(W)	8.277E-05(W)
BETA AIR (mrad)	6.150E-05(WNW)	7.020E-05(W)	1.010E-04(WSW)	3.620E-04(W)	5.783E-04(W)
WHOLE BODY (mrem)	2.410E-06(WNW)	7.770E-06(SW)	1.140E-05(WSW)	2.870E-05(W)	4.709E-05(W)
SKIN (mrem)	2.720E-05(WNW)	3.620E-05(W)	3.790E-05(W)	1.730E-04(W)	2.715E-04(W)
ORGAN (mrem)	4.210E-04(WNW)	1.350E-03(W)	1.110E-03(WSW)	1.700E-03(W)	4.415E-03(W)
CRITICAL PERSON	Teenager	Adult	Teenager	Teenager	Teenager
CRITICAL ORGAN	Liver	Liver	Thyroid	Thyroid	Thyroid

COMPLIANCE STATUS

TYPE OF DOSE	10 CFR 50 APP. I QUARTERLY OBJECTIVE	% OF APP. I	10 CFR 50 APP.I YEARLY OBJECTIVE	% OF APP. I
GAMMA AIR (mrad)	5.0	0.00	10.0	0.00
BETA AIR (mrad)	10.0	0.00	20.0	0.00
WHOLE BODY (mrem)	2.5	0.00	5.0	0.00
SKIN (mrem)	7.5	0.00	15.0	0.00
ORGAN (mrem)	7.5	0.02	15.0	0.03
CRITICAL PERSON		Teenager		Teenager
CRITICAL ORGAN		Thyroid		Thyroid

Calculation used release data from the following:
Unit 2 - Vent

Date of calculation: 3/23/2010

APPENDIX F

METEOROLOGICAL

Braidwood Generating Station

Period of Record: January - March 2009
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	1	1	0	0	2
NNE	0	1	7	5	0	0	13
NE	0	1	2	0	0	0	3
ENE	0	1	0	0	0	0	1
E	0	5	0	0	0	0	5
ESE	0	5	1	0	0	0	6
SE	0	1	2	0	0	0	3
SSE	0	1	6	0	0	0	7
S	0	0	2	2	1	0	5
SSW	0	0	3	3	3	0	9
SW	0	1	0	3	0	0	4
WSW	0	0	1	1	0	0	2
W	0	1	2	5	0	0	8
WNW	0	11	26	5	0	0	42
NW	0	8	16	1	0	0	25
NNW	0	1	9	4	0	0	14
Variable	0	0	0	0	0	0	0
Total	0	37	78	30	4	0	149

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	3	0	0	0	3
NNE	0	0	7	0	0	0	7
NE	0	1	1	0	0	0	2
ENE	0	2	0	0	0	0	2
E	2	6	0	0	0	0	8
ESE	0	1	0	3	0	0	4
SE	0	5	3	1	0	0	9
SSE	0	3	4	1	0	0	8
S	0	1	3	5	0	0	9
SSW	0	2	0	1	0	0	3
SW	0	0	1	4	0	0	5
WSW	0	3	3	2	0	0	8
W	0	3	6	1	3	0	13
WNW	0	4	6	2	0	0	12
NW	0	3	4	0	0	0	7
NNW	0	1	4	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	2	35	45	20	3	0	105

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	1	3	1	0	0	5
NNE	0	0	2	0	0	0	2
NE	0	0	3	0	0	0	3
ENE	0	2	0	0	0	0	2
E	1	1	1	0	0	0	3
ESE	0	5	0	0	0	0	5
SE	0	3	4	0	0	0	7
SSE	0	1	3	1	0	0	5
S	0	3	3	8	0	0	14
SSW	0	3	1	5	1	0	10
SW	0	5	1	3	1	0	10
WSW	0	7	2	2	0	0	11
W	0	5	1	2	2	0	10
WNW	0	8	2	1	0	0	11
NW	0	1	3	1	0	0	5
NNW	0	3	2	1	0	0	6
Variable	0	0	0	0	0	0	0
Total	1	48	31	25	4	0	109

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	0	14	23	2	0	0	39
NNE	1	17	21	11	0	0	50
NE	2	18	41	11	0	0	72
ENE	3	31	7	0	0	0	41
E	4	17	7	0	0	0	28
ESE	0	16	18	8	0	0	42
SE	2	13	10	12	0	0	37
SSE	0	18	29	9	2	0	58
S	0	6	27	24	4	0	61
SSW	0	10	10	17	4	0	41
SW	0	10	20	12	1	0	43
WSW	1	14	10	3	1	0	29
W	2	26	25	18	6	0	77
WNW	11	28	73	16	1	0	129
NW	9	19	37	8	0	0	73
NNW	1	28	36	17	1	0	83
Variable	1	1	0	0	0	0	2
Total	37	286	394	168	20	0	905

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	6	6	3	0	0	0	15
NNE	8	7	0	0	0	0	15
NE	8	5	1	1	0	0	15
ENE	12	10	0	0	0	0	22
E	9	22	1	0	0	0	32
ESE	4	39	9	1	0	0	53
SE	1	21	18	5	0	0	45
SSE	2	25	34	4	1	0	66
S	1	5	31	16	1	0	54
SSW	0	1	16	15	4	0	36
SW	2	10	25	6	0	0	43
WSW	6	30	12	0	0	0	48
W	14	30	11	3	1	0	59
WNW	25	47	14	0	0	0	86
NW	28	37	5	0	0	0	70
NNW	5	25	6	0	0	0	36
Variable	0	0	0	0	0	0	0
Total	131	320	186	51	7	0	695

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	4	0	0	0	0	0	4
NNE	1	1	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	8	0	0	0	0	0	8
E	11	1	0	0	0	0	12
ESE	7	1	0	0	0	0	8
SE	1	7	0	0	0	0	8
SSE	1	0	0	0	0	0	1
S	2	1	0	0	0	0	3
SSW	1	7	2	0	0	0	10
SW	0	4	1	0	0	0	5
WSW	3	28	1	0	0	0	32
W	14	17	1	0	0	0	32
WNW	9	3	0	0	0	0	12
NW	7	3	0	0	0	0	10
NNW	4	1	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	73	74	5	0	0	0	152

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

Braidwood Generating Station

Period of Record: January - March 2009
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	0	0	0	0	0	0	0
NE	3	0	0	0	0	0	3
ENE	7	0	0	0	0	0	7
E	6	0	0	0	0	0	6
ESE	1	0	0	0	0	0	1
SE	1	2	0	0	0	0	3
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	1	0	0	0	0	1
WSW	2	2	0	0	0	0	4
W	3	1	0	0	0	0	4
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	25	6	0	0	0	0	31

Hours of calm in this stability class: 5
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	2	1	0	0	3
NNE	0	0	2	4	3	0	9
NE	0	0	3	3	0	0	6
ENE	0	1	0	0	0	0	1
E	0	2	2	0	0	0	4
ESE	0	2	4	1	0	0	7
SE	0	0	4	0	0	0	4
SSE	0	0	1	3	1	0	5
S	0	0	0	4	0	3	7
SSW	0	0	3	0	4	2	9
SW	0	1	0	0	1	1	3
WSW	0	0	2	0	1	0	3
W	0	0	0	1	3	0	4
WNW	0	0	15	16	7	0	38
NW	0	0	21	12	5	0	38
NNW	0	1	2	2	2	1	8
Variable	0	0	0	0	0	0	0
Total	0	7	61	47	27	7	149

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	1	6	0	0	7
NE	0	0	1	1	0	0	2
ENE	0	1	1	0	0	0	2
E	0	6	0	0	0	0	6
ESE	0	3	1	0	2	2	8
SE	0	3	3	1	1	0	8
SSE	0	2	1	4	0	0	7
S	0	0	2	1	5	1	9
SSW	0	1	1	0	2	0	4
SW	0	0	0	1	1	1	3
WSW	0	2	2	2	3	0	9
W	0	1	5	0	1	3	10
WNW	0	0	7	5	2	0	14
NW	0	2	2	2	1	0	7
NNW	0	0	5	1	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	21	34	25	18	7	105

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	3	0	0	6
NNE	0	0	0	1	0	0	1
NE	0	0	1	2	0	0	3
ENE	0	1	1	0	0	0	2
E	0	2	1	1	0	0	4
ESE	0	2	2	0	0	0	4
SE	0	1	4	1	1	0	7
SSE	0	0	2	3	0	1	6
S	0	2	3	1	9	0	15
SSW	0	2	0	2	2	4	10
SW	0	5	0	2	0	1	8
WSW	0	6	3	2	2	0	13
W	0	2	3	1	1	2	9
WNW	0	3	3	2	1	0	9
NW	0	0	1	2	3	0	6
NNW	0	3	0	2	0	1	6
Variable	0	0	0	0	0	0	0
Total	0	30	26	25	19	9	109

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	1	19	16	2	0	38
NNE	0	4	13	13	6	5	41
NE	0	11	12	40	8	5	76
ENE	1	10	18	12	0	0	41
E	1	6	11	8	2	0	28
ESE	0	2	12	10	12	9	45
SE	0	7	6	9	7	11	40
SSE	0	2	25	14	7	10	58
S	0	0	7	21	24	9	61
SSW	0	4	9	10	21	8	52
SW	1	8	5	8	5	5	32
WSW	0	7	6	9	3	1	26
W	2	7	11	12	8	13	53
WNW	1	10	23	49	33	13	129
NW	2	16	14	41	28	2	103
NNW	0	10	32	20	14	4	80
Variable	1	1	0	0	0	0	2
Total	9	106	223	292	180	95	905

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	6	13	2	0	0	21
NNE	1	2	7	0	0	0	10
NE	0	2	7	3	0	1	13
ENE	0	7	14	0	0	0	21
E	0	3	9	9	2	0	23
ESE	0	0	24	19	4	6	53
SE	0	2	20	15	8	1	46
SSE	0	1	20	27	12	2	62
S	0	1	12	32	17	7	69
SSW	2	0	3	7	23	16	51
SW	0	3	8	10	5	2	28
WSW	0	4	9	20	4	0	37
W	0	10	11	20	5	1	47
WNW	0	8	25	44	5	0	82
NW	1	7	51	19	1	0	79
NNW	0	4	34	18	0	0	56
Variable	0	0	0	0	0	0	0
Total	4	60	267	245	86	36	698

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	5	1	0	0	8
NNE	0	3	1	0	0	0	4
NE	1	2	0	0	0	0	3
ENE	0	1	0	0	0	0	1
E	0	2	4	1	0	0	7
ESE	0	3	3	6	0	0	12
SE	0	1	4	0	0	0	5
SSE	0	2	6	0	0	0	8
S	0	0	3	0	0	0	3
SSW	1	1	2	3	1	0	8
SW	0	0	5	2	0	0	7
WSW	1	1	1	5	0	0	8
W	0	2	11	20	0	0	33
WNW	1	4	15	10	0	0	30
NW	1	2	7	2	0	0	12
NNW	0	2	3	2	0	0	7
Variable	0	0	0	0	0	0	0
Total	5	28	70	52	1	0	156

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: 2

Braidwood Generating Station

Period of Record: January - March 2009
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	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	1	1	0	0	0	0	2
E	0	1	2	0	0	0	3
ESE	1	0	4	0	0	0	5
SE	1	4	0	0	0	0	5
SSE	0	1	3	0	0	0	4
S	0	1	1	0	0	0	2
SSW	1	1	0	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	1	0	0	3	0	0	4
WNW	0	1	4	0	0	0	5
NW	2	1	1	0	0	0	4
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	7	11	15	3	0	0	36

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: 2

Braidwood Generating Station

Period of Record: April - June 2009
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	6	0	0	0	0	6
NNE	1	12	16	0	0	0	29
NE	0	17	15	0	0	0	32
ENE	0	12	1	0	0	0	13
E	0	8	3	0	0	0	11
ESE	0	4	2	0	0	0	6
SE	1	6	3	4	0	0	14
SSE	0	3	8	0	0	0	11
S	0	1	7	0	0	0	8
SSW	0	0	0	15	1	0	16
SW	0	1	4	2	0	0	7
WSW	1	6	8	6	0	0	21
W	0	17	12	4	0	0	33
WNW	1	16	19	13	0	0	49
NW	0	16	9	5	0	0	30
NNW	0	8	1	1	0	0	10
Variable	1	1	0	0	0	0	2
Total	5	134	108	50	1	0	298

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	0	0	0	0	2
NNE	0	4	6	1	0	0	11
NE	3	3	6	0	0	0	12
ENE	1	3	1	0	0	0	5
E	0	5	0	0	0	0	5
ESE	0	2	0	0	0	0	2
SE	1	7	1	0	0	0	9
SSE	2	5	2	1	0	0	10
S	0	0	1	1	0	0	2
SSW	1	1	1	1	0	0	4
SW	1	4	2	4	0	0	11
WSW	0	0	3	1	0	0	4
W	2	7	3	2	0	0	14
WNW	1	2	4	1	0	0	8
NW	1	5	5	0	0	0	11
NNW	1	3	3	1	0	0	8
Variable	2	0	0	0	0	0	2
Total	16	53	38	13	0	0	120

