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Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

April 30, 2007

NRC 2007-0032
10 CFR 50.36a
10 CFR 72.44

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266, 50-301, and 72-005
Renewed License Nos. DPR-24 and DPR-27

2006 Annual Monitoring Report

In accordance with Point Beach Nuclear Plant (PBNP) Technical Specification 5.6.2, enclosed is the Annual Monitoring Report for PBNP, Units 1 and 2, for the period January 1 through December 31, 2006.

The Annual Monitoring Report contains information regarding plant releases, solid waste shipments, results from the radiological environmental monitoring program, as well as miscellaneous reportable items during 2006. The report also covers the results of radiological monitoring of the PBNP Independent Spent Fuel Storage Installation (ISFSI) as required by 10 CFR 72.44.

The Offsite Dose Calculation Manual and the Environmental Manual were not revised in 2006.

This letter contains no new commitments and no revisions to existing commitments.

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Nuclear Management Company, LLC

Enclosure

cc: Administrator, Region III, USNRC
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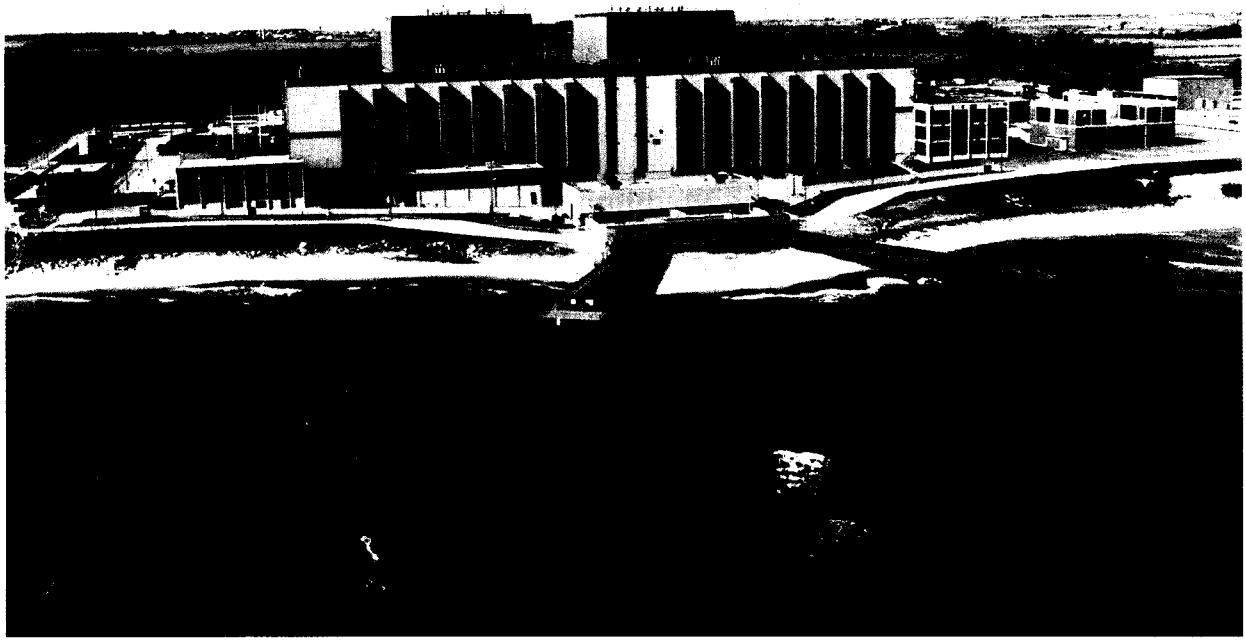
Enclosure 1

2006 ANNUAL MONITORING REPORT

NUCLEAR MANAGEMENT COMPANY, LLC
POINT BEACH NUCLEAR PLANT



January 1 through December 31, 2006

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EXECUTIVE SUMMARY

This Annual Monitoring Report for the period of January 1 through December 31, 2006 is submitted in accordance with Point Beach Nuclear Plant (PBNP) Units 1 and 2 Technical Specification 5.6.2 and submitted under Dockets 50-266, 50-301 and 72-005 for Facility Operating Licenses DPR-24 and DPR-27 respectively. The report presents the results of effluent and environmental monitoring programs, solid waste shipments, non-radioactive chemical releases, and circulating water system operation.

During 2006, the following Curies (Ci) of radioactive material were released via the liquid and atmospheric pathways:

	Liquid	Atmospheric
Tritium (Ci)	607	74.5
[1]Particulate (Ci)	0.034	0.00000075
Noble Gas (Ci)	(-)	4.330

(-)Noble gases in the liquids are added to the atmospheric release totals.

[1]Atmospheric particulate includes radioiodines, but not F-18, in this table.

For the purpose of compliance with the effluent design objectives of Appendix I to 10 CFR 50, doses from effluents are calculated for the hypothetical maximally exposed individual (MEI) for each age group and compared to the Appendix I objectives. Doses less than or equal to the Appendix I values are considered to be evidence that PBNP releases are as low as reasonably achievable (ALARA). The maximum annual calculated doses in millirem (mrem) or millirad (mrad) are shown below and compared to the corresponding design objectives of 10 CFR 50, Appendix I.

LIQUID RELEASES

Dose Category	Calculated Dose	Appendix I Dose
Whole body dose	0.0056 mrem	6 mrem
Organ dose	0.0057 mrem	20 mrem

ATMOSPHERIC RELEASES

Dose Category	Calculated Dose	Appendix I Dose
Organ dose	0.029 mrem	30 mrem
Noble gas beta air dose	0.00036 mrad	40 mrad
Noble gas gamma ray air dose	0.00031 mrad	20 mrad
Noble gas dose to the skin	0.00059 mrem	30 mrem
Noble gas dose to the whole body	0.00028 mrem	10 mrem

The results show that during 2006, the doses from PBNP effluents were a small percentage (0.10% at the most) of the Appendix I design objectives and therefore operation of PBNP continues to be ALARA.

A survey of land use with respect to the location of dairy cattle was made pursuant to Section 2.5 of the PBNP Environmental Manual. Currently, farm land that adjoins site property is not used for cattle grazing. Therefore, the assumption that cattle graze at the site boundary used in the evaluation of doses from PBNP effluents remains conservative.

The 2006 Radiological Environmental Monitoring Program (REMP) collected 805 samples for radiological analyses and 115 sets of thermoluminescent dosimeters (TLDs) to measure ambient radiation in the vicinity of PBNP and the Independent Spent Fuel Storage Installation (ISFSI). Air monitoring from six different locations showed only background radioactivity from naturally occurring radionuclides. Terrestrial monitoring consisting of soil, vegetation, and milk found no influence from PBNP. Similarly, samples from the aquatic environment, consisting of lake and well water, fish, and algae, revealed no buildup of PBNP radionuclides released in liquid effluents. Therefore, the data showed no plant effect on its environs.

Five NUHOMS dry storage units were added to the ISFSI in 2006, for a total of 25 dry storage casks at the ISFSI. Sixteen are the ventilated, vertical storage casks (VSC-24) and nine are the NUHOMS, horizontally stacked storage modules. The subset of the PBNP REMP samples used to evaluate the environmental impact of the PBNP ISFSI showed no environmental impact from its operation.

The environmental monitoring conducted during 2006 confirmed that the effluent control program at PBNP ensured a minimal impact on the environment.

Part A
EFFLUENT MONITORING

1.0 INTRODUCTION

The PBNP effluent monitoring program is designed to comply with federal regulations for ensuring the safe operation of PBNP with respect to releases of radioactive material to the environment and its subsequent impact on the public. Pursuant to 10 CFR 50.34a, operations should be conducted to keep the levels of radioactive material in effluents to unrestricted areas as low as reasonably achievable (ALARA). In 10 CFR 50, Appendix I, the Nuclear Regulatory Commission (NRC) provides the numerical values for what it considers to be the appropriate ALARA design objectives to which the licensee's calculated effluent doses may be compared. These doses are a small fraction of the dose limits specified by 10 CFR 20.1301 and lower than the Environmental Protection Agency (EPA) limits specified in 40 CFR 190.

10 CFR 20.1302 directs PBNP to make the appropriate surveys of radioactive materials in effluents released to unrestricted and controlled areas. Liquid wastes are monitored by inline radiation monitors as well as by isotopic analyses of samples of the waste stream prior to discharge from PBNP. Airborne releases of radioactive wastes are monitored in a similar manner. Furthermore, for both liquid and atmospheric releases, the appropriate portions of the radwaste treatment systems are used as required to keep releases ALARA. Prior to release, results of isotopic analyses are used to adjust the release rate of discrete volumes of liquid and atmospheric wastes (from liquid waste holdup tanks and from gas decay tanks) such that the concentrations of radioactive material in the air and water beyond PBNP are below the PBNP Technical Specification concentration limits for liquid effluents and release rate limits for gaseous effluents.

Solid wastes are shipped offsite for disposal at NRC licensed facilities. The amount of radioactivity in the solid waste is determined prior to shipment in order to determine the proper shipping configuration as regulated by the Department of Transportation and the NRC.

Also operated at PBNP, under the General License granted pursuant to 10 CFR 72.210, is an Independent Spent Fuel Storage Installation (ISFSI). The release of radioactive materials from the operation of the ISFSI must also comply with the limits of Part 20 and Part 50 Appendix I design objectives. Per 10 CFR 72.44(d)(3), the results of radiological effluent monitoring are to be

reported annually.* The dose criteria for effluents and direct radiation specified by 10 CFR 72.104 states that during normal operations and anticipated occurrences, the annual dose equivalent to any real individual beyond the controlled area must not exceed 25 mrem to the whole body, 75 mrem to the thyroid and 25 mrem to any other organ. The dose from naturally occurring radon and its decay products are exempt. Because the loading of the storage casks occurs within the primary auxiliary building of PBNP, the doses from effluents due to the loading process will be assessed and quantified as part of the PBNP Radiological Effluent Control Program.

2.0 RADIOACTIVE LIQUID RELEASES

The radioactive liquid release path to the environment is via the circulating water discharge. A liquid waste treatment system in conjunction with administrative controls is used to minimize the impact on the environment and maintain doses to the public ALARA from the liquid releases.

2.1 Doses From Liquid Effluent

Doses from liquid effluent are calculated using the methodology of the Offsite Dose Calculation Manual (ODCM). These calculated doses use parameters such as the amount of radioactive material released, the total volume of liquid, the total volume of dilution water, and usage factors (e.g., water and fish consumption, shoreline and swimming factors). These calculations produce a conservative estimation of the dose. For compliance with 10 CFR 50, Appendix I design objectives, the annual dose is calculated to the hypothetical maximally exposed individual (MEI). The MEI is assumed to reside at the site boundary in the highest χ/Q sector and is maximized with respect to occupancy, food consumption, and other uses of this area. As such, the MEI represents an individual with reasonable deviations from the average for the general population in the vicinity of PBNP. A comparison of the calculated doses to the 10 CFR 50, Appendix I design objectives is presented in Table 2-1. The conservatively calculated dose to the MEI is a very small fraction of the Appendix I design objective.

Table 2-1
Comparison of 2006 Liquid Effluent Calculated Doses to 10 CFR 50 Appendix I Design Objectives

Annual Limit [mrem]	Highest Total Calculated Dose [mrem]	% of Design Objective
6 (whole body)	0.0056	0.09 %
20 (any organ)	0.0057	0.03 %

* Holders of a Part 72 license are allowed to submit the report required by 72.44(d)(3) concurrent with the effluent report required by 10 CFR 50.36a (a)(2). (Reference: 64 FR 33178)

2.2 2006 Circulating Water Radionuclide Release Summary

Radioactive liquid releases via the circulating water discharge are summarized by individual source and total curies released on a monthly basis and presented in Table 2-2. These releases are composed of processed waste, wastewater effluent, and blowdown from Units 1 and 2. The wastewater effluent consists of liquid from turbine hall sumps, plant well house backwashes, sewage treatment plant effluent, water treatment plant backwashes and the Unit 1 and 2 facade sumps.

2.3 2006 Isotopic Composition of Circulating Water Discharges

The isotopic composition of circulating water discharges during the current reporting period is presented in Table 2-3. The noble gases released in liquids are reported with the airborne releases, Section 3. The isotopic distribution shows little change from 2005, with tritium up slightly from 2005 and close to 2004 value. H-3 continues to be the major radionuclide released via liquid discharges.

2.4 Beach Drain System Releases Tritium Summary

The quarterly and annual results of beach drain monitoring are presented in Table 2-4. These six drains are sampled once a month. The total monthly flow is calculated assuming that the flow rate at the time of sampling persists for the whole month. During 2006, no tritium was observed in any of the beach drains at the effluent LLDs used to detect and quantify H-3 released from discreet volumes such as hold up tanks and waste distillate tanks. However, special samples obtained in September and sent to the contracted REMP laboratory did detect H-3 in the 100-300 pCi/l range (Part D page 44). Assuming that the highest concentration of 328 pCi/l was maintained for the third and fourth quarters in drains S-1 and S-2, an additional 1.2E-03 Ci of H-3 would have been released. Compared to the 6.07E+02 Ci released via the normal discharge pathway, the beach drain contribution is small. The resulting beach drain dose is about 1/250,000 of that resulting from the normal liquid discharges shown in Table 2-1.

2.5 Changes to the Waste Liquid Treatment System in 2006

There were no changes to the liquid waste treatment system in 2006.

Table 2-2
Summary of Circulating Water Discharge
January 1 through December 31, 2006

	Jan	Feb	Mar	Apr	May	Jun	Total Jan-Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Total Activity Released (Ci)														
Gamma Scan (+Fe-55)	5.16E-04	2.24E-04	5.73E-04	4.57E-04	5.70E-04	4.65E-04	2.81E-03	8.51E-04	3.93E-04	4.95E-03	3.83E-03	2.10E-02	6.09E-04	3.44E-02
Gross Alpha	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.44E-07	7.44E-07
Tritium	5.09E+01	1.03E+01	7.01E+01	1.07E+01	1.70E+01	1.35E+02	2.94E+02	4.04E+01	1.22E+02	3.56E+01	5.94E+01	4.86E+01	7.19E+00	6.07E+02
Strontium (89/90/92)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total Vol Released (gal)														
Processed Waste	5.88E+04	1.36E+04	5.08E+04	2.57E+04	2.41E+04	6.82E+04	2.41E+05	3.38E+04	5.76E+04	4.11E+04	1.07E+05	1.98E+05	2.62E+04	7.05E+05
Waste Water Effluent*	4.34E+06	4.16E+06	4.42E+06	3.49E+06	2.95E+06	3.09E+06	2.25E+07	2.81E+06	3.68E+06	3.88E+06	4.16E+06	3.53E+06	4.43E+06	4.49E+07
U1 SG Blowdown	2.81E+06	2.41E+06	1.97E+06	2.59E+06	2.68E+06	2.56E+06	1.50E+07	2.20E+06	2.07E+06	1.83E+06	1.65E+06	1.57E+06	1.59E+06	2.59E+07
U2 SG Blowdown	2.65E+06	2.42E+06	1.93E+06	2.59E+06	2.68E+06	2.59E+06	1.49E+07	2.64E+06	2.68E+06	2.38E+06	1.23E+06	1.67E+06	2.51E+06	2.80E+07
Total Gallons	9.85E+06	9.00E+06	8.38E+06	8.69E+06	8.33E+06	8.31E+06	5.26E+07	7.68E+06	8.49E+06	8.12E+06	7.15E+06	6.97E+06	8.56E+06	9.95E+07
Total cc	3.73E+10	3.40E+10	3.17E+10	3.29E+10	3.15E+10	3.15E+10	1.99E+11	2.91E+10	3.21E+10	3.07E+10	2.71E+10	2.64E+10	3.24E+10	3.77E+11
Vol of dilution water (cc)**	6.62E+13	6.00E+13	7.95E+13	1.09E+14	1.12E+14	1.11E+14	5.38E+14	1.15E+14	1.15E+14	1.10E+14	8.41E+13	8.10E+13	7.49E+13	1.12E+15
Avg diluted discharge conc (μCi/cc)														
Gamma Scan (+Fe-55)	7.80E-12	4.03E-12	7.21E-12	4.19E-12	5.09E-12	4.19E-12		7.40E-12	3.42E-12	4.50E-11	4.55E-11	2.59E-10	8.13E-12	
Gross Alpha	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.94E-15	
Tritium	7.69E-07	1.71E-07	8.81E-07	9.77E-08	1.51E-07	1.21E-06		3.51E-07	1.06E-06	3.23E-07	7.06E-07	6.00E-07	9.60E-08	
Strontium (89/90/92)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	1.55E-14	0.00E+00	0.00E+00	0.00E+00	
Max Batch Discharge Conc (μCi/cc)														
Tritium	2.19E-05	1.22E-05	3.57E-05	5.26E-06	1.22E-05	4.64E-05		3.28E-05	3.17E-05	2.54E-05	1.60E-05	2.34E-05	8.34E-06	
Gamma Scan (+Fe-55)	8.71E-11	3.85E-11	3.05E-10	1.05E-10	9.01E-11	1.67E-10		1.05E-10	1.93E-10	6.46E-09	2.43E-09	1.64E-08	5.58E-10	

* The Retention Pond was taken out of service in September 2002 and replaced with the waste water effluent filter system.
** Circulating water discharge from both units.
Note: The Dissolved noble gases detected in liquid effluents (e.g., Xe-133 and Xe-135) are added to the atmospheric release summaries.

Table 2-3
Isotopic Composition of Circulating Water Discharges (Ci)
January 1 through December 31, 2006

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Total Jan-Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Jan-Dec
H-3	5.09E+01	1.03E+01	7.01E+01	1.07E+01	1.70E+01	1.35E+02	2.94E+02	4.04E+01	1.22E+02	3.56E+01	5.94E+01	4.86E+01	7.19E+00	6.07E+02
F-18	7.07E-05	1.62E-04	2.15E-04	2.19E-04	2.33E-04	2.29E-04	1.13E-03	5.43E-04	1.73E-04	7.07E-05	1.46E-04	2.78E-04	1.81E-04	2.52E-03
Cr-51	0.00E+00	0.00E+00	7.97E-06	0.00E+00	0.00E+00	0.00E+00	7.97E-06	0.00E+00	0.00E+00	0.00E+00	1.33E-04	7.68E-03	0.00E+00	7.82E-03
Mn-54	0.00E-00	0.00E+00	2.46E-06	0.00E+00	1.19E-06	0.00E+00	3.65E-06	0.00E+00	0.00E+00	7.38E-05	1.17E-04	2.42E-04	2.57E-06	4.39E-04
Fe-55	2.45E-04	5.41E-05	0.00E+00	9.25E-05	1.28E-04	0.00E+00	5.20E-04	1.04E-04	0.00E+00	9.17E-04	4.87E-04	9.00E-04	1.29E-04	3.06E-03
Fe-59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-04	0.00E+00	1.09E-04
Co-57	4.67E-07	0.00E+00	1.15E-06	0.00E+00	0.00E+00	0.00E+00	1.62E-06	0.00E+00	0.00E+00	3.17E-06	0.00E+00	7.10E-07	0.00E+00	5.50E-06
Co-58	2.32E-05	0.00E+00	8.38E-05	0.00E+00	1.69E-06	1.17E-05	1.20E-04	4.10E-05	8.23E-07	6.31E-05	3.70E-04	2.98E-03	7.69E-06	3.58E-03
Co-60	4.93E-05	2.28E-05	1.24E-04	1.45E-04	9.06E-05	1.35E-04	5.67E-04	1.39E-04	1.28E-04	2.71E-03	2.26E-03	3.94E-03	1.93E-04	9.94E-03
Zn-65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.48E-06	3.53E-05	0.00E+00	4.38E-05
As-76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E-05	0.00E+00	1.84E-05
Sr-89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-06	0.00E+00	0.00E+00	0.00E+00	1.71E-06
Nb-95	0.00E+00	0.00E+00	2.97E-05	0.00E+00	0.00E+00	0.00E+00	2.97E-05	0.00E+00	0.00E+00	0.00E+00	4.29E-05	8.64E-04	9.96E-07	9.38E-04
Nb-97	0.00E+00	0.00E+00	6.39E-06	0.00E+00	0.00E+00	7.67E-06	7.67E-06	0.00E+00	1.43E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.10E-06
Zr-95	0.00E+00	0.00E+00	4.84E-06	0.00E+00	0.00E+00	0.00E+00	4.84E-06	0.00E+00	0.00E+00	8.35E-06	0.00E+00	4.84E-04	0.00E+00	4.97E-04
Ag-110m	1.05E-05	3.22E-06	4.95E-05	0.00E+00	1.08E-05	1.22E-05	8.62E-05	1.59E-05	1.87E-05	6.35E-04	1.22E-04	1.53E-03	5.42E-05	2.46E-03
Sn-113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-06	7.69E-05	0.00E+00	7.81E-05
Sn-117m	1.05E-04	0.00E+00	4.04E-05	0.00E+00	0.00E+00	2.77E-05	1.73E-04	2.55E-06	1.00E-05	6.61E-06	2.36E-05	1.02E-03	0.00E+00	1.24E-03
Sb-122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.49E-06	0.00E+00	0.00E+00	3.49E-06
Sb-124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-05	1.87E-04	0.00E+00	2.01E-04
Sb-125	8.26E-06	0.00E+00	4.88E-06	0.00E+00	0.00E+00	0.00E+00	1.31E-05	0.00E+00	0.00E+00	2.53E-04	5.56E-05	5.79E-04	1.40E-05	9.15E-04
I-131	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-05
Cs-134	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.70E-06	0.00E+00	2.70E-06
Cs-137	4.42E-06	0.00E+00	0.00E+00	0.00E+00	1.05E-04	4.21E-05	1.52E-04	6.06E-06	1.82E-05	2.10E-04	5.02E-05	5.12E-05	2.67E-05	5.13E-04
Zr-97	0.00E+00	0.00E+00	2.86E-06	0.00E+00	0.00E+00	0.00E+00	2.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.86E-06
Mn-56	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-06	0.00E+00	0.00E+00	1.92E-06
Y-92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.66E-05	0.00E+00	3.66E-05
W-187	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-05	0.00E+00	1.12E-05
Te-131	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.49E-06	3.49E-06

Note: The dissolved noble gases detected in liquid effluents (e.g., Xe-133, Xe-135, etc.) are added to the atmospheric release summaries.

Table 2-4
Subsoil System Drains - Tritium Summary
January 1 through December 31, 2006

	S-1	S-3	S-7	S-8	S-9	S-10
1st Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	1.33E+06	3.89E+05	0.00E+00	0.00E+00	0.00E+00	1.12E+04
2nd Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	1.45E+06	3.61E+05	0.00E+00	0.00E+00	2.79E+03	0.00E+00
3rd Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	2.29E+05	8.86E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4th Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	4.83E+05	1.82E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00

2.6 Land Application of Sewage Sludge

The Wisconsin Department of Natural Resources has approved the disposal of PBNP sewage by land application on various Wisconsin Electric Power Company properties surrounding PBNP. This sewage sludge, which may contain trace amounts of radionuclides, is to be applied in accordance with methodologies approved by the NRC on January 13, 1988, pursuant to 10 CFR 20.302(a). The approved methodology requires analyses prior to every disposal. Based upon an investigation of the source of the radionuclides, a combination of engineering modifications and administrative controls has eliminated plant generated radiological inputs to the sewage. This was verified by sludge analyses using the environmental lower level of detection (LLD) criteria. No byproduct radionuclides were found in the sludge after the controls and modifications were completed. Sludge is routinely monitored and no radionuclides attributable to PBNP have been found.

There was no disposal of sewage by land application during 2006. All disposals were done at the Manitowoc Sewage Treatment Plant.

3.0 RADIOACTIVE AIRBORNE RELEASES

The release paths to the environment contributing to radioactive airborne release totals during this reporting period were the Auxiliary Building Vent Stack, the Drumming Area Vent Stack, the Letdown Gas Stripper, the Unit 1 Containment Purge Stack, and the Unit 2 Containment Purge Stack. A gaseous radioactive effluent treatment system in conjunction with administrative controls is used to minimize the impact on the environment from the airborne releases and maintain doses to the public ALARA.

3.1 Doses From Airborne Effluent

Doses from airborne effluent are calculated for the maximum exposed individual (MEI) following the methodology contained in the PBNP ODCM. These calculated doses use parameters such as the amount of radioactive material released, the concentration at and beyond the site boundary, the average site weather conditions, the locations of the exposure pathways (e.g., cow milk, vegetable gardens and residences), and usage factors (e.g., breathing rates, food consumption). In addition to the MEI doses, the energy deposited in the air by noble gas beta particles and gamma rays is calculated and compared to the corresponding Appendix I design objectives. A comparison of the annual Appendix I design objectives for atmospheric effluents to the highest organ dose and the noble gas doses calculated using ODCM methodology is listed in Table 3-1. The doses demonstrate that releases from PBNP to the atmosphere continue to be ALARA.

3.2 Radioactive Airborne Release Summary

Radioactivity released in airborne effluents for 2006 are summarized in Table 3-2.

3.3 Isotopic Airborne Releases

The monthly isotopic airborne releases for 2006, from which the airborne doses were calculated, are presented in Table 3-3. When both the equipment hatch and the 66' elevation hatch are open during an outage, there is a measurable, convective flow out the upper hatch. Because this air is not filtered, containment air is assumed to be carried out the hatch, through the façade, and into the environment thereby contributing to the particulate effluent and the calculated dose. This was done for the Unit 2 fall outage.

Table 3-1
Comparison of 2006 Airborne Effluent Calculated Doses to 10 CFR 50 Appendix I Design Objectives

Category	Annual Appendix I Design Objective	January-December Calculated Dose	Percent of Appendix I Design Objective
Particulate	30 mrem/organ	0.029 mrem	9.80E-02
Noble gas	40 mrad (beta air)	0.00036 mrad	8.88E-04
Noble gas	20 mrad (gamma air)	0.00031 mrad	1.54E-03
Noble gas	30 mrem/skin	0.00059 mrem	1.97E-03
Noble gas	10 mrem (whole body)	0.00028 mrem	2.81E-03

Table 3-2
Radioactive Airborne Effluent Release Summary
January 1 through December 31, 2006

							Total							
	Jan	Feb	Mar	Apr	May	Jun	Jan-Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total NG from Liq (Ci)	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-06	4.84E-06	7.78E-05	0.00E+00	1.12E-03	5.72E-04	1.12E-05	1.79E-03
Total Noble Gas (Ci)1	5.48E-02	4.62E-02	3.78E-01	3.38E+00	5.37E-02	6.12E-02	3.97E+00	4.71E-02	1.44E-01	5.42E-02	2.81E-02	3.08E-02	5.35E-02	4.33E+00
Total Radioiodines (Ci)	0.00E+00	1.62E-08	5.99E-08	0.00E+00	0.00E+00	0.00E+00	7.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.80E-11	0.00E+00	7.61E-08
Total Particulate (Ci)2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-10	6.02E-08	0.00E+00	6.16E-07	1.64E-09	0.00E+00	6.78E-07
Alpha (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Strontium(Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All other beta + gamma (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-10	6.02E-08	0.00E+00	6.16E-07	1.64E-09	0.00E+00	6.78E-07
Total Tritium (Ci)	5.96E+00	1.01E+01	8.73E+00	5.27E+00	5.27E+00	5.94E+00	4.13E+01	4.36E+00	4.93E+00	4.18E+00	5.66E+00	5.32E+00	8.74E+00	7.45E+01
Max NG H'rly Rel.(Ci/sec)	4.41E-08	4.83E-08	5.86E-06	4.96E-08	4.53E-08	4.46E-08		3.92E-08	4.89E-08	4.49E-08	4.64E-08	3.63E-08	4.08E-08	

[1] Total noble gas (airborne + liquid releases).
[2] Total Particulate is the sum of alpha, strontium, and others. It does not include radioiodines or F-18. F-18 and other airborne particulates with half-lives <8 days are not considered for dose calculations.