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	0	0	0	4
NNE	2	5	3	1	0	0	11
NE	0	5	6	0	0	0	11
ENE	3	0	3	0	0	0	6
E	1	6	1	0	0	0	8
ESE	1	1	1	0	0	0	3
SE	2	2	1	0	0	0	5
SSE	0	6	1	0	0	0	7
S	0	0	1	0	0	0	1
SSW	0	1	1	5	1	0	8
SW	1	2	1	1	0	0	5
WSW	1	2	3	1	1	0	8
W	1	3	5	1	0	0	10
WNW	1	4	4	1	0	0	10
NW	1	7	1	0	0	0	9
NNW	0	3	0	1	0	0	4
Variable	1	0	0	0	0	0	1
Total	15	49	34	11	2	0	111

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	7	15	8	0	0	32
NNE	3	48	32	13	0	0	96
NE	8	53	38	4	0	0	103
ENE	7	30	29	0	0	0	66
E	8	24	6	0	0	0	38
ESE	4	25	5	0	0	0	34
SE	2	13	10	2	0	0	27
SSE	1	12	8	1	0	0	22
S	2	9	15	5	2	0	33
SSW	1	5	13	10	7	0	36
SW	2	7	13	12	1	0	35
WSW	2	6	3	3	0	0	14
W	6	14	18	6	1	0	45
WNW	7	34	17	4	0	0	62
NW	3	24	22	0	0	0	49
NNW	0	7	22	4	0	0	33
Variable	1	0	0	0	0	0	1
Total	59	318	266	72	11	0	726

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	6	8	1	0	0	0	15
NNE	6	27	4	1	0	0	38
NE	15	18	1	0	0	0	34
ENE	27	29	1	0	0	0	57
E	24	17	0	0	0	0	41
ESE	8	27	1	0	0	0	36
SE	7	17	11	0	0	0	35
SSE	5	35	9	1	0	0	50
S	3	29	40	12	0	0	84
SSW	3	11	24	11	1	0	50
SW	3	18	10	2	0	0	33
WSW	5	39	3	3	0	0	50
W	16	30	10	0	0	0	56
WNW	13	20	1	0	0	0	34
NW	6	15	4	0	0	0	25
NNW	3	15	4	0	0	0	22
Variable	1	0	0	0	0	0	1
Total	151	355	124	30	1	0	661

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

Braidwood Generating Station

Period of Record: April - June 2009
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	4	0	0	0	0	0	4
NE	9	1	0	0	0	0	10
ENE	15	1	0	0	0	0	16
E	13	1	0	0	0	0	14
ESE	6	2	0	0	0	0	8
SE	6	3	0	0	0	0	9
SSE	3	2	0	0	0	0	5
S	2	0	0	0	0	0	2
SSW	1	0	0	0	0	0	1
SW	5	3	0	0	0	0	8
WSW	11	19	0	0	0	0	30
W	19	9	0	0	0	0	28
WNW	14	1	0	0	0	0	15
NW	6	0	0	0	0	0	6
NNW	2	1	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	118	44	0	0	0	0	162

Hours of calm in this stability class: 15
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	0	0	0	0	0	0	0
NNE	1	0	0	0	0	0	1
NE	3	0	0	0	0	0	3
ENE	7	0	0	0	0	0	7
E	8	0	0	0	0	0	8
ESE	5	4	0	0	0	0	9
SE	2	0	0	0	0	0	2
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	1	0	0	0	0	0	1
SW	4	0	0	0	0	0	4
WSW	4	5	0	0	0	0	9
W	11	2	0	0	0	0	13
WNW	5	0	0	0	0	0	5
NW	5	0	0	0	0	0	5
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	58	11	0	0	0	0	69

Hours of calm in this stability class: 16
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	8	1	0	0	0	9
NNE	0	3	10	7	0	0	20
NE	0	7	19	10	0	0	36
ENE	0	4	6	1	0	0	11
E	1	2	9	3	0	0	15
ESE	0	2	4	1	0	0	7
SE	1	5	2	1	6	0	15
SSE	0	1	4	6	0	0	11
S	0	0	1	6	0	0	7
SSW	0	1	0	3	13	2	19
SW	0	0	0	4	0	0	4
WSW	0	3	2	5	7	0	17
W	0	4	18	12	1	0	35
WNW	1	3	16	10	22	1	53
NW	0	3	14	4	11	0	32
NNW	0	5	0	1	0	0	6
Variable	1	0	0	0	0	0	1
Total	4	51	106	74	60	3	298

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	0	0	0	0	2
NNE	1	3	1	2	0	1	8
NE	2	2	1	10	0	0	15
ENE	1	4	0	1	0	0	6
E	0	3	1	1	0	0	5
ESE	0	3	1	0	0	0	4
SE	0	4	1	1	0	0	6
SSE	0	2	4	2	0	1	9
S	1	0	0	0	0	1	2
SSW	1	4	0	1	1	0	7
SW	1	2	1	1	4	0	9
WSW	0	1	1	1	1	0	4
W	0	6	1	5	0	1	13
WNW	0	1	2	4	1	0	8
NW	1	0	5	5	2	0	13
NNW	0	4	1	1	1	0	7
Variable	1	0	0	0	0	0	1
Total	9	41	20	35	10	4	119

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	1	0	0	5
NNE	0	4	1	2	1	0	8
NE	0	3	3	6	0	0	12
ENE	2	0	0	2	0	0	4
E	1	3	4	2	0	0	10
ESE	1	0	1	0	0	0	2
SE	1	2	1	1	1	0	6
SSE	0	6	0	1	0	0	7
S	0	1	1	0	0	0	2
SSW	0	1	1	0	6	2	10
SW	1	2	0	1	0	0	4
WSW	0	1	2	3	1	1	8
W	1	1	1	6	1	0	10
WNW	0	1	2	2	3	0	8
NW	0	2	4	3	1	0	10
NNW	1	2	1	0	0	0	4
Variable	1	0	0	0	0	0	1
Total	9	31	24	30	14	3	111

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	3	7	9	10	1	31
NNE	2	4	37	22	11	1	77
NE	3	14	49	39	11	0	116
ENE	2	2	26	22	3	0	55
E	2	8	25	19	1	0	55
ESE	0	6	4	22	2	0	34
SE	0	10	4	7	4	1	26
SSE	3	7	6	5	4	1	26
S	0	4	5	15	1	6	31
SSW	0	2	4	9	13	10	38
SW	0	4	5	12	7	3	31
WSW	1	0	6	2	3	0	12
W	0	8	13	14	6	1	42
WNW	2	6	30	15	18	1	72
NW	2	7	12	20	3	0	44
NNW	0	3	4	23	4	0	34
Variable	2	0	0	0	0	0	2
Total	20	88	237	255	101	25	726

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	4	8	3	0	0	15
NNE	0	2	20	6	1	0	29
NE	0	8	26	7	0	0	41
ENE	0	17	36	3	0	0	56
E	0	4	22	11	0	0	37
ESE	0	2	16	15	1	2	36
SE	0	6	25	11	5	0	47
SSE	3	3	16	11	4	1	38
S	1	1	19	35	22	7	85
SSW	0	4	10	31	5	12	62
SW	0	9	13	9	1	0	32
WSW	0	7	13	18	4	0	42
W	0	8	19	19	1	0	47
WNW	1	8	15	19	1	0	44
NW	0	1	22	8	1	0	32
NNW	0	1	14	5	0	0	20
Variable	0	0	0	0	0	0	0
Total	5	85	294	211	46	22	663

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	2	5	0	0	0	9
NNE	1	1	3	0	0	0	5
NE	1	1	3	1	0	0	6
ENE	0	4	12	0	0	0	16
E	1	2	9	0	0	0	12
ESE	0	1	7	6	0	0	14
SE	1	2	4	2	0	0	9
SSE	0	1	3	2	0	0	6
S	0	5	2	0	0	0	7
SSW	0	5	1	0	0	0	6
SW	0	0	3	0	0	0	3
WSW	0	1	5	3	0	0	9
W	0	4	19	13	0	0	36
WNW	0	4	14	5	0	0	23
NW	1	3	5	0	0	0	9
NNW	1	1	5	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	8	37	100	32	0	0	177

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: 1

Braidwood Generating Station

Period of Record: April - June 2009
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	2	1	0	0	0	4
NNE	0	1	1	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	0	4	0	0	0	4
E	1	0	5	2	0	0	8
ESE	0	1	2	1	0	0	4
SE	0	4	2	4	0	0	10
SSE	0	0	1	0	0	0	1
S	0	2	2	0	0	0	4
SSW	0	5	1	0	0	0	6
SW	0	2	0	0	0	0	2
WSW	0	1	0	0	0	0	1
W	2	2	7	7	0	0	18
WNW	4	1	3	1	0	0	9
NW	0	3	3	0	0	0	6
NNW	0	4	1	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	8	29	33	15	0	0	85

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: 1

Braidwood Generating Station

Period of Record: July - September 2009
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	17	2	0	0	0	19
NNE	0	19	2	0	0	0	21
NE	3	42	5	0	0	0	50
ENE	5	33	1	0	0	0	39
E	3	14	0	0	0	0	17
ESE	1	5	1	0	0	0	7
SE	2	7	5	0	0	0	14
SSE	0	11	3	0	0	0	14
S	0	8	2	0	0	0	10
SSW	0	4	19	9	0	0	32
SW	0	10	17	2	0	0	29
WSW	0	14	13	0	0	0	27
W	0	24	18	0	0	0	42
WNW	0	34	10	0	0	0	44
NW	0	43	5	0	0	0	48
NNW	0	20	7	0	0	0	27
Variable	0	0	0	0	0	0	0
Total	14	305	110	11	0	0	440

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: July - September 2009
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	1	6	1	0	0	0	8
NE	3	8	1	0	0	0	12
ENE	4	13	0	0	0	0	17
E	4	3	0	0	0	0	7
ESE	0	4	0	0	0	0	4
SE	0	5	2	0	0	0	7
SSE	0	2	0	0	0	0	2
S	0	3	2	0	0	0	5
SSW	0	0	2	0	0	0	2
SW	1	1	4	0	0	0	6
WSW	1	8	5	0	0	0	14
W	0	3	2	2	0	0	7
WNW	1	7	0	0	0	0	8
NW	1	5	3	0	0	0	9
NNW	1	3	1	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	17	74	25	2	0	0	118

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: July - September 2009
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	2	1	0	0	0	0	3
NNE	4	4	0	0	0	0	8
NE	3	2	1	0	0	0	6
ENE	2	5	0	0	0	0	7
E	2	0	0	0	0	0	2
ESE	1	0	0	0	0	0	1
SE	0	3	0	0	0	0	3
SSE	0	7	1	0	0	0	8
S	0	3	1	1	0	0	5
SSW	0	0	2	1	0	0	3
SW	0	2	5	0	0	0	7
WSW	0	0	4	0	0	0	4
W	0	1	3	4	0	0	8
WNW	2	4	0	0	0	0	6
NW	2	4	1	0	0	0	7
NNW	0	3	2	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	18	39	20	6	0	0	83

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: July - September 2009
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	6	11	0	0	0	0	17
NNE	5	14	1	0	0	0	20
NE	20	29	6	0	0	0	55
ENE	29	31	0	0	0	0	60
E	19	9	0	0	0	0	28
ESE	7	21	1	0	0	0	29
SE	3	12	5	0	0	0	20
SSE	0	14	7	0	0	0	21
S	1	7	9	0	0	0	17
SSW	1	6	27	5	0	0	39
SW	1	19	22	2	0	0	44
WSW	7	27	10	0	0	0	44
W	9	14	5	8	0	0	36
WNW	10	29	7	0	0	0	46
NW	6	19	8	0	0	0	33
NNW	9	23	3	0	0	0	35
Variable	0	0	0	0	0	0	0
Total	133	285	111	15	0	0	544

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: July - September 2009
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	7	1	0	0	0	18
NNE	16	26	0	0	0	0	42
NE	43	8	0	0	0	0	51
ENE	53	11	1	0	0	0	65
E	35	5	0	0	0	0	40
ESE	17	9	0	0	0	0	26
SE	8	37	2	0	0	0	47
SSE	3	16	4	0	0	0	23
S	2	34	9	0	0	0	45
SSW	2	27	22	1	0	0	52
SW	2	14	9	0	0	0	25
WSW	11	21	3	0	0	0	35
W	29	15	0	3	0	0	47
WNW	26	8	3	0	0	0	37
NW	13	15	0	1	0	0	29
NNW	13	11	0	0	0	0	24
Variable	0	0	0	0	0	0	0
Total	283	264	54	5	0	0	606

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: July - September 2009
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	15	1	0	0	0	0	16
NNE	15	0	0	0	0	0	15
NE	24	0	0	0	0	0	24
ENE	30	0	0	0	0	0	30
E	28	0	0	0	0	0	28
ESE	21	4	0	0	0	0	25
SE	2	1	0	0	0	0	3
SSE	6	0	0	0	0	0	6
S	3	0	0	0	0	0	3
SSW	5	3	0	0	0	0	8
SW	3	2	1	0	0	0	6
WSW	11	11	0	0	0	0	22
W	31	1	0	0	0	0	32
WNW	25	0	0	0	0	0	25
NW	13	0	0	0	0	0	13
NNW	12	0	0	0	0	0	12
Variable	0	0	0	0	0	0	0
Total	244	23	1	0	0	0	268

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: 4

Braidwood Generating Station

Period of Record: July - September 2009
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	8	0	0	0	0	0	8
NNE	14	0	0	0	0	0	14
NE	4	0	0	0	0	0	4
ENE	15	0	0	0	0	0	15
E	8	0	0	0	0	0	8
ESE	6	0	0	0	0	0	6
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	0	0	0	0	0	0	0
SW	1	0	0	0	0	0	1
WSW	6	0	0	0	0	0	6
W	6	0	0	0	0	0	6
WNW	16	0	0	0	0	0	16
NW	8	0	0	0	0	0	8
NNW	5	0	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	99	0	0	0	0	0	99

Hours of calm in this stability class: 33
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: July - September 2009
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	10	9	0	0	0	19
NNE	0	13	7	0	0	0	20
NE	1	23	16	3	1	0	44
ENE	1	29	14	0	0	0	44
E	3	14	5	0	0	0	22
ESE	1	2	4	1	0	0	8
SE	0	5	8	1	1	0	15
SSE	0	3	5	1	0	0	9
S	0	7	7	1	0	0	15
SSW	0	0	5	16	8	2	31
SW	0	2	11	14	1	0	28
WSW	0	4	12	6	0	0	22
W	0	9	20	12	0	0	41
WNW	0	13	24	11	0	0	48
NW	0	10	31	3	0	0	44
NNW	0	15	9	6	0	0	30
Variable	0	0	0	0	0	0	0
Total	6	159	187	75	11	2	440

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: July - September 2009
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	1	5	1	0	0	0	7
NNE	1	4	1	0	0	0	6
NE	2	9	3	1	0	0	15
ENE	1	10	3	0	0	0	14
E	1	5	1	0	0	0	7
ESE	0	2	2	0	0	0	4
SE	0	1	4	2	0	0	7
SSE	0	1	0	0	0	0	1
S	0	4	0	2	0	0	6
SSW	0	0	2	0	0	0	2
SW	0	2	1	3	0	0	6
WSW	0	4	6	2	0	0	12
W	0	1	2	3	0	2	8
WNW	1	4	3	0	0	0	8
NW	0	5	4	2	0	0	11
NNW	0	1	3	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	7	58	36	15	0	2	118

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: July - September 2009
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	1	2	1	0	0	0	4
NNE	1	5	1	0	0	0	7
NE	2	3	1	1	0	0	7
ENE	1	4	2	0	0	0	7
E	0	0	0	0	0	0	0
ESE	1	0	1	0	0	0	2
SE	0	2	1	0	0	0	3
SSE	0	0	6	0	0	0	6
S	0	0	4	1	1	0	6
SSW	0	0	0	3	1	0	4
SW	0	0	2	4	0	0	6
WSW	0	0	2	1	1	0	4
W	0	0	0	1	1	3	5
WNW	1	3	1	3	0	0	8
NW	0	1	2	3	0	0	6
NNW	1	4	1	2	0	0	8
Variable	0	0	0	0	0	0	0
Total	8	24	25	19	4	3	83

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: July - September 2009
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	12	8	0	0	0	21
NNE	2	9	3	1	0	0	15
NE	5	18	18	9	0	0	50
ENE	4	33	29	0	0	0	66
E	1	17	15	1	0	0	34
ESE	1	5	13	9	0	0	28
SE	0	6	10	5	0	0	21
SSE	1	2	12	10	0	0	25
S	2	2	5	5	1	0	15
SSW	0	1	8	22	19	0	50
SW	0	3	20	12	0	0	35
WSW	1	13	10	8	0	0	32
W	2	12	12	2	6	2	36
WNW	1	7	19	11	5	1	44
NW	1	8	26	11	0	0	46
NNW	2	5	18	2	0	0	27
Variable	0	0	0	0	0	0	0
Total	24	153	226	108	31	3	545

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: July - September 2009
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	7	5	0	1	0	14
NNE	0	6	12	5	0	0	23
NE	1	7	46	4	0	0	58
ENE	1	28	42	0	0	0	71
E	2	9	35	2	0	0	48
ESE	0	4	14	7	0	0	25
SE	0	5	24	16	0	0	45
SSE	1	4	14	7	0	0	26
S	0	2	13	30	1	0	46
SSW	0	3	15	31	9	0	58
SW	0	7	10	10	1	0	28
WSW	0	6	15	6	0	0	27
W	0	3	20	3	2	0	28
WNW	1	8	26	3	3	1	42
NW	1	14	21	5	0	1	42
NNW	0	7	19	0	0	0	26
Variable	0	0	0	0	0	0	0
Total	8	120	331	129	17	2	607

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: July - September 2009
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	5	1	0	0	8
NNE	0	3	6	0	0	0	9
NE	1	2	23	2	0	0	28
ENE	0	19	18	1	0	0	38
E	1	2	13	3	0	0	19
ESE	0	1	19	12	0	0	32
SE	1	6	6	1	0	0	14
SSE	0	2	1	0	0	0	3
S	0	3	4	0	0	0	7
SSW	0	4	3	0	0	0	7
SW	0	3	6	3	0	0	12
WSW	0	1	5	1	0	0	7
W	0	1	19	4	0	0	24
WNW	0	3	19	3	0	0	25
NW	0	2	22	1	0	0	25
NNW	2	4	15	0	0	0	21
Variable	0	0	0	0	0	0	0
Total	5	58	184	32	0	0	279

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: July - September 2009
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	6	3	0	0	0	11
NNE	1	4	4	0	0	0	9
NE	2	5	9	1	0	0	17
ENE	2	7	8	0	0	0	17
E	2	1	7	2	0	0	12
ESE	0	3	3	1	0	0	7
SE	2	1	1	0	0	0	4
SSE	3	3	2	0	0	0	8
S	0	3	3	0	0	0	6
SSW	0	1	0	0	0	0	1
SW	1	1	0	0	0	0	2
WSW	1	0	1	0	0	0	2
W	0	0	5	2	0	0	7
WNW	0	0	6	0	0	0	6
NW	2	2	5	0	0	0	9
NNW	0	4	8	2	0	0	14
Variable	0	0	0	0	0	0	0
Total	18	41	65	8	0	0	132

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: October - December 2009
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	3	0	0	0	3
NNE	0	0	3	0	0	0	3
NE	0	2	1	0	0	0	3
ENE	0	4	0	0	0	0	4
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	2	1	0	0	0	3
S	0	0	2	3	0	0	5
SSW	0	0	5	6	0	0	11
SW	0	2	3	0	0	0	5
WSW	0	0	10	0	0	0	10
W	0	5	11	7	0	0	23
WNW	0	2	6	0	0	0	8
NW	0	2	5	0	0	0	7
NNW	0	3	1	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	0	24	51	16	0	0	91

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	2	0	0	0	3
SSE	0	2	2	1	0	0	5
S	0	4	3	1	0	0	8
SSW	0	4	5	1	0	0	10
SW	1	0	4	0	0	0	5
WSW	0	2	5	1	0	0	8
W	0	4	3	3	0	0	10
WNW	0	2	1	0	0	0	3
NW	0	1	1	0	0	0	2
NNW	1	2	2	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	2	22	30	7	0	0	61

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	2	0	0	0	0	3
ENE	1	1	0	0	0	0	2
E	1	0	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	4	5	0	0	0	9
S	0	2	5	1	0	0	8
SSW	0	2	4	1	0	0	7
SW	0	0	4	1	0	0	5
WSW	0	4	3	0	0	0	7
W	0	3	2	0	0	0	5
WNW	1	7	0	0	0	0	8
NW	0	2	0	0	0	0	2
NNW	1	2	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	5	31	23	3	0	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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	6	15	11	3	0	0	35
NNE	7	29	6	0	0	0	42
NE	13	40	25	0	0	0	78
ENE	7	52	33	0	0	0	92
E	15	28	25	0	0	0	68
ESE	6	14	13	1	0	0	34
SE	3	29	23	0	0	0	55
SSE	3	39	41	3	0	0	86
S	0	17	38	12	0	0	67
SSW	0	10	37	29	0	0	76
SW	3	23	60	25	0	0	111
WSW	3	59	56	13	9	1	141
W	14	48	42	20	0	0	124
WNW	5	38	34	1	0	0	78
NW	10	20	21	0	0	0	51
NNW	3	20	34	2	0	0	59
Variable	0	0	0	0	0	0	0
Total	98	481	499	109	9	1	1197

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	1	5	0	0	0	0	6
NNE	6	13	0	0	0	0	19
NE	6	11	0	0	0	0	17
ENE	13	5	0	0	0	0	18
E	13	13	10	0	0	0	36
ESE	11	31	10	1	0	0	53
SE	4	42	24	1	0	0	71
SSE	3	41	24	1	0	0	69
S	2	37	57	6	0	0	102
SSW	0	8	28	11	0	0	47
SW	2	10	14	2	0	0	28
WSW	2	31	11	1	0	0	45
W	11	13	5	2	0	0	31
WNW	16	17	2	0	0	0	35
NW	11	13	1	0	0	0	25
NNW	6	8	0	0	0	0	14
Variable	0	0	0	0	0	0	0
Total	107	298	186	25	0	0	616

Hours of calm in this stability class: 5
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	0	0	0	0	0	2
NNE	3	0	0	0	0	0	3
NE	3	2	0	0	0	0	5
ENE	3	0	0	0	0	0	3
E	14	2	0	0	0	0	16
ESE	4	6	0	0	0	0	10
SE	1	1	0	0	0	0	2
SSE	2	0	0	0	0	0	2
S	2	2	0	0	0	0	4
SSW	1	2	1	0	0	0	4
SW	3	2	0	0	0	0	5
WSW	5	8	0	0	0	0	13
W	9	2	0	0	0	0	11
WNW	12	7	0	0	0	0	19
NW	3	1	0	0	0	0	4
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	68	35	1	0	0	0	104

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	6	0	0	0	0	0	6
ENE	2	0	0	0	0	0	2
E	5	0	0	0	0	0	5
ESE	4	1	0	0	0	0	5
SE	3	0	0	0	0	0	3
SSE	2	0	0	0	0	0	2
S	1	0	0	0	0	0	1
SSW	1	0	0	0	0	0	1
SW	3	0	0	0	0	0	3
WSW	3	0	0	0	0	0	3
W	5	0	0	0	0	0	5
WNW	4	0	0	0	0	0	4
NW	0	0	0	0	0	0	0
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	40	1	0	0	0	0	41

Hours of calm in this stability class: 6
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	2	1	0	0	3
NNE	0	0	2	1	0	0	3
NE	0	0	3	0	0	0	3
ENE	0	0	3	0	0	0	3
E	0	0	2	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	0	0	1	0	0	0	1
SSE	0	0	2	0	1	0	3
S	1	0	1	1	2	0	5
SSW	0	0	2	4	6	0	12
SW	0	0	3	1	0	0	4
WSW	0	0	5	5	0	0	10
W	0	1	8	3	1	0	13
WNW	0	0	5	9	2	0	16
NW	0	0	1	4	0	0	5
NNW	0	2	1	1	0	0	4
Variable	0	0	0	0	0	0	0
Total	1	3	41	30	12	0	87

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	1	1	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	1	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	1	1	1	0	4
SSE	0	0	2	1	1	0	4
S	0	1	6	1	1	0	9
SSW	0	1	3	2	1	0	7
SW	0	1	3	2	0	0	6
WSW	1	1	4	1	0	0	7
W	0	1	3	0	2	0	6
WNW	0	0	0	2	0	0	2
NW	0	2	1	0	1	0	4
NNW	0	1	3	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	1	10	27	11	7	0	56

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	0	2	0	0	0	3
ENE	1	0	1	0	0	0	2
E	1	0	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	0	1	3	0	0	0	4
SSE	0	0	6	0	0	0	6
S	0	0	1	5	2	0	8
SSW	0	0	2	4	0	0	6
SW	0	0	3	1	1	0	5
WSW	0	1	2	2	0	0	5
W	1	1	1	2	0	0	5
WNW	0	3	4	0	0	0	7
NW	0	1	2	0	0	0	3
NNW	0	3	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	4	11	27	14	3	0	59