TABLE 3-3
Isotopic Composition of Airborne Releases
January 1, 2006 through December 31, 2006

Nuclide	Jan (Ci)	Feb (Ci)	Mar (Ci)	Apr (Ci)	May (Ci)	Jun (Ci)	Semi-Annual	Jul (Ci)	Aug (Ci)	Sep (Ci)	Oct (Ci)	Nov (Ci)	Dec (Ci)	Total (Ci)
H-3	5.96E+00	1.01E+01	8.73E+00	5.27E+00	5.27E+00	5.94E+00	4.13E+01	4.36E+00	4.93E+00	4.18E+00	5.66E+00	5.32E+00	8.74E+00	7.45E+01
Ar-41	5.14E-02	4.34E-02	4.66E-02	5.12E-02	4.92E-02	5.78E-02	3.00E-01	4.38E-02	4.38E-02	4.95E-02	2.51E-02	3.02E-02	5.28E-02	5.45E-01
Kr-85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-04	0.00E+00	1.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-04
Kr-87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	3.19E-03	2.68E-03	1.56E-03	7.05E-03	4.00E-03	3.16E-03	2.16E-02	2.96E-03	8.46E-03	4.42E-03	2.58E-03	5.51E-04	7.36E-04	4.13E-02
Xe-133m	0.00E+00	0.00E+00	3.30E-01	3.32E+00	0.00E+00	0.00E+00	3.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E+00
Xe-135	1.62E-04	1.32E-04	0.00E+00	2.47E-04	3.07E-04	1.98E-04	1.05E-03	3.16E-04	9.12E-02	2.55E-04	3.85E-04	2.06E-05	1.20E-06	9.32E-02
Xe-135m	1.48E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-02
Xe-138	3.89E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.89E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.89E-02
Cr-51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-07	2.58E-10	0.00E+00	1.87E-07
Mn-54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-07	1.90E-10	0.00E+00	1.21E-07
Co-60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-07	3.88E-10	0.00E+00	2.23E-07
Br-82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-08	5.24E-10	0.00E+00	8.56E-08
Zr-95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-10	0.00E+00	2.50E-10
Ag-110m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sn-113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	0.00E+00	1.62E-08	5.99E-08	0.00E+00	0.00E+00	0.00E+00	7.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.80E-11	0.00E+00	7.61E-08
I-132	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-10	6.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.04E-08

Note: The Noble Gases listed above include the liquid contribution.

4.0 RADIOACTIVE SOLID WASTE SHIPMENTS

4.1 Types, Volumes, and Activity of Shipped Solid Waste

The following types, volumes, and activity of solid waste were shipped from PBNP for offsite disposal or burial during 2006. No Type C or D waste was shipped. No irradiated fuel was shipped offsite. The volume, activity and type of waste are listed in Table 4-1.

Table 4-1
Quantities and Types of Waste Shipped from PBNP

Type of Waste	Quantity	Activity
A. Spent resins, filter sludge, evaporator bottoms, etc.	42.600 m^3	9.081 Ci
	1504.00 ft^3	
B. Dry compressible waste, contaminated equipment, etc	175 m^3	0.055 Ci
	6170 ft^3	
C. Irradiated components, control rods, etc.	0.00 m^3	N/A Ci
	0.00 ft^3	
D. Other	0.00 m^3	N/A Ci
	0.00 ft^3	

4.2 Major Nuclide Composition (by Type of Waste)

The major radionuclide content of the 2006 solid waste was determined by gamma isotopic analysis and the application of scaling factors for certain indicator radionuclides based on the measured isotopic content of representative waste stream samples. The estimated isotopic content is presented in Table 4-2.

Table 4-2
2006 Estimated Solid Waste Major Radionuclide Composition

TYPE A		TYPE B		TYPE C		TYPE D	
	Percent		Percent		Percent		Percent
Nuclide	Abundance	Nuclide	Abundance	Nuclide	Abundance	Nuclide	Abundance
Cr-51	27.2%	Ni-63	23.6%				
H-3	18.8%	Co-58	15.8%				
Ni-63	15.1%	Fe-55	15.0%				
Fe-55	14.2%	Co-60	13.0%				
Co-58	11.1%	Nb-95	12.9%				
Co-60	6.7%	Ag-110m	5.3%				
Ag-110m	3.2%	Zr-95	4.3%				
Sb-125	1.2%	Sb-125	4.1%				
Tc-99	1.1%	Cr-51	1.9%				
Cs-137	0.4%	Ru-106	1.8%				
C-14	0.3%	Mn-54	1.8%				
Nb-95	0.2%	Cs-137	0.2%				
Sb-124	0.2%	H-3	0.2%				
Mn-54	0.2%	Tc-99	0.0%				
Zr-95	0.0%	Pu-241	0.0%				
Ce-144	0.0%	Am-241	0.0%				
Pu-241	0.0%	Cm-242	0.0%				
Fe-59	0.0%	Sr-90	0.0%				
Sr-90	0.0%	Cm-243	0.0%				
Am-241	0.0%	Cm-244	0.0%				
Cm-243	0.0%	Sr-90	0.0%				
Cm-244	0.0%	Pu-238	0.0%				
Pu-238	0.0%	Pu-239	0.0%				
Pu-239	0.0%	Pu-240	0.0%				
Pu-240	0.0%						

4.3 Solid Waste Disposition

There were 11 solid waste shipments from PBNP during 2006. The dates and destinations are shown in Table 4-3.

Table 4-3
2006 PBNP Radioactive Waste Shipments

Date	Destination
01/16/06	Wampum, PA
01/20/06	Wampum, PA
01/23/06	Erwin, TN
01/24/06	Wampum, PA
02/17/06	Wampum, PA
09/12/06	Wampum, PA
10/18/06	Memphis, TN
11/07/06	Oak Ridge, TN
11/07/06	Oak Ridge, TN
11/14/06	Oak Ridge, TN
12/15/06	Oak Ridge, TN

5.0 NONRADIOACTIVE CHEMICAL RELEASES

5.1 Scheduled Chemical Waste Releases

Scheduled chemical waste releases to the circulating water system from January 1, 2006, to June 30, 2006, included 4.06E+05 gallons of neutralized wastewater. The wastewater contained 3.44E+00 pounds of suspended solids and 1.48E+04 pounds of dissolved solids.

Scheduled chemical waste releases to the circulating water system from July 1, 2006, to December 31, 2006, included 7.32E+05 gallons of neutralized wastewater. The wastewater contained 2.58E+01 pounds of suspended solids and 1.21E+04 pounds of dissolved solids.

Scheduled chemical waste releases are based on the average analytical results obtained from sampling a representative number of neutralizing tanks.

5.2 Miscellaneous Chemical Waste Releases

Miscellaneous chemical waste releases from the wastewater effluent (based on effluent analyses) to the circulating water for January 1, 2006, to June 30, 2006, included 2.25E+07 gallons of clarified wastewater. The wastewater contained 1.84E+03 pounds of suspended solids.

Miscellaneous chemical waste releases from the wastewater effluent (based on effluent analyses) to the circulating water for July 1, 2006, to December 31, 2006, included 2.25E+07 gallons of clarified wastewater. The wastewater contained 1.50E+03 pounds of suspended solids.

Miscellaneous chemical waste released directly to the circulating water, based on amount of chemicals used from January 1, 2006, to June 30, 2006, included 1.16E+05 pounds of sodium bisulfite and 3.90E+04 pounds of sodium hypochlorite.

Miscellaneous chemical waste released directly to the circulating water, based on amount of chemicals used from July 1, 2006, to December 31, 2006, included 1.42E+05 pounds of sodium bisulfite and 5.09E+04 pounds of sodium hypochlorite.

6.0 CIRCULATING WATER SYSTEM OPERATION

The circulating water system operation during this reporting period for periods of plant operation is described in Table 6-1.

Table 6-1
Circulating Water System Operation for 2006

	UNIT	JAN	FEB	MAR	APR	MAY	JUN
Average Volume Cooling Water Discharge [million gal/day]**	1	282.2	284.5	339.4	473.0	478.7	489.6
	2	282.2	282.1	338.8	487.6	478.7	489.6
Average Cooling Water Intake Temperature [°F]	1	37	37	38	46	47	54
	2	35	35	36	44	45	52
Average Cooling Water Discharge Temperature [°F]	1	69	69	66	66	66	73
	2	71	72	67	65	67	73
Average Ambient Lake Temperature [°F]		32	31	34	41	42	48

** For days with cooling water discharge flow.

Table 6-1(continued)
Circulating Water System Operation for 2006

	UNIT	JUL	AUG	SEP	OCT	NOV	DEC
Average Volume Cooling Water Discharge [million gal/day]**	1	489.6	489.6	485.0	478.6	497.4	324.0
	2	489.6	489.6	485.0	459.8	382.9	313.9
Average Cooling Water Intake Temperature [°F]	1	56	68	60	48	42	38
	2	54	67	60	51*	41*	38
Average Cooling Water Discharge Temperature [°F]	1	75	88	80	67	61	68
	2	75	88	80	68*	59*	69
Average Ambient Lake Temperature [°F]		52	68	59	43	40	36

* Unit 2 shutdown Oct 15-Nov 16, 2006
** For days with cooling water discharge flow.

Part B
Miscellaneous Reporting Requirements

7.0 ADDITIONAL REPORTING REQUIREMENTS

7.1 Revisions to the PBNP Effluent and Environmental Programs

No revisions were made to the PBNP Offsite Dose Calculation Manual or to the Environmental Manual during 2006.

7.2 Interlaboratory Comparison Program

Environmental, Inc., Midwest Laboratory, the analytical laboratory contracted to perform the radioanalyses of the PBNP environmental samples, participated in the interlaboratory comparison studies administered by Environmental Resources Associates (ERA) during 2006. Environmental, Inc., Midwest Laboratory also participated in the Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP). The ERA environmental crosscheck program replaces the Environmental Measurements Laboratory (EML) Quality Assessment Program which discontinued. The results of these comparisons can be found in Appendix A of the AMR.

7.3 Special Circumstances

No special circumstances report regarding operation of the explosive gas monitor for the waste gas holdup system was needed during 2006.

Part C
RADIOLOGICAL ENVIRONMENTAL MONITORING

8.0 INTRODUCTION

The objective of the PBNP Radiological Environmental Monitoring Program (REMP) is to determine whether the operation of PBNP or the ISFSI has radiologically impacted the environment. To this end, the REMP collects and analyzes air, water, milk, soil, vegetation, and fish samples for radionuclides and uses TLDs to determine the ambient radiation background. These measurements also serve as a check of the efficacy of PBNP effluent controls. The REMP fulfills the requirements of 10 CFR 20.1302, PBNP General Design Criterion (GDC) 17, GDC 64 of Appendix A to 10 CFR 50, and Sections IV.B.2 and IV.B.3 of Appendix I to 10 CFR 50 for the operation of the plant. Therefore, the REMP collects samples from various environmental media in order to provide data on measurable levels of radiation and radioactive materials in the principal pathways of environmental exposure.

A subset of the PBNP REMP samples, consisting of air, soil, and vegetation, also fulfills 10 CFR 72.44(d)(2) for operation of the ISFSI. Additionally, thermoluminescent dosimeters (TLDs) provide the means to measure changes in the ambient environmental radiation levels at sites near the ISFSI and at the PBNP site boundary to ensure that radiation levels from the ISFSI are maintained within the dose limits of 10 CFR 72.104. Because the ISFSI is within the PBNP site boundary, radiation doses from PBNP and the ISFSI, combined, must be used to assess compliance with 10 CFR 72.122 and 40 CFR 190. Therefore, radiological environmental monitoring for the ISFSI is provided by selected sampling sites, which are part of the PBNP REMP.

For the aquatic environment, the samples include water as well as the biological integrators, such as fish and filamentous algae. Because of their migratory behavior, fish are wide area integrators. In contrast, the filamentous algae periphyton is attached to shoreline rocks and concentrate nuclides from the water flowing by their point of attachment. Grab samples of lake water provide a snapshot of radionuclide concentrations at the time the sample is taken; whereas analysis of fish and filamentous algae yield concentrations integrated over time.

The air-grass-cow-milk exposure pathway unites the terrestrial and atmospheric environments. This pathway is important because of the many dairy farms around PBNP. Therefore, the REMP includes samples of air, general grasses, and milk from the PBNP environs. An annual land use survey is made to determine whether the assumptions on the location of dairy cattle remain conservative with respect to dose calculations for PBNP effluents. The dose calculations assume that the dairy cattle are located at the south site boundary,

the highest depositional sector. In addition, soil samples are collected and analyzed in order to monitor the potential for long-term buildup of radionuclides in the vicinity of PBNP.

For the measurement of ambient environmental radiation levels that may be affected by direct radiation from PBNP or by noble gas effluents, the REMP employs a series of TLDs situated around PBNP and the ISFSI.

9.0 PROGRAM DESCRIPTION

9.1 Results Reporting Convention

The vendor used by PBNP to analyze the environmental samples is directed to report analysis results as measured by a detector, which can meet the required lower level of detection (LLD) as specified in Table 2-2 of the Environmental Manual for each sample. The report provided by the vendor (see Appendix 1) contains values, which can be either negative, positive or zero plus/minus the two sigma counting uncertainty, which provides the 95% confidence level for the measured value.

The lower limit of detection (LLD) is an a priori concentration value that specifies the performance capability of the counting system used in the analyses of the REMP samples. The parameters for the a priori LLD are chosen such that only a five percent chance exists of falsely concluding a specific radionuclide is present when it is not present at the specified LLD. Based on detector efficiency and average background activity, the time needed to count the sample in order to achieve the desired LLD depends upon the sample size. Hence, the desired LLD may be achieved by adjusting various parameters. When a suite of radionuclides are required to be quantified in an environmental sample such as lake water, the count time used is that required to achieve the LLD for the radionuclide with the longest counting time. Therefore, in fulfilling the requirement for the most difficult to achieve radionuclide LLD, the probability of detecting the other radionuclides is increased because the counting time used is longer than that required to achieve the remaining radionuclide LLDs.

The REMP results in this report are reported as averages of the measurements made throughout the calendar year plus/minus the associated standard deviation. If all net sample concentrations are equal to or less than zero, the result is reported as "Not Detectable" (ND), indicating no detectable level of activity present in the sample. If any of the net sample concentrations indicate a positive result statistically greater than zero, all of the data reported are used to generate the reported statistics. Because of the statistical nature of radioactive decay, when the radionuclide of interest is not present in the sample, negative and positive results centered about zero will be seen. Excluding validly

measured concentrations, whether negative or as small positive values below the LLD, artificially inflates the calculated average value. Therefore, all generated data are used to calculate the statistical values (i.e., average, standard deviation) presented in this report.