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	3	17	6	3	0	31
NNE	0	4	25	5	0	0	34
NE	1	22	26	22	8	0	79
ENE	2	12	38	34	0	0	86
E	1	16	16	26	10	3	72
ESE	0	7	9	6	5	1	28
SE	3	10	22	18	7	0	60
SSE	1	6	33	25	13	0	78
S	0	3	12	28	15	3	61
SSW	0	2	12	36	26	5	81
SW	2	11	36	33	18	0	100
WSW	1	9	42	41	8	0	101
W	2	22	32	34	5	2	97
WNW	1	15	32	41	11	3	103
NW	3	8	20	23	8	0	62
NNW	2	8	19	31	2	0	62
Variable	0	0	0	0	0	0	0
Total	21	158	391	409	139	17	1135

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 63
Hours of missing stability measurements in all stability classes: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	2	1	5	0	0	0	8
NNE	2	2	5	6	0	0	15
NE	4	2	8	5	0	0	19
ENE	4	7	3	1	0	0	15
E	3	7	12	5	3	1	31
ESE	0	3	5	14	3	3	28
SE	0	4	32	29	2	1	68
SSE	0	4	33	32	8	0	77
S	0	6	16	53	12	2	89
SSW	2	0	17	24	12	1	56
SW	1	0	10	18	2	0	31
WSW	0	1	14	15	0	0	30
W	1	3	18	4	1	2	29
WNW	2	1	16	13	0	0	32
NW	0	2	22	8	0	0	32
NNW	0	1	12	1	0	0	14
Variable	0	0	0	0	0	0	0
Total	21	44	228	228	43	10	574

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 47
Hours of missing stability measurements in all stability classes: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	1	0	0	0	1
NNE	0	0	3	0	0	0	3
NE	0	2	0	5	0	0	7
ENE	0	0	1	0	0	0	1
E	0	0	1	5	0	0	6
ESE	0	0	7	3	0	0	10
SE	0	2	8	1	0	0	11
SSE	0	1	2	0	0	0	3
S	1	0	1	0	0	0	2
SSW	0	2	3	0	0	0	5
SW	0	2	2	1	0	0	5
WSW	0	1	5	1	0	0	7
W	0	0	3	3	0	0	6
WNW	0	3	5	9	0	0	17
NW	0	2	9	0	0	0	11
NNW	0	3	5	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	1	18	56	28	0	0	103

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: 22

Braidwood Generating Station

Period of Record: October - December 2009
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	1	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	1	1	0	0	0	2
E	0	1	4	2	0	0	7
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	1	1	0	0	0	2
S	0	2	0	0	0	0	2
SSW	0	7	4	0	0	0	11
SW	0	2	0	0	0	0	2
WSW	0	2	0	0	0	0	2
W	1	4	2	0	0	0	7
WNW	0	2	0	0	0	0	2
NW	0	1	2	0	0	0	3
NNW	0	3	1	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	1	28	15	2	0	0	46

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: 22

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APPENDIX G

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-456
50-457

BRAIDWOOD STATION
UNITS 1 and 2

Annual Radiological
Groundwater Protection Program Report

1 January through 31 December 2009

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear

Braidwood Station
Braceville, IL 60407

May 2010

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Appendices

Appendix A Location Designation

Tables

Table A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

Figures

Figure A-1: Sampling Locations near the Site Boundary of the Braidwood Station, 2009

Figure A-2: Intermediate Sampling Locations of the Braidwood Station, 2009

Figure A-3: Distant Sampling Locations of the Braidwood Station, 2009

Appendix B Data Tables

Tables

Table B-I.1 Concentrations of Tritium and Strontium in Groundwater Samples Collected in the Vicinity of Braidwood Station, 2009.

Table B-I.2 Concentrations of Gamma Emitters in Groundwater Samples Collected in the Vicinity of Braidwood Station, 2009.

Table B-II.1 Concentrations of Tritium in Surface Water Samples Collected in the Vicinity of Braidwood Station, 2009.

I. Summary and Conclusions

In 2009, 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 2009. During that time period, 880 analyses were performed on 878 samples from 228 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 except for Potassium-40. In the case of tritium, Exelon specified that it's laboratories achieve a lower limit of detection 10 times lower than that required by federal regulation.

Strontium-89/90 was not detected at a concentration greater than the LLD of 2.0 picoCuries per liter (pCi/L) in any of the groundwater samples tested. Strontium-89/90 in surface water was not analyzed in 2009.

No tritium was detected in the groundwater 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. Tritium was not detected in any surface water samples greater than 20,000 pCi/L. Low levels of tritium were detected at concentrations greater than the LLD of 200 pCi/L in 100 of 869 analyses. The tritium concentrations ranged from 154 ± 97 pCi/L to 5,510 ± 602 pCi/L. The tritium that was detected in the groundwater is believed to be the result of isolated historical releases and/or background from external sources greater than 200 pCi/L. With ongoing investigation of the site groundwater, the Radiological Groundwater Protection Program (RGPP) may expand as needed.

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II. Introduction

The Braidwood Station, consisting of two 3587 MWt pressurized water reactors owned and operated by Exelon Corporation, is located in Will County, Illinois. Unit No. 1 went critical on 29 May 1987. Unit No. 2 went critical on 08 March 1988. The site is located in northeastern Illinois, 15 miles south-southwest of Joliet, Illinois and 60 miles southwest of Chicago and southwest of the Kankakee River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. Midwest Labs (EIML) on samples collected in 2009.

A. Objective of the RGPP

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

1. Identify suitable locations to monitor and evaluate potential impacts from station operations before significant 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 evaluate 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. Assessed results to monitor for adverse trends.

6. 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 water are collected, managed, transported and analyzed in accordance with approved procedures following EPA methods. Both groundwater and surface water are collected. Sample locations, sample collection frequencies and analytical frequencies are controlled 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 deliverables as data are received.

Analytical data results are reviewed by both station personnel and an independent hydro geologist for adverse trends or changes to hydrogeologic conditions.

D. Characteristics of Tritium (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary

hydrogen.

Tritiated water behaves the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through the skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. Within one month or so after ingestion, essentially all tritium is cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-7 and/or boron-10 are activated to produce tritium. 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 the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (3He). This radioactive decay releases a beta particle (low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

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 2009.
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.

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.

The pre-operational REMP contained analytical results from samples collected from the surface water and groundwater.

At the upstream Kankakee River collection point, BD-25, monthly composites of weekly sample collections from all surface water locations indicated tritium concentrations were not detectable above the LLD (<200 pCi/L). Monthly composites of weekly sample collections from all surface water locations indicate strontium-89, strontium-90, cesium-134 and cesium-137 concentrations were less than their specified LLDs.

Groundwater was collected from one off-site well on a quarterly basis. Gamma isotopic, radiostrontium and tritium analyses were performed on all samples. Strontium-89, strontium-90, tritium and gamma emitters were below their respective LLDs.

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 2009. RadNet provides tritium precipitation concentration data for samples collected at stations through out the U.S. from 1960 up to and including 2009. 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. Groundwater Results

Groundwater

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

<u>Tritium</u>

Samples from all locations were analyzed for tritium activity (Table B-I.1, Appendix B). Tritium values ranged from the detection limit to 5,510 pCi/l. Some contamination still exists and monitoring is ongoing.

<u>Strontium</u>

Strontium-90 was analyzed for in 1 sample and was less than the required detection limit of 2.0 pCi/liter. (Table B-I.1, Appendix B).

Gamma Emitters

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

B. Surface Water Results

Surface Water

Samples were collected from fourteen surface water locations throughout the year in accordance with the station radiological groundwater protection program. All required LLDs were met. 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 detection limit to 330 pCi/l.

Strontium

Strontium-90 was not analyzed in 2009.

Gamma Emitters

Gamma emitters were not analyzed in 2009.

C. Drinking Water Well Survey

Drinking water wells near Braidwood Station were sampled quarterly in 2009.

D. Summary of Results – Inter-Laboratory Comparison Program

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

E. Leaks, Spills, and Releases

Previously identified contaminated groundwater plumes are being addressed by the Braidwood Station tritium remediation activities.

There were no liquid leaks, spills, or releases in 2009 that affected groundwater.

F. Trends and Analyses

Monitoring of remediation activities indicate that tritium concentrations in affected areas are trending down.

G. Investigations

Investigation of historic spills and the groundwater contamination has resulted in groundwater remediation activities at Braidwood Station.

H. Actions Taken

1. Compensatory Actions

All Circulating Water Blowdown valve vaults were coated to prevent any leakage of water from the vaults to the groundwater. A remote leakage detection system has been installed which provides continuous monitoring of the vaults. Operations procedures are in place for actions to take in the event the leak detection system alarms. Walkdowns of the Circulating Water Blowdown pipeline and vaults were performed weekly.

2. Installation of Monitoring Wells

Exelon has installed a permanent monitoring well network that ensures that ground water will be appropriately monitored around the plant and at the various remediation sites. Monitoring well locations were based on the kind of up gradient potential contamination source, ground flow direction, and source concentration. Some monitoring points are not primarily used for sampling but rather to measure ground water elevation. Water elevation is used extensively around active remediation sites to verify that ground water is still flowing toward extraction wells.

3. Actions to Recover/Reverse Plumes

Vacuum Breaker 1 area: Three extraction wells have been installed in this area to remove contaminated ground water. Monitoring of this activity indicates the remediation is proceeding acceptably.
Vacuum Breaker 2 area: Two extraction wells have been installed in this area to remove contaminated ground water. These wells, which became operational in 2008, discharge to the Exelon Pond. The wells are in place to remediate a previously identified contamination plume and were not installed to remediate contamination from a new spill.

Vacuum Breakers 4, 6, & 7: Monitoring wells have been installed within and down gradient of these plumes which originated from vacuum breaker valves along the blowdown line. These sites are being remediated by monitored natural attenuation.

Exelon Pond area: The combination of groundwater sample monitoring and water level monitoring ensures that the active remedial pumping of Exelon Pond continues to capture the tritium that spilled from vacuum breakers 2 and 3 almost ten years ago. Monitoring to date has shown marked reduction in the most contaminated area and the station continues to monitor plume capture to determine whether adjustments are needed in the pumping rate.

APPENDIX A

LOCATION DESIGNATION

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

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-19R	Monitoring Well
BL-20D	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
C-1D	Monitoring Well
C-2D	Monitoring Well
CD-1D	Monitoring Well
D-2D	Monitoring Well
D-3D	Monitoring Well
DITCH (DS-2)	Surface Water
EXELON POND	Surface Water
F-1D	Monitoring Well
F-3D	Monitoring Well
F-4D	Monitoring Well
F-5D	Monitoring Well
F-6D	Monitoring Well
F-7D	Monitoring Well
F-8D	Monitoring Well
F-9D	Monitoring Well
FATLAN POND	Surface Water
G-2	Monitoring Well
G-2D	Monitoring Well
G-3	Monitoring Well
G-4S	Monitoring Well
G-5S	Monitoring Well
G-6S	Monitoring Well
LAKE DISCHARGE CANAL	Surface Water
LAKE INTAKE	Surface Water
MW-102R	Monitoring Well
MW-103	Monitoring Well
MW-105	Monitoring Well
MW-105D	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

Station Code	Sample Description
MW-106D	Monitoring Well
MW-109D	Monitoring Well
MW-11	Monitoring Well
MW-110	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
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-148D	Monitoring Well
MW-149D	Monitoring Well
MW-150	Monitoring Well
MW-150D	Monitoring Well
MW-151D	Monitoring Well
MW-154	Monitoring Well
MW-155	Monitoring Well
MW-156	Monitoring Well
MW-157D	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

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

Station Code	Sample Description
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
P-2D	Monitoring Well
P-4D	Monitoring Well
P-5D	Monitoring Well
PW-001	Monitoring Well
PW-002	Monitoring Well
PW-003	Monitoring Well
PW-004	Monitoring Well
PW-005	Monitoring Well
PW-006	Monitoring Well
PW-007	Monitoring Well
PW-008	Monitoring Well
PW-009	Monitoring Well
PW-006A	Monitoring Well
PW-006B	Monitoring Well
PW-006P	Surface Water
PW-011	Monitoring Well
PW-013	Monitoring Well
PW-014	Monitoring Well
PW-015	Monitoring Well
PW-016	Monitoring Well
PW-13	Monitoring Well
PW-485	Monitoring Well
RW-10	Monitoring Well
RW-5	Monitoring Well
RW-6	Monitoring Well
RW-7	Monitoring Well
RW-9	Monitoring Well
S-1D	Monitoring Well
S-2D	Monitoring Well
S-4D	Monitoring Well
S-7D	Monitoring Well
S-8DR	Monitoring Well
SG-BW-105	Surface Water
SW-05	Surface Water
SW-101	Surface Water
SW-102	Surface Water
SW-103	Surface Water
SW-104 A DITCH	Surface Water
TB-20	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