In interpreting the data, effects due to the plant must be distinguished from those due to other sources. A key interpretive aid in assessment of these effects is the design of the PBNP REMP, which is based upon the indicator-control concept. Most types of samples are collected at both indicator locations (e.g., nearby, downwind, or downstream) and at control locations (e.g., distant, upwind, or upstream). A plant effect would be indicated if the radiation level at an indicator location was significantly larger than that at the control location. The difference would have to be greater than could be accounted for by typical fluctuation in radiation levels arising from other sources.

9.2 Sampling Parameters

Samples are collected and analyzed at the frequency indicated in Table 9-1 from the locations described in Table 9-2 and shown in Figures 9-1, 9-2 and 9-3. (The latter two figures show sampling locations not shown in preceding figures due to space limitations. The location of the former retention pond, retired and remediated to NRC unrestricted access criteria, is indicated in Fig. 9-3). The list of PBNP REMP sampling sites used to determine environmental impact around the ISFSI is found in Table 9-3. The minimum acceptable sample size is found in Table 9-4. In addition, Table 9-1 indicates the collection and analysis frequency of the ISFSI fence TLDs.

9.3 Deviations from Required Collection Frequency

Deviations from the collection frequency given in Table 9-1 are allowed in accordance with Section 2.2.6 of the Environmental Manual. Table 9-5 lists the deviations from the scheduled sampling frequency that occurred during the reporting period.

9.4 Assistance to the State of Wisconsin

The Radiation Protection Unit of the Wisconsin Department of Health and Family Services maintains a radiological environmental monitoring program in order to confirm the results from the PBNP REMP. As a courtesy to the State of Wisconsin, PBNP personnel also collect certain environmental samples (Table 9-6) for the State from sites that are near PBNP sampling sites, or are co-located. The results of the State monitoring program are available from the Radiation Protection Unit of the Wisconsin Department of Health and Family Services.

9.5 Program Modifications

The EM and ODCM were not revised in 2006.

Table 9-1
PBNP REMP Sample Analysis and Frequency

Sample Type	Sample Codes	Analyses	Frequency
Environmental Radiation Exposure	E-01, -02, -03, -04, -05 -06, -07, -08, -09, -12 -14, -15, -16, -17, -18, -20, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -38, -39, -TC	TLD	Quarterly
Vegetation	E-01, -02, -03, -04, -06, -08, -09, -20,	Gross Beta	3x/yr as available Gamma Isotopic Analysis
Algae	E-05, -12	Gross Beta Gamma Isotopic Analysis	3x/yr as available
Fish	E-13	Gross Beta Gamma Isotopic Analysis (Analysis of edible portions only)	3x/yr as available
Well Water	E-10	Gross Beta, H-3 Sr-89, 90, I-131 Gamma Isotopic Analysis (on total solids)	Quarterly
Lake Water	E-01, -05, -06, -33	Gross Beta I-131 Gamma Isotopic Analysis (on total solids)	Monthly / Quarterly composite of monthly collections Monthly Monthly
Milk	E-11, -40, -21	Sr-89, 90 I-131 Gamma Isotopic Analysis	Monthly
Air Filters	E-01, -02, -03, -04, -08, -20	Gross Beta I-131 Gamma Isotopic Analysis	Weekly (particulate) Weekly (charcoal) Quarterly (on composite particulate filters)
Soil	E-01, -02, -03, -04, -06, -08, -09, -20,	Gross Beta Gamma Isotopic Analysis	2x/yr
Shoreline Sediment	E-01, -05, -06, -12, -33,	Gross Beta Gamma Isotopic Analysis	2x/yr
ISFSI Ambient Radiation Exposure	North, East, South, West Fence Sections	TLD	Quarterly

Table 9-2
PBNP REMP Sampling Locations

Location Code	Location Description
E-01	Primary Meteorological Tower South of the Plant
E-02	Site Boundary Control Center - East Side of Building
E-03	Tapawingo Road, about 0.4 Miles West of Lakeshore Road
E-04	North Boundary
E-05	Two Creeks Park
E-06	Point Beach State Park - Coast Guard Station; TLD located South of the Lighthouse on Telephone pole
E-07	WPSC Substation on County V, about 0.5 Miles West of Hwy 42
E-08	G.J. Francar Property at Southeast Corner of the Intersection of Cty. B and Zander Road
E-09	Nature Conservancy
E-10	PBNP Site Well
E-11	Dairy Farm about 3.75 Miles West of Site
E-12	Discharge Flume/Pier
E-13	Pumphouse
E-14	South Boundary, about 0.2 miles East of Site Boundary Control Center
E-15	Southwest Corner of Site
E-16	WSW, Hwy 42, a residence about 0.25 miles North of Nuclear Road
E-17	North of Mishicot, Cty. B and Assman Road, Northeast Corner of Intersection
E-18	Northwest of Two Creeks at Zander and Tannery Roads
E-40	Local Dairy Farm, W side of Hwy 42, about 1.8 miles north of the Nuclear Rd intersection
E-20	Reference Location, 17 miles Southwest, at Silver Lake College
E-21	Local Dairy Farm just South of Site on Lakeshore and Irish Roads
E-22	West Side of Hwy 42, about 0.25 miles North of Johanek Road
E-23	Greenfield Lane, about 4.5 Miles South of Site, 0.5 Miles East of Hwy 42
E-24	North Side of County Rt. V, near intersection of Saxonburg Road
E-25	South Side of County Rt. BB, about 0.5 miles West of Norman Road
E-26	804 Tapawingo Road, about 0.4 miles East of Cty. B, North Side of Road
E-27	Intersection of Saxonburg and Nuclear Roads, Southwest Corner, about 4 Miles WSW
E-28	TLD site on western most pole between the second and third parking lots.
E-29	Area of North Meteorological Tower.
E-30	NE corner at Intersection of Tapawingo and Lakeshore Roads.
E-31	On utility pole North side of Tapawingo Road closest to the gate at the West property line.
E-32	On a tree located at the junction of property lines, as indicated by trees and shrubs, about 500 feet east of the west gate on Tapawingo Road and about 1200 feet south of Tapawingo Road. The location is almost under the power lines between the blue and gray transmission towers.
E-33	Lake Michigan shoreline accessed from the SE corner of KNPP parking lot. Sample South of creek.
E-38	Tree located at the West end of the area previously containing the Retention Pond.
E-39	Tree located at the East end of the area previously containing the Retention Pond.
E-TC	Transportation Control; Reserved for TLDs