Station Code	Sample Description
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
VB10-1	Monitoring Well
VB1-1	Monitoring Well
VB1-10D	Monitoring Well
VB11-1	Monitoring Well
VB1-11D	Monitoring Well
VB1-12D	Monitoring Well
VB1-2D	Monitoring Well
VB1-3D	Monitoring Well
VB1-4D	Monitoring Well
VB1-5D	Monitoring Well
VB1-6D	Monitoring Well
VB1-7D	Monitoring Well
VB1-8D	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
VB2-9	Monitoring Well
VB-2-10D	Monitoring Well
VB3-10D	Monitoring Well
VB-3-2	Monitoring Well
VB3-4D	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Braidwood Station, 2009

Station Code	Sample Description
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
WCFPD-1D	Monitoring Well
WCFPD-2DR	Monitoring Well
WDFPD-1D	Monitoring Well
WDFPD-2DR	Monitoring Well
WELL D-1D	Monitoring Well

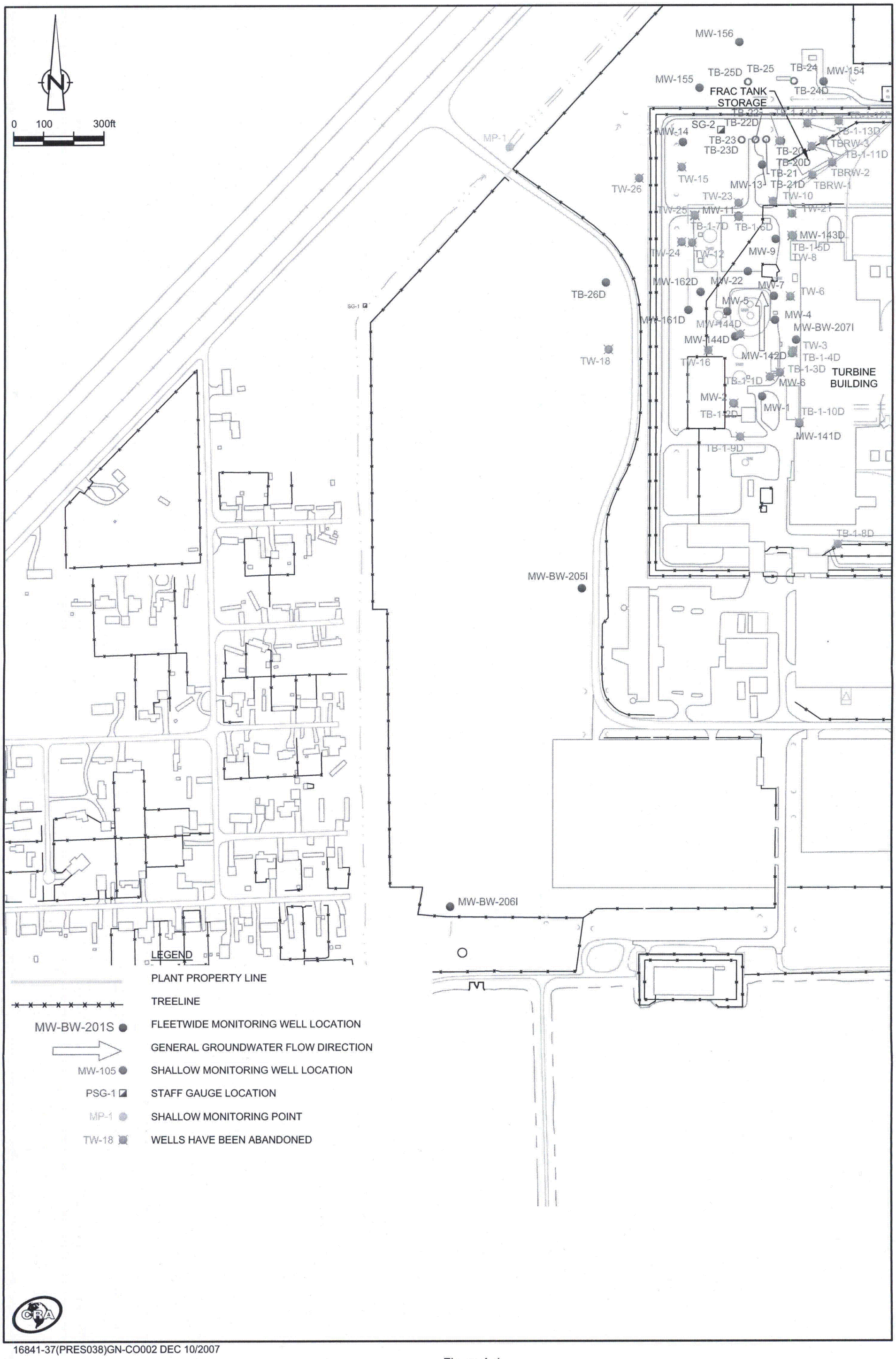

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Figure A-1
Sampling Locations near the Site Boundary of Braidwood Station, 2009

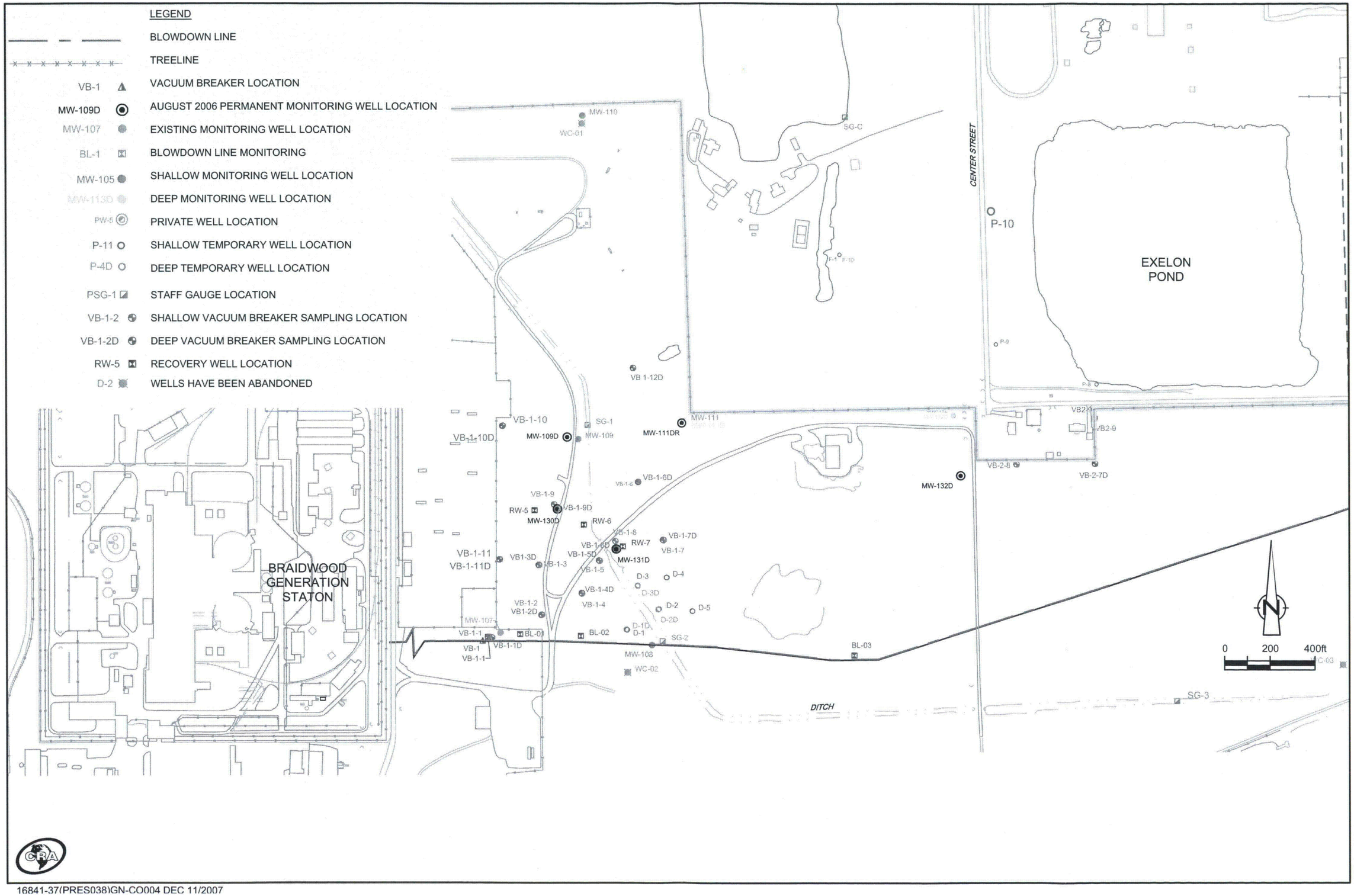

Figure A-2
Intermediate Sampling Locations of the Braidwood Station, 2009

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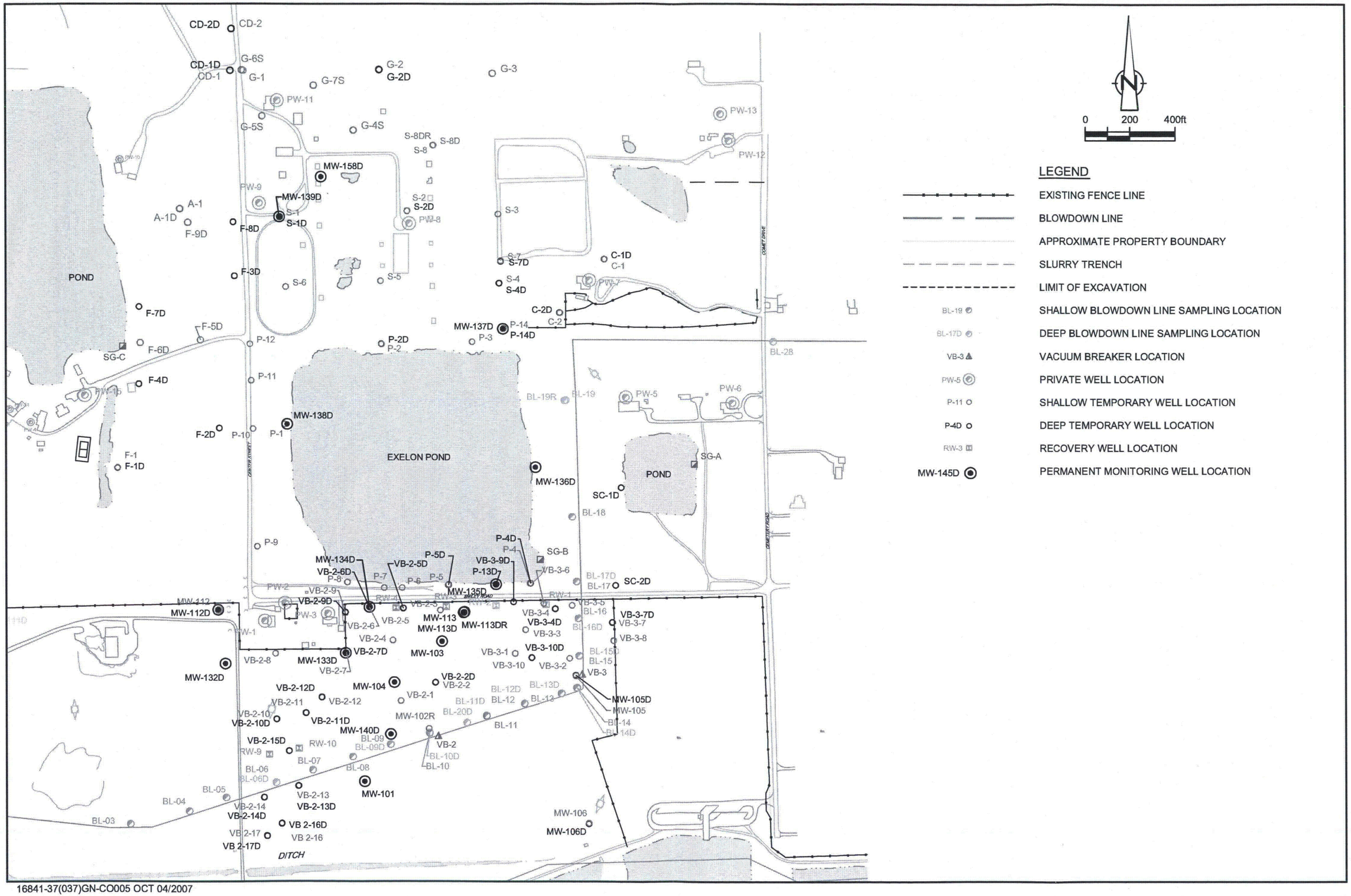

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Figure A-3
Distant Sampling Locations of the Braidwood Station, 2009