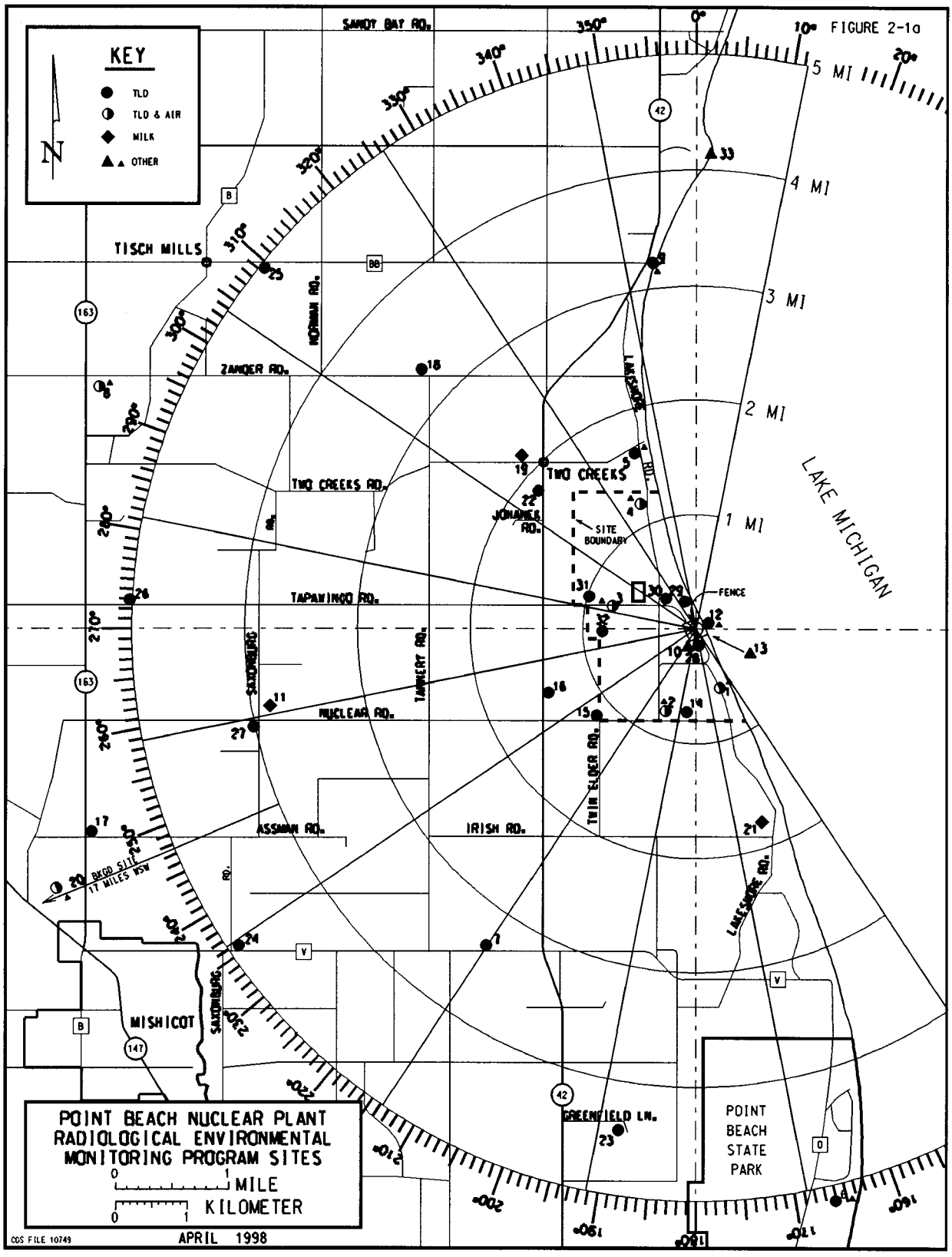


Figure 9-1
PBNP REMP Sampling Sites

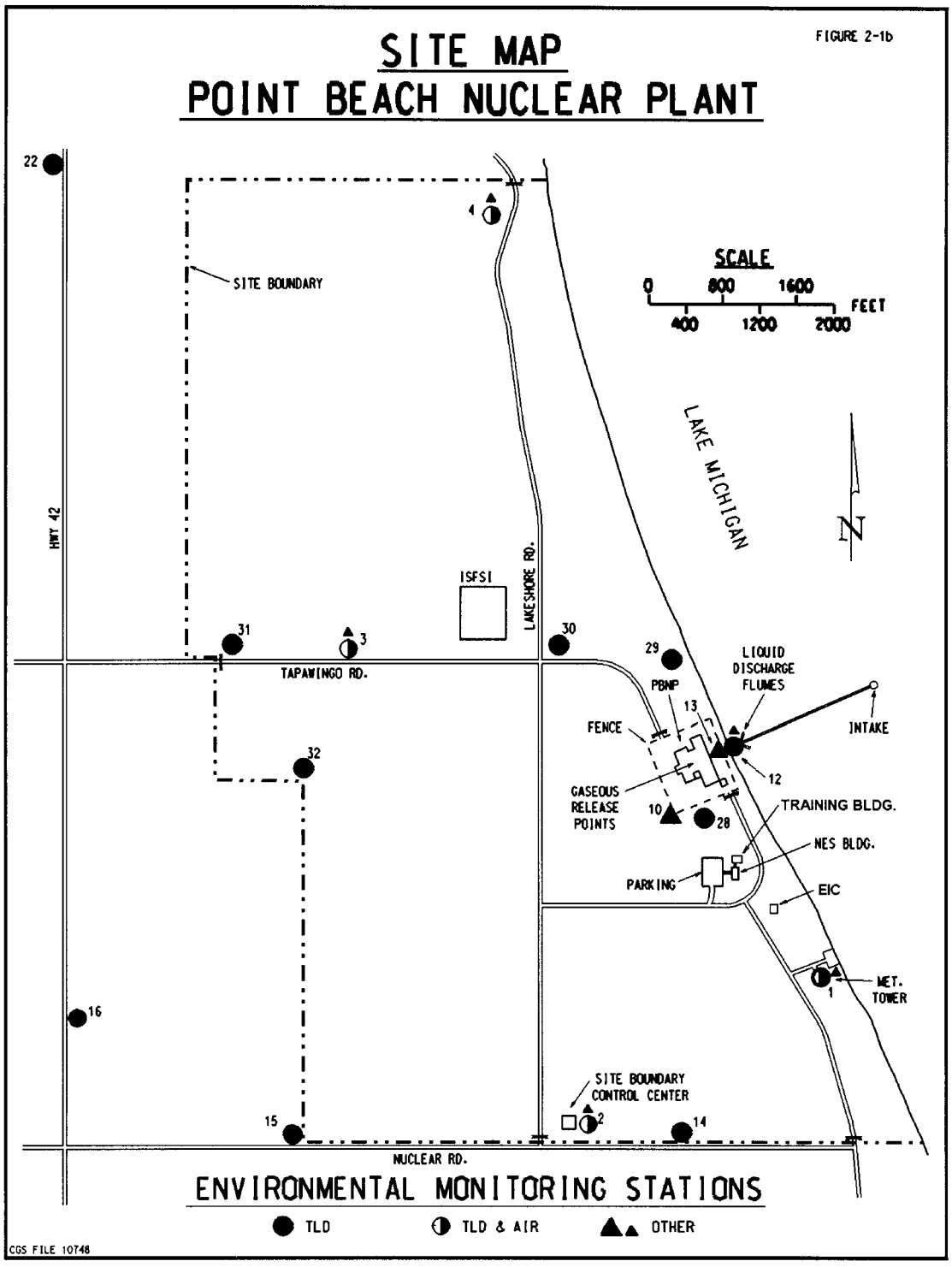


Figure 9-2
Map of REMP Sampling Sites Located Around PBNP

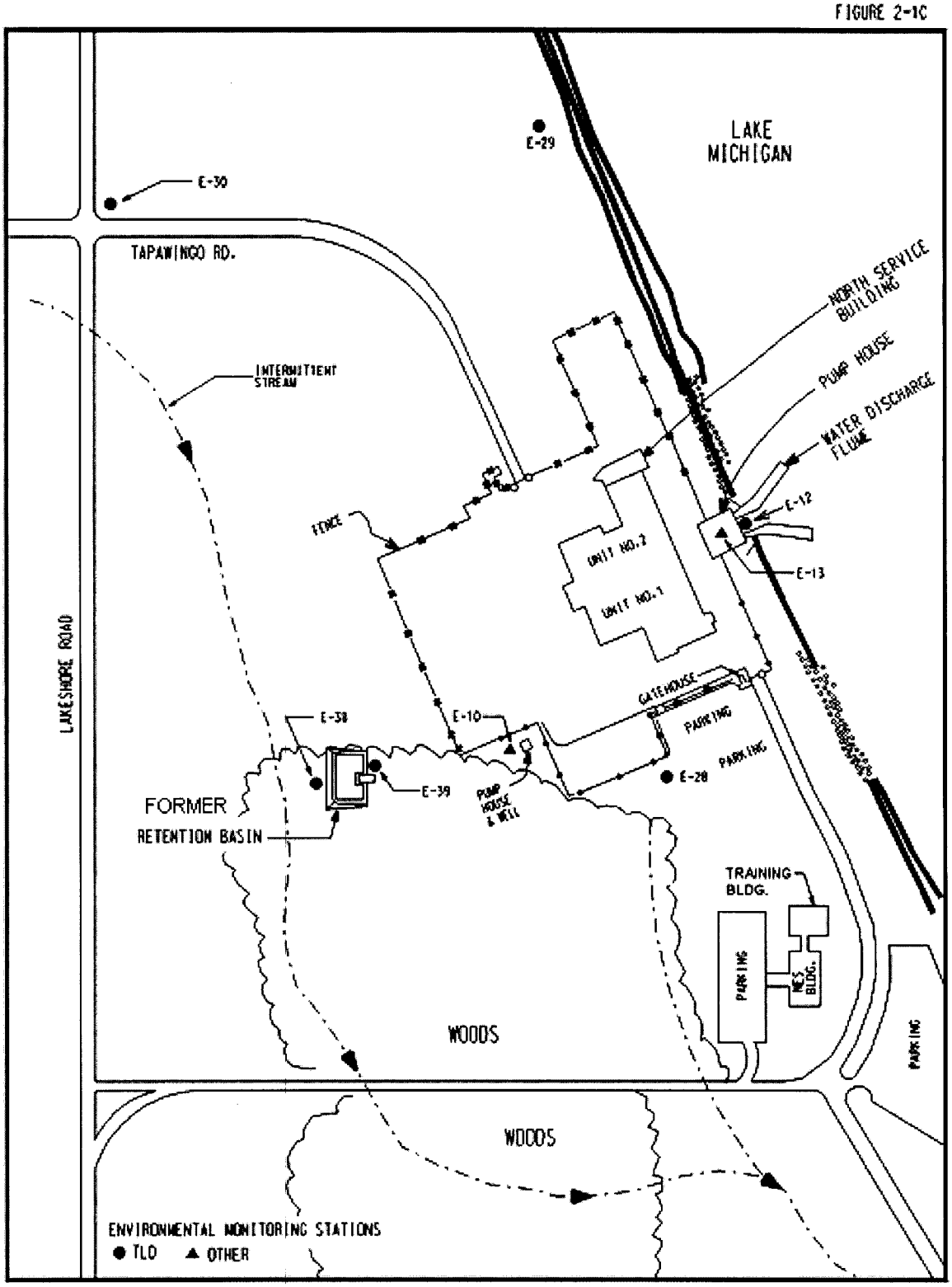


Figure 9-3
Enhanced Map Showing REMP Sampling Sites Closest to PBNP

Table 9-3
ISFSI Sampling Sites

Ambient Radiation Monitoring (TLD)	Soil, Vegetation, and Airborne Monitoring
E-03	E-02
E-28	E-03
E-30	E-04
E-31	
E-32	

Table 9-4
Minimum Acceptable Sample Size

Sample Type	Size
Vegetation	100-1000 grams
Lake Water	8 liters
Air Filters	250 m^3 (volume of air)
Well Water	8 liters
Milk	8 liters
Algae	100-1000 grams
Fish (edible portions)	1000 grams
Soil	500-1000 grams
Shoreline Sediment	500-1000 grams

Table 9-5
Deviations from Scheduled Sampling and Frequency

Sample Type	Location	Collection Date	Reason for not conducting REMP as required	Plans for Preventing Recurrence
AP/AI	E-02 E-02 E-04 E-08	4/5/2006, 5/3/2006, 6/2/2006, 6/2/2006	power shut off power shut off power shut off power shut off	Unknow reason, new enclosures ordered same as above same as above same as above
TLDs	all locations including transportation controls	Receipt of 4th quarter TLDs	TLDs were inadertantly put through the Security X-ray scanner upon arrival at the site	The TLDs arrive in a box clearly marked "DO NOT X-RAY. " The appropriate people have been reminded to pay attention to markings on the box received from the vendor. This event captured in A/R 01070145.

Table 9-6
Sample Collections for State of Wisconsin

Sample Type	Location	Frequency
Lake Water	E-01	Weekly, Composited Monthly
Air Filters	E-07 E-08	Weekly
Fish	E-13	Quarterly, As Available
Precipitation	E-04 E-08	Twice a month, As Available
Milk	E-11 E-19	Monthly
Well Water	E-10	Twice per year

9.6 Analytical Parameters

The types of analyses and their frequencies are given in Table 9-1. The LLDs for the various analyses are found in the Section 10 (Table 10-1) with the summary of the REMP results. All environmental LLDs listed in Table 2-2 of the Environmental Manual (also in Table 10-1) were achieved during 2006.

9.7 Brief Description of Analytical Parameters in Table 9-1

9.7.1 Gamma isotopic analysis

Gamma isotopic analysis consists of a computerized scan of the gamma ray spectrum from 80 keV to 2048 keV. Specifically included in the scan are Mn-54, Fe-59, Co-58, Co-60, Zr-95, Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141 and Ce-144. However, any other detected nuclear power plant produced radionuclides also are noted. All of the above radionuclides detected by gamma isotopic analysis are decay corrected to the time of collection. Frequently detected, but not normally reported here, are the naturally occurring radionuclides Ra-226, Bi-214, Pb-212, Tl-208, Ac-228, Be-7 and K-40.

9.7.2 Gross Beta Analysis

Gross beta analysis is a non-specific analysis that consists of measuring the total beta activity of the sample. No individual radionuclides are identifiable by this method. Gross beta analysis is a quick method of screening samples for the presence of elevated activity that may require additional, immediate analyses.

9.7.3 Water Samples

Water samples include both Lake Michigan and well water. The Lake Michigan samples are collected along the shoreline at two locations north and two locations south of PBNP. The well water is sampled from the on-site PBNP well. Gross beta and gamma isotopic analytical results for water are obtained by measurements on the solids remaining after evaporation of the unfiltered sample to dryness. Hence, the results are indicated as "on total solids" in Table 10-1.

9.7.4 Air Samples

Particulate air filters are allowed to decay at least 72 hours before gross beta measurements are made in order for naturally occurring radionuclides to become a negligible part of the total activity. Gross beta measurements serve as a quick check for any unexpected activity that may require immediate investigation. Quarterly composites of the particulate air filters are analyzed for long-lived radionuclides such as Cs-134 and Cs-137. Charcoal canisters for radioiodine are counted as soon as possible so the I-131 will undergo only minimal decay prior to analyses. The weekly charcoal canisters are screened for I-131 by counting them at the same time to achieve a lower LLD. If a positive result is obtained, each canister is counted individually.

In order to ensure that the air sampling pumps are operating satisfactorily, a gross leak check is performed weekly. The pumps are changed out annually for calibration and maintenance beyond what can be accomplished in the field.

9.7.5 Vegetation

Vegetation samples consist predominantly of green, growing plant material (grasses and weeds most likely to be eaten by cattle if they were present at the sampling site). Care is taken not to include any dirt associated with roots by cutting the vegetation off above the soil line.

9.7.6 Environmental Radiation Exposure

The 2006 environmental radiation exposure measurements were made using thermoluminescent dosimeter (TLD) cards. The TLD card is a small passive detector, which integrates radiation exposure. Each TLD consists of a Teflon sheet coated with a crystalline, phosphorus material (calcium sulfate containing dysprosium) which absorbs the gamma ray energy deposited in them. Each TLD is read in four distinct areas to yield four exposure values which are averaged. Prior to the third quarter of 2001, exposure data were obtained using three lithium fluoride (LiF) TLD chips sealed in black plastic. The difference in material types can impact the amount of exposure measured. As seen in 2001, the Environmental Inc. TLD cards typically produce a slightly higher measured exposure value, although within the uncertainty of that value recorded by the TLD chips.

The reported field exposure is the arithmetic average of the four exposure values obtained minus the exposure received while the field TLD is in storage and transit.

The gamma rays may originate from PBNP produced radionuclides or from naturally occurring radionuclides. The TLDs remain at the monitoring site for roughly three months prior to analyses and the results are reported as mrem per seven days. Because the TLDs are constantly bombarded by naturally occurring gamma radiation, even during shipment to and from PBNP, the amount of exposure during transportation is measured using transportation controls with each shipment of TLDs to and from the laboratory. The doses recorded on the transportation controls are subtracted from the monitoring TLDs in order to obtain the net in situ dose.

9.7.7 ISFSI Ambient Radiation Exposure

Although the ISFSI fence TLDs are not considered part of the REMP because of their location directly on site, their results can be used indirectly to determine whether the operation of the ISFSI is having an impact on the ambient environmental radiation beyond the site boundary. Impacts are determined by comparison of fence TLD results to the results of the monitoring at PBNP site boundary and other selected locations.

10.0 RESULTS

Summary of 2006 REMP Results

Radiological environmental monitoring conducted at PBNP from January 1 through December 31, 2006, consisted of analysis of air filters, milk, lake water, well water, soil, fish, shoreline sediments, algae, and vegetation as well as TLDs. The results are summarized in Table 10-1.

Table 10-1 contains the following information:

Sample:	Type of the sample medium
Description:	Type of measurement
LLD:	*a priori* lower limit of detection
N:	Number of samples analyzed
Average:	Average value ± the standard deviation of N samples
High:	Highest measured value ± its associated 2 sigma counting error
Units:	Units of measurement

For certain analyses, an LLD, which is lower than that required by REMP, is used because the lower value derives from the counting time required to obtain the LLDs for radionuclides that are more difficult to detect. For these analyses, both LLDs are listed with the REMP LLD given in parentheses. The results are discussed in the narrative portion of this report (Section 11). Blank values have not been subtracted from the results presented in Table 10-1. A complete listing of all the individual results obtained from the contracted analytical laboratory and the laboratory's radioanalytical quality assurance results and Interlaboratory Crosscheck Program results are presented in Appendix A.

In Table 10-1, no results are reported as <LLD. A non-detectable (ND) radionuclide is one for which none of the individual measurements was statistically different from zero. When one or more of the measured radionuclide concentrations was positive and statistically different from zero, the average reported in Table 10-1 is the average ± one standard deviation. Both the positive and negative results were used to calculate the average and standard deviation. Some of the reported averages are negative because many of the measured concentrations for that sample category were negative. The highest positive value and its 2-sigma error are reported only when one or more measured values are statistically greater than zero.

The method of determining averages follows the recommendation made in NUREG-0475 (1978) "Radiological Environmental Monitoring by NRC Licensees for Routine Operations of Nuclear Facilities Task Force Report," and in Health Physics Society Committee Report HPSR-1 (1980) "Upgrading Environmental Radiation Data" released as document EPA 520/1-80-012 and in more recent documents such as ANSI N42.23-1996, "Instrument Quality Assurance for Radioassay Laboratories;" ANSI N13.30-1996, "Performance Criteria for Radiobioassay;" and DE91-013607, "Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance."

Table 10-2 contains the ISFSI fence TLD results.

Table 10-1
Summary of Radiological Environmental Monitoring Results for 2006

Sample	Description	N	LLD (a)	Average ± Standard Deviation (b)	High ± 2 sigma	Units
TLD	Environmental Radiation	111	1 mrem	1.14 ± 0.21	1.73 ± 0.08	mR/7days
	Control (E-20)	4	1 mrem	1.11 ± 0.19	1.37 ± 0.15	mR/7days
Air	Gross Beta	256	0.01	0.021 ± 0.007	0.045 ± 0.005	pCi/m3
	Control (E-20) Gross beta	52	0.01	0.021 ± 0.006	0.038 ± 0.004	pCi/m3
	I-131	256	0.030 (0.07)	ND	-	pCi/m3
	Control (E-20) I-131	52	0.030 (0.07)	ND	-	pCi/m3
	Cs-134	20	0.05	ND	-	pCi/m3
	Control (E-20) Cs-134	4	0.05	ND	-	pCi/m3
	Cs-137	20	0.06	0.0000 ± 0.0003	0.0005 ± 0.0004	pCi/m3
	Control (E-20) Cs-137	4	0.06	ND	-	pCi/m3
	Other gamma emitters	20	0.1	0.0001 ± 0.0004	0.0010 ± 0.0009	pCi/m3
	Control (E-20) Other	4	0.1	0.0003 ± 0.0004	0.0007 ± 0.0006	pCi/m3
Milk	Sr-89	36	5	ND	-	pCi/L
	Sr-90	36	1	0.9 ± 0.3	2.4 ± 0.5	pCi/L
	I-131	36	0.5	ND	-	pCi/L
	Cs-134	36	5 (15)	ND	-	pCi/L
	Cs-137	36	5 (15)	ND	-	pCi/L
	Ba-La-140	36	5 (15)	-0.4 ± 1.7	3.6 ± 1.6	pCi/L
	Other gamma emitters	36	15	ND	-	pCi/L
Well	Gross beta	4	4	1.8 ± 1.4	3.4 ± 1.4	pCi/L
Water	H-3	4	500 (3000)	ND	-	pCi/L
	Sr-89	4	10	ND	-	pCi/L
	Sr-90	4	1 (2)	0.1 ± 0.2	0.3 ± 0.2	pCi/L
	I-131	4	0.5 (2)	ND	-	pCi/L
	Mn-54	4	10 (15)	ND	-	pCi/L
	Fe-59	4	30	ND	-	pCi/L
	Co-58	4	15	0.5 ± 1.5	2.4 ± 2	pCi/L
	Co-60	4	15	ND	-	pCi/L
	Zn-65	4	30	ND	-	pCi/L
	Zr-Nb-95	4	15	0.8 ± 2.1	3.1 ± 2.6	pCi/L
	Cs-134	4	15	ND	-	pCi/L
	Cs-137	4	18	ND	-	pCi/L
	Ba-La-140	4	15	ND	-	pCi/L
	Other gamma emitters	4	30	ND	-	pCi/L
Algae	Gross beta	6	0.25	4.34 ± 1.63	6.63 ± 0.78	pCi/g
	Co-58	6	0.25	0.001 ± 0.009	0.017 - 0.014	pCi/g
	Co-60	6	0.25	ND	-	pCi/g
	Cs-134	6	0.25	ND	-	pCi/g
	Cs-137	6	0.25	ND	-	pCi/g

(a) The required LLD per the PBNP REMP is enclosed in the parentheses.
(b) "ND" indicates that the sample result is Not Detectable, i.e., sample concentrations were statistically equivalent to zero.

Table 10-1 (continued)
Summary of Radiological Environmental Monitoring Results for 2006

Sample	Description	N	LLD (a)	Average ± Standard Deviation (b)	High ± 2 sigma	Units
Lake Water	Gross beta	48	4	3.0 ± 1.5	10.8 ± 1.0	pCi/L
	I-131	48	0.5 (2)	ND	-	pCi/L
	Mn-54	48	10 (15)	0.3 ± 1.5	3.2 ± 2.8	pCi/L
	Fe-59	48	30	0.3 ± 3.3	5.7 - 5.2	pCi/L
	Co-58	48	15	0.1 ± 1.6	4.1 ± 2.8	pCi/L
	Co-60	48	15	0.6 ± 1.6	3.5 ± 2.1	pCi/L
	Zn-65	48	30	ND	-	pCi/L
	Zr-Nb-95	48	15	-0.1 ± 1.9	3.3 ± 2.9	pCi/L
	Cs-134	48	10 (15)	-0.7 ± 1.6	3.3 ± 3.2	pCi/L
	Cs-137	48	10 (18)	0.1 ± 1.8	4.3 ± 3.2	pCi/L
	Ba-La-140	48	15	-0.6 ± 2.9	4.5 ± 3.5	pCi/L
	Ru-103 (Other gamma)	48	30	ND	-	pCi/L
	Sr-89	16	5	ND	-	pCi/L
	Sr-90	16	1 (2)	0.26 ± 0.11	0.5 ± 0.27	pCi/L
	H-3	16	500 (3000)	161 ± 132	482 ± 90	pCi/L
Fish	Gross beta	10	0.5	3.89 ± 0.90	5.68 ± 0.11	pCi/g
	Mn-54	10	0.13	ND	-	pCi/g
	Fe-59	10	0.26	ND	-	pCi/g
	Co-58	10	0.13	ND	-	pCi/g
	Co-60	10	0.13	ND	-	pCi/g
	Zn-65	10	0.26	ND	-	pCi/g
	Cs-134	10	0.13	ND	-	pCi/g
	Cs-137	10	0.15	0.032 ± 0.017	0.055 ± 0.019	pCi/g
	Other gamma emitters	10	0.5	ND	-	pCi/g
Shoreline	Gross beta	10	2	12.42 ± 3.13	16.46 ± 1.11	pCi/g
Sediment	Cs-137	10	0.15	0.018 ± 0.012	0.038 ± 0.012	pCi/g
Soil	Gross beta	16	2	27.41 ± 7.65	39.01 ± 3.1	pCi/g
	Cs-137	16	0.15	0.19 ± 0.17	0.67 ± 0.07	pCi/g
Vegetation	Gross beta	24	0.25	8.24 ± 1.76	11.56 ± 0.36	pCi/g
	I-131	24	0.06	-0.004 ± 0.019	0.021 ± 0.009	pCi/g
	Cs-134	24	0.06	ND	-	pCi/g
	Cs-137	24	0.08	0.005 ± 0.012	0.064 ± 0.031	pCi/g
	Other gamma emitters	24	0.06	ND	-	pCi/g

(a) The required LLD per the PBNP REMP is enclosed in the parentheses.
(b) "ND" indicates that the sample result is Not Detectable, i.e., sample concentrations were statistically equal to zero.

Other gamma emitters typically refers to Co-60 if not specifically called out in the analyses. See explanation on page 1 of the Environmental Inc report which is Appendix A of this Annual Monitoring Report.

Table 10-2
ISFSI Fence TLD Results for 2006

Fence Location	Average ±	Standard Deviation	
North	2.73 ±	0.14	mR/7 days
East	2.35 ±	0.22	mR/7 days
South	1.38 ±	0.08	mR/7 days
West	5.80 ±	0.16	mR/7 days

11.0 DISCUSSION

11.1 TLD Cards

The ambient radiation was measured in the general area of the site boundary, at an outer ring four to five miles from the plant, at special interest areas, and at one control location, roughly 17 miles southwest of the plant. The average of the indicator TLD cards is 1.14 mR/7-days and 1.11 mR/7-days at the control location. These results are not significantly different from each other nor from those observed from 2001 through 2005 (tabulated below in Table 11-1). This comparison holds even though the fourth quarter TLDs were accidentally X-rayed upon arrival. This resulted in an approximate 25% increase for the fourth quarter TLD results: 1.36 ± 0.18 *vs.* 1.06 ± 0.16 for the indicator sites and 1.37 ± 0.17 *vs.* 1.02 ± 0.08 for the background site, E-20. The change in TLD types in 2001 accounts for the increase in average TLD readings from 2000 to 2001. (Prior to third quarter 2001 TLD LiF chips were used versus the TLD cards, see section 9.7.6 for additional information.) Therefore, the operation of the plant has had no effect on the ambient gamma radiation.

Table 11-1
Average Indicator TLD Results from 1993 – 2006

Year	Average	±	St. Dev*	Units
1993	0.82	±	0.15	mR/7 days
1994	0.90	±	0.12	mR/7 days
1995	0.87	±	0.13	mR/7 days
1996	0.85	±	0.12	mR/7 days
1997	0.87	±	0.11	mR/7 days
1998	0.79	±	0.13	mR/7 days
1999	0.79	±	0.21	mR/7 days
2000	0.91	±	0.15	mR/7 days
2001	1.06	±	0.19	mR/7 days
2002	1.17	±	0.21	mR/7 days
2003	1.10	±	0.20	mR/7 days
2004	1.10	±	0.22	mR/7 days
2005	1.04	±	0.21	mR/7 days
2006	1.14	±	0.21	mR/7 days

*St. Dev = Standard Deviation

There were five new cask additions in 2006 with no significant change in the average annual ISFSI fence TLD results (Table 11-2) The North and West fence TLDs continue to record higher doses than the South and East fence TLDs (Table 11-2) corresponding to the location of the storage units at the NW corner of the site. Compared to the background site (E-20), most of the indicator sites for the ISFSI (Table 11-3) show increases with the placement of casks at the ISFSI with the highest values at E-03 which is the closest to the ISFSI [see Figs. 9-1 and 9-2 for locations]. The results near the site boundary (E-31, E-32) are comparable to the background site E-20, within the associated measurement error, indicating no measurable increase in ambient gamma radiation at the site boundary due to the operation of the ISFSI.

Table 11-2
Average ISFSI Fence TLD Results (mR/7 days)

	TLD FENCE LOCATION			
	North	East	South	West
1995	1.29	1.28	1.10	1.26
1996	2.12	1.39	1.10	1.68
1997	2.05	1.28	1.00	1.66
1998	2.08	1.37	1.02	1.86
1999	2.57	1.84	1.11	3.26
2000	2.72	2.28	1.25	5.05
2001	2.78	2.54	1.36	6.08
2002	2.79	2.74	1.42	6.46
2003	2.70	2.60	1.50	6.88
2004	2.61	2.12	1.41	6.50
2005	2.54	2.05	1.44	5.63
2006	2.73	2.35	1.38	5.80

Table 11-3
Average TLD Results Surrounding the ISFSI (mR/7 days)

	E-03	E-28	E-30	E-31**	E-32**	E-20***
Pre-Operation*	0.93	0.87	0.81	0.93	0.98	0.88
1996	0.87	0.78	0.79	0.93	1.00	0.78
1997	0.91	0.89	0.84	0.89	0.97	0.79
1998	0.82	0.68	0.82	0.91	0.85	0.77
1999	0.88	0.83	0.80	0.90	0.99	0.78
2000	0.98	0.88	0.99	0.98	1.06	0.90
2001	1.31	0.95	1.02	1.10	1.04	1.03
2002	1.45	0.91	1.10	1.26	1.25	1.14
2003	1.29	0.82	1.02	1.20	1.15	0.99
2004	1.35	0.80	1.05	1.23	1.18	1.06
2005	1.30	0.72	0.98	1.15	1.04	1.00
2006	1.44	0.80	1.07	1.21	1.07	1.11

*Pre-Operation data are the averages of the years 2/92 through 3/95.
**Sites E-31 and E-32 are located at the Site Boundary to the West and South-West of the ISFSI, respectively.
***E-20 is located approximately 17 miles WSW of the ISFSI.

11.2 Milk

Except for Sr-90, the annual average radionuclide concentrations in milk continue to be statistically not different from zero. The few statistically positive, individual monthly results for Ba/La-140 (3 of 36) and "Other"(in this case, Co-60) (1 of 36) are attributed to variations in the analyses resulting from the statistical nature of radioactive decay. This conclusion is supported by the fact that PBNP did not release Ba/La-140 during 2006 and that the one positive "other" (Co-60) result occurred in June whereas PBNP recorded Co-60 releases during October and November of 2006. The Sr-90 concentrations result from the cycling of this radionuclide in the biosphere after the large-scale atmospheric weapons tests of the '50s, '60s, and '70s and the Chernobyl accident. Although these tests also introduced Cs-137 into the environment, Cs-137 binds more strongly to soils and therefore less likely to be ingested. As summarized in Table 3-2. PBNP did not release any airborne Sr-90 in 2006. This was true in 2005 as well (see Table 3-2 of the 2005 AMR). The 2006 average Sr-90 (0.9 ± 0.3) is equivalent to previous years: 0.9 ± 0.4 pCi/L in 2005, 1.1 ± 0.4 in 2004, 1.1 ± 0.4 in 2003, 1.1 ± 0.7 in 2002, 1.2 ± 0.5 in 2001, 1.2 ± 0.6 in 2000, 1.0 ± 0.3 in 1999, 1.1 ± 0.5 in 1998, and 1.2 ± 0.5 in 1997. These results are common throughout the Great Lakes region and North America. Therefore, it is concluded that the milk data for 2006 show no radiological effects of the plant operation.

11.3 Air

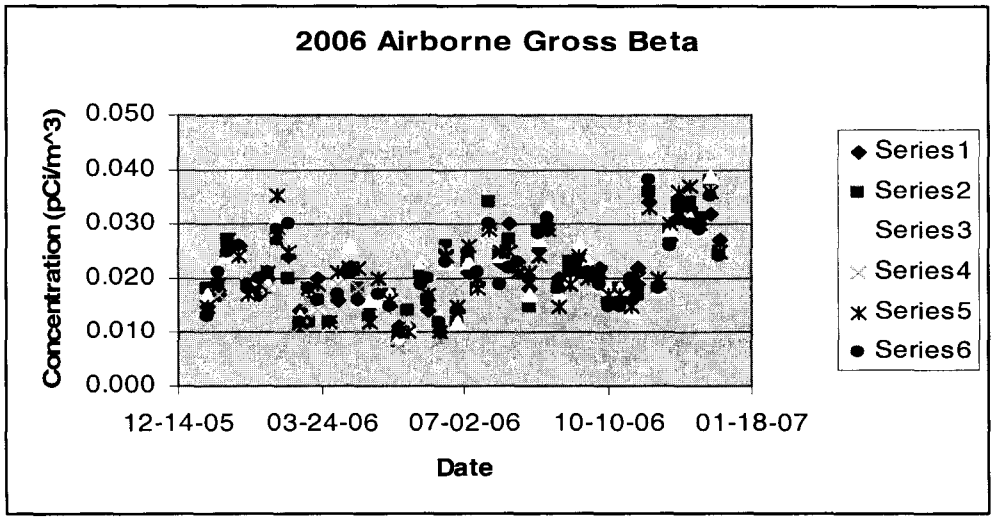
The average annual gross beta concentrations (plus/minus the one-sigma uncertainty) in weekly airborne particulates at the indicator and control locations were 0.021 ± 0.007 pCi/m^3 and 0.021 ± 0.006 pCi/m^3, respectively, and are similar to levels observed from 1993 through 2005 (Table 11-4).

Table 11-4
Average Gross Beta Measurements in Air

Year	Average (pCi/m3)
1993	0.022
1994	0.022
1995	0.021
1996	0.021
1997	0.021
1998	0.022
1999	0.024
2000	0.022
2001	0.023
2002	0.023
2003	0.023
2004	0.021
2005	0.024
2006	0.021

The gross beta concentration variation over the year usually reveals higher concentrations in the fall and winter as compared to the spring and summer. This is present again during 2006. However, for 2006 another high period during July-September also is apparent (Figure 11-1). This pattern will be monitored for during 2007. Similarly to 2005, there is more scatter in the data for the spring and summer months.

Figure 11-1
2006 Airborne Gross Beta Concentration (pCi/m^3) vs. Time



In 2005, the new method of evaluating airborne I-131 was instituted. Instead of counting each charcoal cartridge separately, all six cartridges for the week are counted as one sample in a predetermined geometry to screen the samples for I-131. If any airborne radioiodine were detected, each sample cartridge is counted individually. With no detectable I-131, the reported analytical result is the minimum detectable activity (MDA) conservatively calculated using the smallest of the six sample volumes. The reported MDAs ranged from 0.005 to 0.030 pCi/m^3. Because the analysis LLD is based on counting only one cartridge, the use of six cartridges or roughly six times the sample volume with the same count time as would be needed to achieve the desired LLD for only one sample, the actual LLD is about six times lower than the programmatic value given in Table 10-1. Similarly, the actual MDA is about one-sixth of that reported, or in the range of 0.001 to 0.005 pCi/m^3. Therefore, because no I-131 was detected, it is concluded that the release of small amounts of radioiodine during February, March, and November (Table 3-2) had no measurable impact on the environment.