APPENDIX B

DATA TABLES

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
BL-03	01/15/09	< 187	
BL-03	02/12/09	< 170	
BL-03	03/12/09	< 197	
BL-03	04/16/09	< 177	
BL-03	05/14/09	< 198	
BL-03	06/09/09	< 177	
BL-03	07/14/09	< 163	
BL-03	08/13/09	< 179	
BL-03	09/16/09	< 180	
BL-03	10/13/09	< 177	
BL-03	11/12/09	< 160	
BL-03	12/08/09	< 173	
BL-06	01/15/09	< 191	
BL-06	02/12/09	280 ± 122	
BL-06	03/11/09	< 195	
BL-06	04/16/09	191 ± 113	
BL-06	05/14/09	< 196	
BL-06	06/10/09	< 150	
BL-06	07/14/09	< 154	
BL-06	08/13/09	166 ± 105	
BL-06	09/17/09	< 165	
BL-06	10/14/09	< 176	
BL-06	11/12/09	< 168	
BL-06	12/10/09	< 166	
BL-06D	03/11/09	< 198	
BL-06D	06/10/09	< 147	
BL-06D	09/17/09	< 165	
BL-06D	12/10/09	< 164	
BL-09D	10/14/09	< 176	
BL-10D	10/15/09	< 165	
BL-11	01/15/09	< 196	
BL-11	02/12/09	< 155	
BL-11	03/12/09	< 192	
BL-11	04/16/09	< 172	
BL-11	05/14/09	< 198	
BL-11	06/08/09	< 176	
BL-11	07/14/09	< 175	
BL-11	08/12/09	< 180	
BL-11	09/16/09	< 174	
BL-11	10/14/09	< 162	
BL-11	11/12/09	< 164	
BL-11	12/10/09	< 163	
BL-11D	10/15/09	< 170	
BL-12D	10/15/09	< 172	
BL-13D	10/15/09	< 175	
BL-14D	10/15/09	< 178	
BL-15D	10/15/09	< 177	
BL-16D	10/15/09	< 178	
BL-17D	10/14/09	< 166	
BL-18D	10/14/09	< 165	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
BL-19R	01/15/09	< 193	
BL-19R	02/12/09	< 173	
BL-19R	03/13/09	< 133	
BL-19R	04/15/09	< 172	
BL-19R	05/13/09	< 135	
BL-19R	06/08/09	< 170	
BL-19R	07/13/09	< 159	
BL-19R	08/12/09	< 182	
BL-19R	09/16/09	< 176	
BL-19R	10/14/09	< 163	
BL-19R	11/11/09	< 159	
BL-19R	12/09/09	< 159	
BL-20D	10/14/09	< 142	
BL-21	01/13/09	< 173	
BL-21	02/10/09	< 170	
BL-21	03/13/09	< 133	
BL-21	04/15/09	< 158	
BL-21	05/12/09	< 182	
BL-21	06/09/09	< 186	
BL-21	07/14/09	< 181	
BL-21	08/12/09	< 173	
BL-21	09/16/09	< 176	
BL-21	10/13/09	< 146	
BL-21	11/11/09	< 164	
BL-21	12/08/09	< 161	
BL-22	01/13/09	< 171	
BL-22	02/10/09	< 192	
BL-22	03/12/09	< 133	
BL-22	04/15/09	< 156	
BL-22	05/15/09	< 167	
BL-22	06/10/09	< 191	
BL-22	07/13/09	< 175	
BL-22	08/12/09	< 177	
BL-22	09/15/09	< 154	
BL-22	10/13/09	< 151	
BL-22	11/11/09	< 161	
BL-22	12/08/09	< 165	
BL-23	01/14/09	< 180	
BL-23	02/10/09	< 192	
BL-23	03/12/09	< 130	
BL-23	04/16/09	< 172	
BL-23	05/12/09	< 182	
BL-23	06/08/09	< 191	
BL-23	07/13/09	< 177	
BL-23	08/12/09	< 180	
BL-23	09/15/09	< 172	
BL-23	10/12/09	< 160	
BL-23	11/11/09	< 164	
BL-23	12/08/09	< 161	
BL-24	01/14/09	< 185	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
BL-24	02/10/09	< 189	
BL-24	03/12/09	< 173	
BL-24	04/16/09	< 172	
BL-24	05/13/09	< 143	
BL-24	06/08/09	< 190	
BL-24	07/13/09	< 176	
BL-24	08/12/09	< 169	
BL-24	09/15/09	< 154	
BL-24	10/13/09	< 150	
BL-24	11/11/09	< 164	
BL-24	12/08/09	< 161	
BL-25	01/14/09	< 184	
BL-25	02/10/09	< 190	
BL-25	03/12/09	< 133	
BL-25	04/15/09	< 158	
BL-25	05/13/09	< 147	
BL-25	06/09/09	< 188	
BL-25	07/14/09	< 181	
BL-25	08/11/09	< 153	
BL-25	09/15/09	< 189	
BL-25	10/12/09	< 147	
BL-25	11/10/09	< 159	
BL-25	12/10/09	< 163	
BL-26	01/13/09	< 165	
BL-26	02/10/09	< 191	
BL-26	03/09/09	< 165	
BL-26	04/14/09	< 156	
BL-26	05/12/09	< 182	
BL-26	06/08/09	< 172	
BL-26	07/13/09	< 175	
BL-26	08/11/09	< 158	
BL-26	09/14/09	< 161	
BL-26	10/12/09	< 148	
BL-26	11/10/09	< 186	
BL-26	12/08/09	< 167	
BL-27	01/14/09	< 185	
BL-27	02/10/09	< 181	
BL-27	03/12/09	< 135	
BL-27	04/15/09	< 157	
BL-27	05/13/09	< 183	
BL-27	06/09/09	< 192	
BL-27	07/14/09	< 187	
BL-27	08/12/09	< 157	
BL-27	09/15/09	< 194	
BL-27	10/13/09	< 142	
BL-27	11/10/09	< 180	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
BL-27	12/08/09	< 165	
C-1D	10/13/09	< 165	
C-2D	10/13/09	< 163	
D-2D	10/13/09	< 169	
D-3D	10/13/09	635 ± 135	
DS-2	03/11/09	< 189	
DS-2	06/15/09	< 174	
DS-2	09/14/09	< 167	
EXELON POND	04/18/09	462 ± 134	
EXELON POND	06/26/09	195 ± 115	
EXELON POND	09/14/09	302 ± 112	
EXELON POND	10/14/09	247 ± 113	
EXELON POND	12/09/09	175 ± 113	
F-1D	10/12/09	< 179	
F-3D	10/13/09	468 ± 126	
F-4D	10/12/09	< 189	
F-5D	03/10/09	883 ± 151	
F-5D	04/15/09	686 ± 138	
F-5D	05/14/09	818 ± 161	
F-5D	06/08/09	765 ± 147	
F-5D	07/13/09	609 ± 149	
F-5D	08/13/09	614 ± 138	
F-5D	09/16/09	485 ± 127	
F-5D	10/12/09	617 ± 132	
F-5D	11/11/09	530 ± 127	
F-5D	12/09/09	575 ± 125	
F-6D	01/15/09	< 191	
F-6D	02/12/09	171 ± 113	
F-6D	03/11/09	< 193	
F-6D	04/15/09	< 173	
F-6D	06/08/09	< 174	
F-6D	07/13/09	< 164	
F-6D	08/13/09	< 183	
F-6D	09/16/09	< 175	
F-6D	10/12/09	< 176	
F-6D	11/11/09	< 162	
F-6D	12/09/09	< 159	
F-7D	10/12/09	922 ± 173	
F-8D	10/13/09	289 ± 122	
F-9D	01/15/09	679 ± 153	
F-9D	02/13/09	560 ± 138	
F-9D	03/12/09	198 ± 129	
F-9D	04/15/09	876 ± 153	
F-9D	05/14/09	679 ± 154	
F-9D	06/09/09	1180 ± 170	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
F-9D	07/14/09	875 ± 176	
F-9D	08/14/09	990 ± 158	
F-9D	09/17/09	783 ± 149	
F-9D	10/13/09	793 ± 143	
F-9D	11/12/09	697 ± 129	
F-9D	12/08/09	531 ± 131	
FATLON POND	10/14/09	< 163	
G-2	04/17/09	< 172	
G-2D	04/17/09	< 144	
G-2D	10/13/09	< 158	
G-3	04/17/09	< 144	
G-4S	04/17/09	< 144	
G-5S	04/17/09	< 141	
G-6S	04/17/09	< 147	
MW-102R	01/15/09	< 192	
MW-102R	02/12/09	< 163	
MW-102R	03/11/09	< 136	
MW-102R	04/16/09	< 167	
MW-102R	05/14/09	< 194	
MW-102R	06/10/09	< 181	
MW-102R	07/14/09	< 167	
MW-102R	08/13/09	< 175	
MW-102R	09/16/09	< 180	
MW-102R	10/14/09	< 165	
MW-102R	11/12/09	< 161	
MW-102R	12/10/09	< 162	
MW-103	03/13/09	< 132	
MW-103	06/11/09	< 177	
MW-105	03/10/09	< 168	
MW-105	06/08/09	< 178	
MW-105	09/15/09	< 177	
MW-105	12/10/09	271 ± 114	
MW-105D	10/14/09	< 178	
MW-106D	10/14/09	< 181	
MW-109D	03/11/09	< 188	
MW-109D	06/15/09	< 177	
MW-109D	09/14/09	< 161	
MW-109D	10/16/09	< 171	
MW-109D	12/09/09	< 167	
MW-11	03/04/09	< 195	
MW-11	09/16/09	268 ± 117	
MW-110	03/10/09	< 165	
MW-110	06/10/09	< 150	
MW-110	09/16/09	< 151	
MW-110	12/08/09	< 170	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
MW-111DR	03/10/09	< 165	
MW-111DR	06/10/09	< 144	
MW-111DR	09/16/09	< 145	
MW-111DR	12/10/09	< 160	
MW-112D	03/10/09	< 167	
MW-112D	06/10/09	< 148	
MW-112D	09/16/09	< 157	
MW-112D	10/13/09	< 167	
MW-112D	12/10/09	< 162	
MW-113	03/10/09	< 167	
MW-113	06/11/09	291 ± 122	
MW-113	09/17/09	< 164	
MW-113	12/09/09	< 161	
MW-113DR	03/10/09	178 ± 108	
MW-113DR	06/11/09	< 180	
MW-113DR	09/15/09	< 182	
MW-113DR	12/09/09	< 160	
MW-13	01/22/09	< 173	
MW-13	01/29/09	240 ± 122	
MW-13	02/24/09	390 ± 134	
MW-13	03/04/09	339 ± 133	
MW-13	04/18/09	276 ± 110	
MW-13	06/09/09	< 184	
MW-13	07/27/09	249 ± 118	
MW-13	08/14/09	507 ± 132	
MW-13	09/16/09	351 ± 117	
MW-13	10/11/09	214 ± 126	
MW-13	11/28/09	393 ± 121	
MW-13	12/26/09	< 166	
MW-130D	03/11/09	< 191	
MW-130D	06/15/09	< 174	
MW-130D	10/16/09	< 189	
MW-130D	12/09/09	< 173	
MW-130-D	09/14/09	< 164	
MW-131D	03/10/09	< 163	
MW-131D	06/10/09	< 149	
MW-131D	09/16/09	< 155	
MW-131D	12/10/09	< 162	
MW-132D	03/10/09	< 168	
MW-132D	06/10/09	< 148	
MW-132D	09/16/09	< 156	
MW-132D	12/10/09	< 157	
MW-133D	03/10/09	< 163	
MW-133D	06/11/09	< 173	
MW-133D	09/16/09	< 147	
MW-133D	12/10/09	< 164	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
MW-134D	03/10/09	3070 ± 360	
MW-134D	06/10/09	434 ± 125	
MW-134D	09/16/09	1640 ± 210	
MW-134D	12/10/09	1450 ± 198	
MW-135D	03/10/09	270 ± 113	
MW-135D	06/08/09	488 ± 129	
MW-135D	09/15/09	< 176	
MW-135D	12/09/09	< 160	
MW-136D	03/10/09	< 165	
MW-136D	06/08/09	< 176	
MW-136D	09/15/09	< 179	
MW-136D	12/09/09	< 159	
MW-137D	03/10/09	< 165	
MW-137D	06/08/09	< 172	
MW-137D	09/15/09	< 173	
MW-137D	12/09/09	< 157	
MW-138D	03/10/09	< 165	
MW-138D	06/08/09	< 177	
MW-138D	09/15/09	< 178	
MW-138D	12/09/09	< 158	
MW-139D	03/10/09	< 157	
MW-139D	06/09/09	< 142	
MW-139D	09/16/09	< 155	
MW-139D	12/09/09	350 ± 117	
MW-14	06/08/09	< 186	
MW-14	12/20/09	< 165	