Gamma spectroscopic analysis of quarterly composites of air particulate filters yielded similar results for indicator and control locations. Neither

the indicator nor the control locations show results which, on average, are significantly different than zero. The one small, positive value for Cs-137 occurred at only one site during the third quarter in which PBNP released small amounts of Cs-137 on the order of 1E-08 to 1E-10 Ci (Table 3-2). No other sites had statistically positive airborne Cs-137. This result may be a false positive attributable to the statistical variation in radioactive decay. Similarly, there was one, first quarter, positive Co-60 ("other" category) result at the background site. Because no airborne Co-60 was released that quarter, this, also is concluded to be a false positive result. Be-7, a naturally occurring radionuclide, was measured in quarterly composites of all indicator samples with an average of 0.070 pCi/m^3. This is comparable to the average of 0.082 pCi/m^3 at the control site. Be-7 is not required to be measured by the PBNP REMP; however, it serves as a means to monitor the internal consistency of the vendor's analytical program and for comparisons to radionuclides that may be in PBNP airborne effluent.

In summary, the air data for 2006 demonstrates the operation of PBNP did not have an impact on the surrounding environment.

11.4 Lake Water

For the suite of REMP-specified gamma emitting radionuclides listed in Table 10-1, reported concentrations continue to occur as small negative and positive values scattered around zero, indicating no radiological impact from the operation of PBNP. Of the 48 lake water samples analyzed during 2006, 1 of 48 was statistically greater than zero for Cs-134, Cs-137, and Zr-Nb-95; 2 of 48 were positive for Mn-54; 3 of 48 for Ba/La-140; 3 of 48 for Co-58 and Co-60; and finally, 5 of 48 for Fe-59. No Fe-59 was released by PBNP during 2006. Based on these results, it is concluded that the impact is minimal for these nuclides.

Aliquots of the monthly samples are composted quarterly and analyzed for Sr-89/90 and for tritium. Sr-90 still persists in Lake Michigan from radioactive fallout. Tritium, in addition to being produced by water-cooled reactors such as PBNP, also is a naturally occurring radionuclide. The quarterly composite lake water samples collected and analyzed in 2006 for H-3 range from ND (non-detectable) to 1017 pCi/l (fourth quarter) at a site four miles north of PBNP near the Kewaunee Power Station (KPS). Because typical REMP H-3 values are in the range of 100-400 pCi/l, the individual months of July – September from this sampling site were analyzed for tritium with the following results: July, 70 ± 85; August, 129 ± 87; and September, 3096 ± 169. The 3096 pCi/l value is 0.31% of the liquid effluent concentration limit of 10 CFR 20, Appendix B, Table 2. Based on the monthly results, it is concluded that the PBNP sample was obtained shortly after a KPS discharge about 4 miles north of this

sampling site. A similar circumstance occurred in 2005. Without the September result, the quarterly average is 100 ± 42 pCi/l. By the time the water mass reached the REMP sampling point immediately south (0.5 miles) of PBNP, dilution had reduced the average quarterly H-3 concentration to 124 pCi/l. These results indicate a minimal impact upon the waters of Lake Michigan from PBNP liquid discharges.

11.5 Algae

Filamentous algae attached to rocks along the Lake Michigan shoreline are known to concentrate radionuclides from the water with concentration factor over a thousand for certain radionuclides. Only one (1 of 6) small, positive concentration of Co-58 was found and that was near the PBNP discharge point. PBNP released Co-58 in 10 of the 12 months of 2006. No Cs-137 was found. Typically, the only fission product observed in algae is Cs-137 with averages over years 1995–2004 of 0.034, 0.050, 0.030, 0.027, 0.031, 0.027, 0.019, 0.019, 0.010 and 0.018 pCi/g; all of which are less than the LLD (0.25 pCi/g). The concentrations of naturally occurring Be-7 and K-40 are higher: 0.93 and 2.07 pCi/g, respectively. These results indicate only a minor effect upon the PBNP environment.

11.6 Fish

No specified fission/corrosion radionuclide concentrations in fish greater than the required LLD were found in 2006. Statistically positive Cs-137 concentrations were found in 8 of the 10 fish. The highest Cs-137 value of 0.055 pCi/g is lower than the high of 0.172 pCi/g in 2005. Both values are considerably less than the high of 2.8 pCi/g as seen in PBNP samples obtained in the mid-1970s during the Chinese weapons tests. However, the Cs-137 results in fish are consistent with accumulation due to the recycling of atmospheric weapons testing fallout Cs-137 in Lake Michigan. Again, the aforementioned resuspension events make the Cs-137 more readily available to be associated with items eaten by the fish. By comparison, the concentration of naturally occurring K-40 (1.58–4.41 pCi/g) is about 30-80 times higher than the highest Cs-137 concentration. Therefore, it is concluded that there is no indication of a plant effect.

11.7 Well Water

There were three well water results statistically greater than zero. In the third quarter, Co-58 was statistically above zero and in the fourth quarter, Sr-90 and Zr-Nb-95 were statistically above zero. These results are concluded to be false positives because the impermeability of the clay layer which separates the surface ground water from the aquifer from which the PBNP well water is obtained precludes surface water from

reaching the lower aquifer. There are no release pathways which could get these radionuclides to the well water aquifer. Radionuclides would have to flow against the hydrological gradient which is from the well to the lake. The well is located west of the plant. As previously mentioned, small, positive results may occur due to the statistical nature of radioactive decay, when there is no radionuclide present. Therefore, it is concluded that these results do not indicate that PBNP effluents are getting into the aquifer supplying drinking water to PBNP.

11.8 Soil

Cs-137 is present in the soils throughout North America and the world. The main contributor to this worldwide distribution is the weapons testing in the 1950s and 1960s with lesser amounts from Chinese atmospheric nuclear tests in the 1970s and the 1986 Chernobyl accident. Soil is an integrating sample media in that it is a better indicator of long term buildup of Cs-137 as opposed to current deposition for local sources. The main modifiers of soil Cs-137 concentration levels are erosion and radioactive decay. The PBNP REMP results indicate that low levels of Cs-137 from fallout continue to be present in soil samples at about 1% of the levels of naturally occurring K-40. Fifteen of the 16 samples have Cs-137 concentrations statistically greater than zero ranging from 0.02 ± 0.01 to 0.67 ± 0.07 pCi/g The current gross beta results also are consistent with previous years (Table 11-5). Therefore, there is no indication of a plant effect.

Table 11-5
Average Gross Beta Concentrations in Soil

Year	Activity (pCi/g)
1993	23.6
1994	19.4
1995	18.0
1996	19.4
1997	22.8
1998	20.0
1999	23.1
2000	22.1
2001	23.5
2002	21.9
2003	22.5
2004	24.3
2005	29.1
2006	27.4

11.9 Shoreline Sediment

Shoreline sediment consists of sand and other sediments washed up on the Lake Michigan shore. As in soil samples, the only non-naturally occurring radionuclide found in these samples is Cs-137. Eight of the ten samples have Cs-137 concentrations statistically different from zero. The Cs-137 concentrations of the shoreline sediment are about one-tenth of that found in soils. This is expected because Cs-137 in the geological media is bound to clay as opposed to the sand found on the beach. Wave action winnows clay particles from the beach leaving the heavier sand; hence the lower Cs-137 concentrations in beach samples. In contrast to K-40 which is actually part of the minerals making up the clay and sand, Cs-137 is attached to soil/sand particle surfaces and is present at concentrations 1% or less of the naturally occurring concentrations of K-40. Because Lake Michigan sediments are a known reservoir of fallout Cs-137, the shoreline sediment data indicate no radiological effects from plant operation.

11.10 Vegetation

The naturally occurring radionuclides Be-7 and K-40 are found in all of the vegetation samples. In contrast, the programmatically specified radionuclide Cs-134 was not detected. I-131 was statistically different from zero in 3 of 24 vegetation samples. All three occurrences were in July. PBNP released small amounts of airborne I-131 in February, March and November of 2006. Because of its 8-day half life, any I-131 would be roughly one million times lower based on radioactive decay. Dilution during the transit to the sites where these positive results were obtained would lower the concentrations even more. Therefore, it is concluded that the I-131 detected at three sites during July are false positives.

Cs-137 was detected in 2 of the 24 samples. Both occurrences were at site E-06. All the positive Cs-137 results were below the required LLD at concentrations about 100 times lower than Be-7 and K-40 concentrations. The source of Be-7 is atmospheric deposition. It is continuously formed in the atmosphere by cosmic ray spallation of oxygen, carbon, and nitrogen atoms. In contrast, K-40 is a primordial radionuclide which is incorporated into vegetation from the soil during the growing process. Cs-137 can represent both pathways. Fresh Cs-137 fallout is associated, like Be-7, with deposition on the plant surface. Old fallout from the '50s and '60s is now being incorporated into growing plants in the same manner as potassium because it is in the same chemical family as potassium. Cs-137 has been consistently present in vegetation from E-06, a campground area in the Point Beach State Forest. As has been demonstrated at other sites in the United States which are far from any nuclear plants, 1950s and 1960s fallout Cs-137 is

present in the ash produced by burning the wood in fireplaces. Typically, campground fires are put out using water and the ashes are spread on the ground. The ash acts as a fertilizer, releasing the cesium and potassium into the soil where they are available for uptake by growing plants and trees. Hence, the Cs-137 results from E-06 demonstrate that Cs-137 fallout from the Chernobyl accident and from atmospheric weapons tests continues to be recycled in the environment by the spreading of wood ash at camp sites.

Based on the 2006 vegetation sampling results, it is concluded that no effect from PBNP effluents are indicated.

11.11 Land Use Census

In accordance with the requirements of Section 2.5 of the Environmental Manual, a visual verification of animals grazing in the vicinity of the PBNP site boundary was completed in 2006, to ensure that the milk sampling locations remain as conservative as practicable. No significant change in the use of pasturelands or grazing herds was noted. Therefore, the existing milk-sampling program continues to be acceptable. The assumption of grazing animals at the south boundary continues to be conservative for the purpose of calculating doses via the grass-cow-milk pathway. It should be noted that the plant entrance is at the south boundary. Therefore, an appearance of grazing animals at this location is readily visible.

12.0 REMP CONCLUSION

Based on the analytical results from the 805 environmental samples and from 115 sets of TLDs that comprised the PBNP REMP for 2006, PBNP effluents had no discernable, permanent effect on the surrounding environment. These results demonstrate that the control of effluents from PBNP continues to be acceptable pursuant to the ALARA criteria of 10 CFR 50.34a.

Part D
GROUNDWATER MONITORING

13.0 Program Description

PBNP monitors groundwater for tritium. During 2006 the sampling program consisted of beach drains, intermittent creeks and the Energy Information Center (EIC) well, as well as the main plant well. In the 1980s, the beach drains entering Lake Michigan were found to contain tritium. The beach drains are the discharge points for yard drainage system which carries storm water runoff and are postulated to be infiltrated by groundwater. The source of H-3 for this pathway was concluded to be spent fuel pool leakage into the groundwater under the plant based on the observation that after modifications were made to the pool, the tritium concentrations decreased below delectability. Beach drain effluents continue to be monitored and are accounted for in the monthly effluent quantification process. Those results are reported in Section 2.4 of this Report.

The intermittent streams and the EIC well were added to the groundwater monitoring program in late 1990s when it was discovered that tritium diffusion from the then operable, earthen retention pond was observable in the intermittent streams which transverse the site in a NW to SE direction. These streams pass on the east and west sides of the former retention pond and empty into Lake Michigan about half a mile south of the plant near the site's meteorological tower. Because the EIC is downstream of the observed flow affected by the retention pond, samples from the EIC well were included in the monitoring. The intermittent stream samples track H-3 in the surface groundwater. The EIC well monitors the much deeper, drinking water aquifer from which the main plant well draws its water.

14.0 Results

The results from the groundwater monitoring associated with the former retention pond are presented in Table 14-1. Like the main plant well results (Sections 10 and 11), no tritium has been found in the EIC well which draws water from a similar depth. Studies conducted during the remediation of the retention pond revealed that the tritium was confined to the upper layer of soil which is separated from the deeper, drinking water aquifer by a thick, impermeable clay layer that extends from Wisconsin into Illinois. The current stream results reveal low level H-3 concentrations consistent with the previous results.

Table 14-1 Groundwater H-3 Monitoring
H-3 Concentration (pCi/l)

Month	GW-01(E-01) Creek Confluence			GW-02 East Creek			GW-03 West Creek			GW-04(E-40) EIC Well			LLD
Jan	ND	±		138	±	101	ND	±		ND	±		<182
Feb[1]		±			±			±			±		
Mar	168	±	96	195	±	97	140	±	95	ND	±		<181
Apr	ND	±		131	±	73	ND	±		ND	±		<133
May	93	±	73	233	±	80	ND	±		ND	±		<130
Jun[2]	185	±	78	209	±	79	138	±	76	ND	±		<139
Jul[3]	169	±	80	123	±	87	113	±	77	94	±	86	<155
Aug[4]	ND	±		176	±	112	133	±	111	ND	±		<175
Sep	ND	±		ND	±		124	±	88	126	±	88	<157
Oct	ND	±		ND	±		ND	±		ND	±		<191
Nov	152	±	93	203	±	95	ND	±		ND	±		<176
Dec[5]	ND	±		ND	±		ND	±		ND	±		<154

[1]No samples available for February
[2] LLD for GW-04 is 142
[3] LLD for GW-03 is 137
[4] LLD for GW-04 is 151
[5] LLD for GW-01 is 181

Values are presented as the measured value and the 95% confidence level counting error.

ND = not detectable i.e. the value is not statistically different from zero at the 95% confidence level.

Note that the LLD in Table 14-1 is different from month-to-month. (See Section 9.1 for a further discussion of the LLD.) For a given set of circumstances, it is possible to obtain results which are statistically different from zero which results in false positives. This is most prone to happen at the low levels of activity encountered in these samples given the statistical nature of radioactive decay. For example, if the net count in the H-3 quantification is based on subtracting a predetermined, average background from the total gross count and the actual background at the time of analysis is higher than the average background, a higher net count will result yielding a higher net H-3 concentration. Statistical variability may account for the positive results at GW-04 for the months of July and September. Based on the known statistical background variability, it is concluded that two positive results at GW-04 are false positives resulting from fluctuations in background.