MW-140D	03/10/09	< 165	
MW-140D	06/11/09	< 172	
MW-140D	09/16/09	< 153	
MW-140D	12/10/09	< 163	
MW-141D	02/24/09	528 ± 137	
MW-141D	05/26/09	208 ± 112	
MW-141D	08/19/09	357 ± 122	
MW-141D	11/29/09	551 ± 132	
MW-142D	02/09/09	869 ± 167	
MW-142D	05/26/09	686 ± 118	
MW-142D	08/11/09	984 ± 158	
MW-142D	11/29/09	854 ± 150	
MW-143D	02/09/09	356 ± 132	
MW-143D	05/26/09	596 ± 113	
MW-143D	08/19/09	429 ± 126	
MW-143D	11/29/09	318 ± 120	
MW-144D	02/09/09	1760 ± 248	
MW-144D	05/26/09	2280 ± 269	
MW-144D	08/11/09	2800 ± 323	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
MW-144D	11/29/09	2910 ± 344	
MW-145D	03/10/09	< 165	
MW-145D	06/09/09	< 191	
MW-145D	09/15/09	< 177	
MW-145D	12/07/09	< 173	
MW-148D	03/12/09	< 133	
MW-148D	06/08/09	< 187	
MW-148D	09/17/09	< 141	
MW-148D	12/09/09	< 159	
MW-149D	03/12/09	< 131	
MW-149D	06/08/09	< 190	
MW-149D	09/17/09	< 145	
MW-149D	12/09/09	< 163	
MW-150D	03/12/09	< 128	
MW-150D	06/08/09	< 189	
MW-150D	09/17/09	< 142	
MW-150D	12/09/09	< 158	
MW-151D	03/11/09	802 ± 151	
MW-151D	06/08/09	< 62	
MW-151D	09/15/09	779 ± 169	
MW-151D	12/08/09	789 ± 140	
MW-154	02/13/09	228 ± 128	
MW-154	05/30/09	178 ± 88	
MW-154	08/24/09	< 171	
MW-154	11/30/09	244 ± 114	
MW-155	02/13/09	< 191	
MW-155	05/30/09	< 164	
MW-155	08/24/09	< 179	
MW-155	11/30/09	< 168	
MW-156	02/13/09	< 184	
MW-156	05/31/09	< 165	
MW-156	08/24/09	< 176	
MW-156	11/30/09	< 168	
MW-157D	03/10/09	< 166	
MW-157D	06/09/09	< 190	
MW-157D	09/15/09	< 176	
MW-157D	12/07/09	< 173	
MW-158D	01/13/09	< 170	
MW-158D	02/12/09	< 169	
MW-158D	03/11/09	< 164	
MW-158D	04/17/09	< 147	
MW-158D	05/14/09	< 198	
MW-158D	06/09/09	< 175	
MW-158D	07/13/09	< 166	
MW-158D	08/13/09	< 180	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90
MW-158D	09/17/09		< 153	
MW-158D	10/12/09		< 164	
MW-158D	11/12/09		< 168	
MW-158D	12/08/09		< 173	
MW-159D	02/24/09		< 188	
MW-159D	05/29/09		< 166	
MW-159D	08/11/09		< 175	< 0.6
MW-159D	11/28/09		< 168	
MW-160D	02/24/09		< 180	
MW-160D	05/29/09		< 167	
MW-160D	08/10/09		193 ± 115	
MW-160D	11/28/09		< 171	
MW-161D	06/08/09		369 ± 127	
MW-161D	12/20/09		419 ± 125	
MW-162D	06/08/09		278 ± 127	
MW-162D	12/20/09		756 ± 141	
MW-2	03/09/09		591 ± 148	
MW-2	09/18/09		985 ± 164	
MW-22	03/05/09		311 ± 133	
MW-22	09/16/09		682 ± 136	
MW-4	06/09/09	ORIGINAL	1180 ± 187	
MW-4	06/09/09	RERUN	1290 ± 192	
MW-4	12/26/09		1710 ± 226	
MW-5	03/05/09		785 ± 165	
MW-5	09/18/09		978 ± 164	
MW-6	03/05/09		635 ± 151	
MW-6	09/18/09		638 ± 133	
MW-7	03/05/09		660 ± 153	
MW-7	09/18/09		816 ± 149	
MW-9	03/05/09		268 ± 131	
MW-9	09/16/09		380 ± 119	
MW-BW-201BD	01/29/09		< 176	
MW-BW-201BD	07/29/09		< 174	
MW-BW-201I	01/29/09		< 192	
MW-BW-201I	07/17/09		< 169	
MW-BW-201S	01/29/09		< 174	
MW-BW-201S	07/17/09		< 169	
MW-BW-202I	01/27/09		< 190	
MW-BW-202I	07/29/09		< 172	
MW-BW-202S	01/29/09		< 184	
MW-BW-202S	07/17/09		< 165	
MW-BW-203I	01/26/09		< 189	
MW-BW-203I	07/16/09		< 174	
MW-BW-203S	01/26/09		< 184	
MW-BW-203S	07/16/09		< 171	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90
MW-BW-204I	04/12/09		235 ± 107	
MW-BW-204I	10/11/09		< 181	
MW-BW-205I	03/09/09		< 196	
MW-BW-205I	09/23/09		< 167	
MW-BW-206I	03/09/09		< 194	
MW-BW-206I	09/23/09		< 163	
MW-BW-207I	05/30/09		835 ± 151	
MW-BW-208D	07/29/09		< 173	
P-2D	10/14/09		593 ± 125	
P-4D	10/14/09		1280 ± 186	
P-5D	10/14/09		< 161	
PW-001	01/22/09		< 162	
PW-001	04/17/09		< 165	
PW-002	01/22/09		< 166	
PW-002	04/17/09		< 174	
PW-002	07/15/09		< 163	
PW-003	01/22/09		< 162	
PW-003	04/17/09		< 173	
PW-003	07/15/09		< 166	
PW-003	10/15/09	ORIGINAL	198 ± 120	
PW-003	10/15/09	RERUN	< 170	
PW-006	01/22/09		< 171	
PW-006	04/17/09		< 171	
PW-006	07/15/09		< 161	
PW-006	10/15/09		< 175	
PW-006A	04/17/09		< 173	
PW-006A	07/15/09		< 168	
PW-006A	10/15/09		< 185	
PW-006P	04/17/09		< 166	
PW-006P	07/15/09		< 167	
PW-006P	10/15/09		< 184	
PW-011	01/22/09		< 172	
PW-011	04/17/09		< 146	
PW-011	07/15/09		< 182	
PW-011	10/15/09		< 167	
PW-013	04/17/09		< 144	
PW-013	07/15/09		< 164	
PW-013	10/15/09		< 173	
PW-014	01/22/09		< 170	
PW-014	04/17/09		< 176	
PW-014	07/15/09		< 167	
PW-014	10/15/09		< 171	
PW-015	01/22/09		< 171	
PW-015	04/17/09		< 174	
PW-015	07/15/09		< 169	
PW-015	10/15/09		< 172	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
PW-016	04/17/09	< 173	
PW-016	07/15/09	< 159	
PW-016	10/15/09	< 185	
PW-018	01/22/09	< 174	
PW-485	08/13/09	< 177	
RW-10	06/15/09	< 178	
RW-10	09/14/09	< 168	
RW-10	10/14/09	238 ± 128	
RW-5	03/31/09	400 ± 131	
RW-5	07/16/09	187 ± 116	
RW-5	09/23/09	334 ± 117	
RW-5	12/09/09	391 ± 125	
RW-6	03/31/09	1640 ± 241	
RW-6	07/16/09	2920 ± 348	
RW-6	10/16/09	387 ± 137	
RW-6	12/09/09	298 ± 120	
RW-7	03/31/09	< 196	
RW-7	10/13/09	< 167	
RW-9	06/15/09	< 175	
RW-9	09/14/09	< 168	
RW-9	10/14/09	< 177	
RW-9	12/09/09	190 ± 114	
S-1D	01/14/09	779 ± 152	
S-1D	02/12/09	579 ± 138	
S-1D	03/11/09	419 ± 118	
S-1D	04/17/09	498 ± 126	
S-1D	05/14/09	408 ± 140	
S-1D	06/09/09	525 ± 114	
S-1D	08/13/09	484 ± 133	
S-1D	09/17/09	426 ± 121	
S-1D	10/12/09	628 ± 135	
S-1D	11/12/09	646 ± 135	
S-1D	12/08/09	614 ± 136	
S-2D	10/13/09	180 ± 116	
S-4D	10/13/09	< 174	
S-7D	01/14/09	< 191	
S-7D	02/12/09	< 160	
S-7D	03/11/09	< 163	
S-7D	04/17/09	< 148	
S-7D	05/14/09	< 198	
S-7D	06/09/09	< 148	
S-7D	07/13/09	< 164	
S-7D	08/13/09	< 148	
S-7D	09/17/09	< 164	
S-7D	10/13/09	< 174	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
S-7D	11/12/09	< 169	
S-7D	12/08/09	< 173	
S-8DR	01/14/09	< 191	
S-8DR	02/12/09	< 168	
S-8DR	03/11/09	< 165	
S-8DR	04/17/09	< 143	
S-8DR	05/14/09	< 198	
S-8DR	06/09/09	< 146	
S-8DR	07/13/09	< 170	
S-8DR	08/13/09	< 161	
S-8DR	09/17/09	< 146	
S-8DR	10/14/09	< 160	
S-8DR	11/12/09	< 169	
S-8DR	12/08/09	< 175	
SW-102	08/21/09	< 173	
TB-20	01/22/09	< 173	
TB-20	02/17/09	< 190	
TB-20	03/04/09	< 192	
TB-20	04/04/09	259 ± 123	
TB-20	05/15/09	< 133	
TB-20	06/09/09	< 183	
TB-20	07/17/09	< 172	
TB-20	08/14/09	251 ± 118	
TB-20	09/16/09	< 167	
TB-20	10/02/09	< 191	
TB-20	11/28/09	190 ± 104	
TB-20	12/18/09	184 ± 113	
TB-20D	01/22/09	< 175	
TB-20D	04/04/09	< 192	
TB-20D	07/28/09	< 175	
TB-20D	10/02/09	< 176	
TB-21	01/22/09	< 172	
TB-21	02/17/09	< 189	
TB-21	03/04/09	< 196	
TB-21	04/04/09	< 191	
TB-21	05/15/09	229 ± 94	
TB-21	06/10/09	< 180	
TB-21	07/27/09	210 ± 116	
TB-21	08/14/09	198 ± 115	
TB-21	09/14/09	< 165	
TB-21	10/02/09	< 175	
TB-21	11/25/09	< 166	
TB-21	12/18/09	< 171	
TB-21D	01/22/09	< 173	
TB-21D	04/04/09	< 164	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
TB-21D	07/27/09	< 172	
TB-21D	10/02/09	< 181	
TB-22	01/27/09	< 167	
TB-22	02/17/09	404 ± 133	
TB-22	03/04/09	805 ± 165	
TB-22	04/04/09	548 ± 125	
TB-22	05/29/09	521 ± 108	
TB-22	06/10/09	321 ± 126	
TB-22	07/24/09	267 ± 116	
TB-22	08/14/09	306 ± 120	
TB-22	09/18/09	193 ± 111	
TB-22	10/02/09	167 ± 109	
TB-22	10/02/09	< 189	
TB-22	11/25/09	166 ± 108	
TB-22	12/18/09	243 ± 117	
TB-22D	01/27/09	< 161	
TB-22D	04/04/09	< 160	
TB-22D	07/24/09	< 163	
TB-23	01/26/09	< 169	
TB-23	02/17/09	< 191	
TB-23	04/04/09	< 163	
TB-23	04/18/09	< 190	
TB-23	05/15/09	< 167	
TB-23	06/10/09	< 183	
TB-23	07/28/09	< 173	
TB-23	08/19/09	209 ± 114	
TB-23	09/16/09	< 165	
TB-23	10/11/09	232 ± 115	
TB-23	11/28/09	222 ± 116	
TB-23	12/20/09	173 ± 111	
TB-23D	01/26/09	< 177	
TB-23D	04/04/09	< 163	
TB-23D	07/28/09	< 174	
TB-23D	10/11/09	< 181	
TB-24	05/30/09	< 163	
TB-24D	05/30/09	< 131	
TB-25	05/30/09	< 133	
TB-25D	05/30/09	186 ± 92	
VB10-1	01/13/09	< 168	
VB10-1	02/10/09	< 187	
VB10-1	03/09/09	< 167	
VB10-1	04/14/09	< 156	
VB10-1	05/12/09	< 180	
VB10-1	06/08/09	< 178	
VB10-1	07/13/09	< 174	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
VB10-1	08/11/09	< 159	
VB10-1	09/14/09	< 161	
VB10-1	10/12/09	< 158	
VB10-1	11/10/09	< 183	
VB10-1	12/08/09	< 166	
VB1-1	01/14/09	< 177	
VB1-1	02/12/09	< 189	
VB1-1	03/13/09	< 193	
VB1-1	04/14/09	< 161	
VB1-1	05/13/09	< 181	
VB1-1	06/09/09	< 188	
VB1-1	07/16/09	< 175	
VB1-1	08/10/09	< 180	
VB1-1	09/14/09	< 167	
VB1-1	10/11/09	< 191	
VB1-1	11/11/09	< 168	
VB1-1	12/08/09	< 172	
VB-1-1	05/14/09	164 ± 92	
VB1-10D	10/21/09	< 174	
VB11-1	01/14/09	< 167	
VB11-1	02/10/09	< 190	
VB11-1	03/12/09	< 132	
VB11-1	04/15/09	< 154	
VB11-1	06/09/09	< 192	
VB11-1	07/14/09	< 183	
VB11-1	08/12/09	< 161	
VB11-1	09/15/09	< 162	
VB11-1	10/13/09	< 154	
VB11-1	11/10/09	< 182	
VB11-1	12/08/09	< 165	
VB1-11D	10/16/09	< 177	
VB1-12D	06/10/09	< 147	
VB-1-12D	03/12/09	< 190	
VB-1-12D	09/16/09	< 182	
VB-1-12D	12/07/09	< 173	
VB1-2D	10/21/09	< 178	
VB1-3D	10/21/09	< 177	
VB1-4D	10/16/09	< 186	
VB1-5D	10/16/09	< 190	
VB1-6D	10/13/09	< 173	
VB1-7D	10/13/09	< 176	
VB1-8D	10/13/09	< 175	
VB1-9D	03/11/09	1870 ± 262	
VB1-9D	06/15/09	1630 ± 225	
VB1-9D	09/23/09	4300 ± 484	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
VB1-9D	10/21/09	1740 ± 235	
VB2-10	01/15/09	< 193	
VB2-10	02/12/09	< 170	
VB2-10	03/09/09	< 193	
VB2-10	04/16/09	< 174	
VB2-10	05/15/09	275 ± 129	
VB2-10	07/15/09	< 185	
VB2-10	08/14/09	< 157	
VB2-10	09/17/09	< 171	
VB2-10	11/12/09	< 169	
VB2-10	12/11/09	< 164	
VB-2-10	06/11/09	< 160	
VB2-10D	01/15/09	< 190	
VB2-10D	02/12/09	< 169	
VB2-10D	04/16/09	< 171	
VB2-10D	05/15/09	< 190	
VB2-10D	07/15/09	< 185	
VB2-10D	08/14/09	< 163	
VB2-10D	09/17/09	< 175	
VB2-10D	10/14/09	< 191	
VB2-10D	11/12/09	< 165	
VB2-10D	12/11/09	< 162	
VB-2-10D	03/09/09	< 197	
VB-2-10D	06/11/09	< 164	
VB2-11	01/15/09	< 187	
VB2-11	02/13/09	< 168	
VB2-11	03/09/09	< 197	
VB2-11	04/16/09	< 168	
VB2-11	05/15/09	< 189	
VB2-11	07/14/09	< 176	
VB2-11	08/14/09	< 158	
VB2-11	09/17/09	< 178	
VB2-11	10/14/09	< 188	
VB2-11	11/12/09	< 160	
VB2-11	12/11/09	< 173	
VB-2-11	06/11/09	< 164	
VB2-11D	01/15/09	< 189	
VB2-11D	02/13/09	< 169	
VB2-11D	03/09/09	< 197	
VB2-11D	04/16/09	< 174	
VB2-11D	05/15/09	< 186	
VB2-11D	07/14/09	< 164	
VB2-11D	08/14/09	< 155	
VB2-11D	09/17/09	< 180	
VB2-11D	10/14/09	791 ± 152	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90
VB2-11D	11/12/09		431 ± 121	
VB2-11D	12/11/09	ORIGINAL	1660 ± 222	
VB2-11D	12/11/09	RERUN	1700 ± 256	
VB-2-11D	06/11/09		< 162	
VB2-12	01/16/09		< 173	
VB2-12	02/13/09		< 167	
VB2-12	03/09/09		< 178	
VB2-12	04/16/09		< 171	
VB2-12	05/15/09		261 ± 127	
VB2-12	07/14/09	ORIGINAL	5140 ± 566	
VB2-12	07/14/09	RERUN	4570 ± 503	
VB2-12	08/13/09		< 162	
VB2-12	09/17/09		< 176	
VB2-12	10/14/09		< 184	
VB2-12	11/12/09		< 168	
VB2-12	12/11/09		< 171	
VB-2-12	06/11/09		< 165	
VB2-12D	01/16/09		2590 ± 322	
VB2-12D	02/13/09		3060 ± 364	
VB2-12D	03/09/09		5140 ± 567	
VB2-12D	04/16/09		5510 ± 602	
VB2-12D	05/15/09		4780 ± 534	
VB2-12D	07/14/09	ORIGINAL	< 174	
VB2-12D	07/14/09	RERUN	< 166	
VB2-12D	08/13/09		3410 ± 390	
VB2-12D	09/17/09		2070 ± 271	
VB2-12D	10/14/09		1450 ± 218	
VB2-12D	11/12/09		1220 ± 183	
VB2-12D	12/11/09		920 ± 152	
VB-2-12D	06/11/09		4970 ± 543	
VB2-13	03/11/09		< 192	
VB2-13	09/17/09		288 ± 121	
VB2-13	12/10/09		< 165	
VB-2-13	06/10/09		154 ± 97	
VB2-13D	03/11/09		< 196	
VB2-13D	09/17/09		< 165	
VB2-13D	12/10/09		< 165	
VB-2-13D	06/10/09		< 150	
VB2-14	03/12/09		< 200	
VB2-14	09/17/09		< 165	
VB2-14	12/10/09		< 153	
VB-2-14	06/10/09		< 146	
VB2-14D	03/12/09		< 187	
VB2-14D	09/17/09		< 163	
VB2-14D	12/10/09		< 165	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90
VB-2-14D	06/10/09		< 147	
VB2-15D	03/12/09		< 193	
VB2-15D	09/17/09		< 180	
VB2-15D	12/10/09		< 165	
VB-2-15D	06/11/09		< 162	
VB2-16	03/12/09		< 190	
VB2-16	09/17/09		< 178	
VB2-16	12/08/09		< 173	
VB-2-16	06/11/09		< 163	
VB2-16D	03/12/09		< 184	
VB2-16D	09/17/09		< 163	
VB2-16D	12/08/09		< 172	
VB-2-16D	06/11/09		< 149	
VB2-17	03/12/09		< 189	
VB2-17	09/17/09		< 162	
VB2-17	12/08/09		< 173	
VB-2-17	06/11/09		< 148	
VB2-17D	03/12/09		< 191	
VB2-17D	09/17/09		< 161	
VB2-17D	12/08/09		< 173	
VB-2-17D	06/11/09		< 145	
VB2-2D	10/15/09		< 172	
VB2-5D	04/17/09		4360 ± 471	
VB2-5D	05/14/09		3320 ± 391	
VB2-5D	06/10/09		2680 ± 326	
VB2-5D	07/14/09		1690 ± 228	
VB2-5D	08/13/09		711 ± 139	
VB2-5D	09/14/09		390 ± 123	
VB2-5D	10/15/09		717 ± 165	
VB2-5D	11/12/09		525 ± 130	
VB2-5D	12/09/09		842 ± 142	
VB2-6D	10/15/09	ORIGINAL	2520 ± 312	
VB2-6D	10/15/09	RERUN	2140 ± 265	
VB2-7D	10/15/09		< 171	
VB2-9	10/15/09		< 176	
VB-3-10D	10/15/09		< 187	
VB-3-2	01/15/09		< 193	
VB-3-2	02/12/09		< 164	
VB-3-2	03/11/09		< 162	
VB-3-2	04/17/09		< 144	
VB-3-2	05/14/09		< 200	
VB-3-2	06/08/09		< 176	
VB-3-2	07/14/09		< 154	
VB-3-2	08/12/09		< 180	
VB-3-2	09/14/09		< 177	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
VB-3-2	10/14/09	< 179	
VB-3-2	11/12/09	< 160	
VB-3-2	12/09/09	< 165	
VB-3-4D	10/15/09	274 ± 120	
VB-3-7D	10/15/09	< 166	
VB-3-9D	10/15/09	< 177	
VB4-1	01/13/09	< 162	
VB4-1	02/12/09	< 174	
VB4-1	03/11/09	< 165	
VB4-1	04/15/09	< 175	
VB4-1	05/13/09	< 141	
VB4-1	06/10/09	< 192	
VB4-1	07/13/09	< 178	
VB4-1	08/12/09	< 172	
VB4-1	09/16/09	< 176	
VB4-1	10/13/09	< 154	
VB4-1	11/11/09	< 160	
VB4-1	12/08/09	< 159	
VB4-5D	03/10/09	< 163	
VB4-5D	06/09/09	< 188	
VB4-5D	09/15/09	< 178	
VB4-5D	12/07/09	< 175	
VB4-6D	03/10/09	1990 ± 253	
VB4-6D	06/09/09	1220 ± 187	
VB4-6D	09/15/09	3830 ± 440	
VB4-6D	12/07/09	3920 ± 444	
VB5-2	01/16/09	< 183	
VB5-2	02/10/09	< 170	
VB5-2	03/13/09	< 133	
VB5-2	04/15/09	< 157	
VB5-2	05/15/09	< 169	
VB5-2	06/10/09	< 178	
VB5-2	07/14/09	< 187	
VB5-2	08/12/09	< 183	
VB5-2	09/16/09	< 176	
VB5-2	10/13/09	< 160	
VB5-2	11/11/09	< 162	
VB5-2	12/08/09	< 165	
VB6-1	01/13/09	< 171	
VB6-1	02/10/09	< 184	
VB6-1	03/12/09	< 133	
VB6-1	04/15/09	< 160	
VB6-1	05/12/09	< 184	
VB6-1	06/08/09	< 189	
VB6-1	07/13/09	< 178	
VB6-1	08/12/09	< 178	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90
VB6-1	09/15/09	< 184	
VB6-1	10/12/09	< 150	
VB6-1	11/11/09	< 167	
VB6-1	12/09/09	< 165	
VB7-1	01/13/09	341 ± 123	
VB7-1	02/10/09	702 ± 152	
VB7-1	03/11/09	619 ± 134	
VB7-1	04/15/09	< 156	
VB7-1	05/13/09	< 138	
VB7-1	06/08/09	< 179	
VB7-1	07/13/09	189 ± 117	
VB7-1	08/12/09	186 ± 117	
VB7-1	09/15/09	< 188	
VB7-1	10/13/09	297 ± 118	
VB7-1	11/11/09	250 ± 114	
VB7-1	12/08/09	< 165	
VB8-2R	03/09/09	< 162	
VB8-2R	04/15/09	< 160	
VB8-2R	05/12/09	< 183	
VB8-2R	06/08/09	< 179	
VB8-2R	07/13/09	< 176	
VB8-2R	08/12/09	< 154	
VB8-2R	09/15/09	< 185	
VB8-2R	10/13/09	< 151	
VB8-2R	11/10/09	< 163	
VB8-2R	12/09/09	< 161	
VB9-1	01/13/09	< 171	
VB9-1	02/10/09	< 188	
VB9-1	03/09/09	< 165	
VB9-1	04/14/09	< 157	
VB9-1	05/12/09	< 177	
VB9-1	06/08/09	< 175	
VB9-1	07/13/09	< 174	
VB9-1	08/11/09	< 153	
VB9-1	09/15/09	< 190	
VB9-1	10/12/09	< 147	
VB9-1	11/10/09	< 186	
VB9-1	12/09/09	< 163	
WCFPD-1D	03/12/09	739 ± 145	
WCFPD-1D	09/15/09	260 ± 115	
WCFPD-1D	12/09/09	193 ± 109	
WCFPD-2DR	03/12/09	< 174	
WCFPD-2DR	09/15/09	< 151	
WCFPD-2DR	12/09/09	< 161	
WDFPD-1D	06/09/09	255 ± 128	
WDFPD-2DR	06/09/09	< 189	

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	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-159D	08/11/09	< 13	< 9	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 28	< 1	< 1	< 27	< 9

TABLE B-II.1 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF BRAIDWOOD STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
DS-2	12/09/09	< 170
LAKE DISCHARGE CANAL	10/11/09	< 176
LAKE DISCHARGE CANAL	04/12/09	< 143
LAKE INTAKE	10/12/09	< 190
SW-103	09/22/09	330 ± 116
SG-BW-105	04/12/09	< 144
SW-05	04/17/09	< 173
SW-05	07/15/09	< 160
SW-05	10/15/09	< 189
SW-101	08/21/09	208 ± 116
SW-104	10/11/09	< 176
SW-104 A-DITCH	04/12/09	< 143