15.0 Additional Monitoring

In support of the Nuclear Energy Institute Groundwater Protection Initiative, the groundwater monitoring program was expanded. Therefore, samples were obtained at a number of various locations around the site during 2006 (Table 15-1). In addition to the system of manholes used to access underground electrical conduits, water samples were obtained from the subsurface drainage (SSD) system under the plant. Samples also were obtained from two marshy areas on site. One is located on the north side of the plant (North Bog) and one is located south of the now closed and remediated retention pond (EIC Bog). This latter site had been sampled as part of the retention pond closure/remediation project in 2002 and found to have tritium concentrations of 3000 pCi/l. The North Bog had not been previously sampled. In addition to these samples, the beach drain samples, currently analyzed as part of the effluent program, were sent to the REMP laboratory for analyses at environmental LLDs which are lower than the ones available onsite.

Table 15-1
MISCELLANEOUS 2006 GROUNDWATER MONITORING

Manholes	pCi/l		
MH-01	280	±	90
MH-02	296	±	90
MH-03	252	±	88
MH-05	350	±	92
MH-09	167	±	85
MH-14	255	±	89
MH-16	181	±	86
MH-19	277	±	89
MH-20	<MDA	±	

Façade Wells	pCi/l		
Unit 1	421	±	88
Unit 2	<MDA	±	

Subsurface Drains	pCi/l		
SSD E-10	422	±	95
SSD F-05	470	±	97
SSD E-22	550	±	100
SSD F-14	506	±	98
SSD B-14	1043	±	116
SSD E-13	467	±	97
SSD A-15	881	±	130

SBCC Well	pCi/l
	<MDA

Beach Drains	pCi/l		
S-01	181	±	86
S-06	328	±	91
S-07	172	±	85

Bogs	pCi/l		
North Bog	163	±	74
EIC Bog	355	±	83
North Bog[1]	<MDA	±	

Error is the counting error at the 95% confidence level. The <MDA indicates that the sample result was below the minimum detectable activity

[1] Second sample

Results indicate that the manholes and SSDs around the plant, as well as the beach drains and bogs contain low levels of tritium. The manholes and the SSDs are not connected based on plant drawings. Because the manhole H-3 concentrations are lower that the SSD H-3 concentrations, it appears that the two systems may not be filled with groundwater from the same source. The

current SSD tritium may be the residual activity from the spent fuel pool leakage in the 1970s. There are no known sources for this tritium. [It should be noted that the 7 sampled SSDs were the only ones with water. Six others were dry and one was not accessible.] In comparison, the manholes, based on their proximity to the former retention pond, most likely represent groundwater which diffused out of the retention pond during its operation. The manhole H-3 values are more in line with the values obtained from the two intermittent streams (Table 14-1, GW-02 and GW-03). The EIC Bog results are an order of magnitude lower than the values found prior to the retention pond closure in 2002 indicating the pond was one source of the bog water. Supporting this conclusion is the observation that there is less water in the bog now than there was in 2002. The beach drain results are below the plant detection limits. These results indicate an interconnection with the manhole and SSD groundwater tritium source. A plant modification in 2002 connected the SSD system to the yard drains based on not finding any H-3 in the SSD system using plant analytical LLDs. As expected, tritium was not detected in the SBCC well which draws water from the deep, drinking water aquifer. Finally, only the Unit 1 façade well sample indicated the presence of H-3. The façade wells are stand pipes (2 per unit) that are used to sample the groundwater under each façade to determine the height of the groundwater and its chemical composition. These results indicate that the groundwater under Unit 1 may not be connected to the groundwater under Unit 2.

16.0 Groundwater Summary

Groundwater monitoring indicates that low levels of tritium occur in the upper soil layer but not in the deep, drinking water aquifer. These results also indicate that the low levels of tritium are restricted to a small, well defined area close to the plant. This area is bounded by the streams around the former retention pond on the west and south and by the North Bog and yard drains on the north. This is in agreement with 1997 – 2002 surveys taken for the closure and remediation of the retention pond. These former surveys also indicated that there was no tritium outside of the plant boundary.

Based on the results in Table 15-1, the groundwater monitoring program has been expanded and modified for 2007. The SBCC well, the two bogs, the facade wells and the drinking water well for Warehouse #6 located on the north side of the property were permanently added to the program. The beach drain samples are to be sent to a vendor to be analyzed using the REMP tritium LLD. Other sampling points will be added based on an ongoing evaluation of additional groundwater access points.

APPENDIX 1

Environmental, Inc. Midwest Laboratory
Final Report for the Point Beach Nuclear Plant
January – December 2006

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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FINAL REPORT
TO
WISCONSIN ELECTRIC POWER COMPANY
MILWAUKEE, WISCONSIN

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)
FOR
THE POINT BEACH NUCLEAR PLANT
TWO RIVERS, WISCONSIN

PREPARED AND SUBMITTED
BY
ENVIRONMENTAL INCORPORATED MIDWEST LABORATORY

Project Number: 8006

received & reviewed 2-13-07

Reporting Period: January-December, 2006

Reviewed and
Approved by _____ Date 02-06-2007
B. Grob, M.S.
Laboratory Manager

Distribution: K. Johansen

POINT BEACH NUCLEAR PLANT

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POINT BEACH NUCLEAR PLANT

1.0 INTRODUCTION

The following constitutes the final 2006 Monthly Progress Report for the Environmental Radiological Monitoring Program conducted at the Point Beach Nuclear Plant, Two Rivers, Wisconsin. Results of analyses are presented in the attached tables. Data tables reflect sample analysis results for both Technical Specification requirements and Special Interest locations and samples are randomly selected within the Program monitoring area to provide additional data for cross-comparisons.

For gamma isotopic analyses, the spectrum covers an energy range from 80 to 2048 KeV. Specifically included are Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-95, Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141, and Ce-144. Naturally occurring gamma-emitters, such as K-40 and Ra daughters, are frequently detected in soil and sediment samples. Specific isotopes listed are K-40, Tl-208, Pb-212, Bi-214, Ra-226 and Ac-228. Unless noted otherwise, the results reported under "Other Gammas" are for Co-60 and may be higher or lower for other radionuclides.

All concentrations, except gross beta, are decay corrected to the time of collection.

All samples were collected within the scheduled period unless noted otherwise in the Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

2.0 LISTING OF MISSED SAMPLES

Sample Type	Location	Expected Collection Date	Reason
AP/AI	E-02	04-05-06	Sampler had shut off.
AP/AI	E-02	05-03-06	Sampler had shut off.
AP/AI	E-04	06-02-06	No power to sampler.
AP/AI	E-08	06-02-06	No power to sampler.

NOTE: Page 3 is intentionally left out.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-01, Meteorological Tower
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	300	0.015 ± 0.003	< 0.014
01-12-06	347	0.017 ± 0.003	< 0.012
01-18-06	257	0.024 ± 0.004	< 0.012
01-26-06	345	0.026 ± 0.003	< 0.005
02-01-06	259	0.018 ± 0.004	< 0.011
02-09-06	346	0.017 ± 0.003	< 0.009
02-15-06	259	0.020 ± 0.004	< 0.014
02-22-06	302	0.028 ± 0.004	< 0.008
03-01-06	304	0.024 ± 0.004	< 0.017
03-09-06	343	0.014 ± 0.003	< 0.009
03-15-06	259	0.017 ± 0.004	< 0.021
03-22-06	305	0.020 ± 0.004	< 0.017
03-29-06	302	0.012 ± 0.003	< 0.023
1st Quarter Mean ± s.d.		0.019 ± 0.005	< 0.013
04-05-06	301	0.016 ± 0.003	< 0.021
04-12-06	306	0.022 ± 0.004	< 0.019
04-19-06	298	0.016 ± 0.003	< 0.006
04-27-06	346	0.014 ± 0.003	< 0.013
05-03-06	261	0.017 ± 0.004	< 0.010
05-11-06	307	0.016 ± 0.003	< 0.025
05-17-06	296	0.011 ± 0.003	< 0.009
05-24-06	302	0.011 ± 0.003	< 0.012
06-02-06	388	0.022 ± 0.003	< 0.018
06-07-06	216	0.014 ± 0.004	< 0.013
06-14-06	306	0.010 ± 0.003	< 0.016
06-20-06	252	0.025 ± 0.004	< 0.020
06-28-06	349	0.014 ± 0.003	< 0.016
2nd Quarter Mean ± s.d.		0.016 ± 0.005	< 0.015

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	303	0.021 ± 0.004	< 0.010
07-12-06	307	0.019 ± 0.003	< 0.020
07-19-06	299	0.029 ± 0.004	< 0.016
07-27-06	334	0.023 ± 0.004	< 0.015
08-02-06	250	0.030 ± 0.004	< 0.021
08-09-06	298	0.023 ± 0.004	< 0.012
08-16-06	287	0.018 ± 0.004	< 0.007
08-23-06	293	0.026 ± 0.004	< 0.016
08-30-06	303	0.029 ± 0.004	< 0.018
09-06-06	300	0.020 ± 0.004	< 0.014
09-14-06	348	0.022 ± 0.003	< 0.022
09-20-06	261	0.025 ± 0.004	< 0.013
09-27-06	300	0.022 ± 0.004	< 0.011
3rd Quarter Mean ± s.d.		0.024 ± 0.004	< 0.015
10-04-06	300	0.022 ± 0.004	< 0.025
10-11-06	309	0.016 ± 0.003	< 0.012
10-18-06	297	0.017 ± 0.003	< 0.007
10-26-06	351	0.016 ± 0.003	< 0.009
11-01-06	256	0.022 ± 0.004	< 0.018
11-08-06	306	0.034 ± 0.004	< 0.017
11-15-06	299	0.018 ± 0.004	< 0.018
11-22-06	302	0.027 ± 0.004	< 0.010
11-29-06	303	0.031 ± 0.004	< 0.018
12-06-06	301	0.033 ± 0.004	< 0.018
12-13-06	304	0.030 ± 0.004	< 0.012
12-20-06	304	0.032 ± 0.004	< 0.018
12-27-06	299	0.027 ± 0.004	< 0.014
4th Quarter Mean ± s.d.		0.025 ± 0.007	< 0.015
Cumulative Average		0.021 ± 0.006	< 0.015

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-02, Site Boundary Control Center
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	296	0.018 ± 0.004	< 0.014
01-12-06	337	0.019 ± 0.003	< 0.015
01-18-06	250	0.027 ± 0.004	< 0.012
01-26-06	352	0.025 ± 0.003	< 0.005
02-01-06	251	0.019 ± 0.004	< 0.011
02-09-06	336	0.018 ± 0.003	< 0.010
02-15-06	243	0.018 ± 0.004	< 0.015
02-22-06	293	0.027 ± 0.004	< 0.009
03-01-06	295	0.020 ± 0.004	< 0.018
03-09-06	334	0.011 ± 0.003	< 0.009
03-15-06	252	0.012 ± 0.004	< 0.022
03-22-06	295	0.016 ± 0.004	< 0.018
03-29-06	293	0.012 ± 0.003	< 0.023
1st Quarter Mean ± s.d.		0.019 ± 0.005	< 0.014
04-05-06		ND[a]	
04-12-06	297	0.021 ± 0.004	< 0.020
04-19-06	290	0.018 ± 0.003	< 0.006
04-27-06	335	0.013 ± 0.003	< 0.014
05-03-06		ND[a]	
05-11-06	335	0.017 ± 0.003	< 0.023
05-17-06	251	0.008 ± 0.003	< 0.011
05-24-06	295	0.014 ± 0.003	< 0.013
06-02-06	376	0.021 ± 0.003	< 0.019
06-07-06	208	0.016 ± 0.004	< 0.013
06-14-06	297	0.012 ± 0.003	< 0.017
06-20-06	245	0.026 ± 0.004	< 0.021
06-28-06	338	0.012 ± 0.003	< 0.018
2nd Quarter Mean ± s.d.		0.016 ± 0.005	< 0.016

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	294	0.023 ± 0.004	< 0.011
07-12-06	298	0.018 ± 0.003	< 0.021
07-19-06	289	0.034 ± 0.004	< 0.016
07-27-06	335	0.024 ± 0.004	< 0.015
08-02-06	251	0.027 ± 0.004	< 0.021
08-09-06	300	0.022 ± 0.004	< 0.012
08-16-06	288	0.015 ± 0.003	< 0.007
08-23-06	293	0.029 ± 0.004	< 0.016
08-30-06	294	0.030 ± 0.004	< 0.019
09-06-06	291	0.018 ± 0.004	< 0.014
09-14-06	337	0.023 ± 0.003	< 0.023
09-20-06	253	0.023 ± 0.004	< 0.013
09-27-06	291	0.021 ± 0.004	< 0.012
3rd Quarter Mean ± s.d.		0.024 ± 0.005	< 0.015
10-04-06	291	0.021 ± 0.004	< 0.026
10-11-06	300	0.016 ± 0.003	< 0.013
10-18-06	288	0.018 ± 0.004	< 0.007
10-26-06	340	0.019 ± 0.003	< 0.009
11-01-06	248	0.017 ± 0.004	< 0.018
11-08-06	298	0.036 ± 0.004	< 0.017
11-15-06	290	0.018 ± 0.004	< 0.018
11-22-06	292	0.029 ± 0.004	< 0.011
11-29-06	295	0.033 ± 0.004	< 0.019
12-06-06	293	0.034 ± 0.004	< 0.018
12-13-06	296	0.031 ± 0.004	< 0.013
12-20-06	294	0.038 ± 0.004	< 0.019
12-27-06	290	0.025 ± 0.004	< 0.014
4th Quarter Mean ± s.d.		0.026 ± 0.008	< 0.016
Cumulative Average		0.021 ± 0.007	< 0.015

[a] "ND" = No data; see Table 2.0, Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-03, West Boundary
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	300	0.017 ± 0.003	< 0.014
01-12-06	347	0.022 ± 0.003	< 0.018
01-18-06	257	0.024 ± 0.004	< 0.012
01-26-06	346	0.025 ± 0.003	< 0.005
02-01-06	259	0.017 ± 0.004	< 0.011
02-09-06	346	0.020 ± 0.003	< 0.009
02-15-06	259	0.019 ± 0.004	< 0.014
02-22-06	302	0.031 ± 0.004	< 0.008
03-01-06	305	0.026 ± 0.004	< 0.017
03-09-06	344	0.013 ± 0.003	< 0.009
03-15-06	259	0.018 ± 0.004	< 0.021
03-22-06	305	0.015 ± 0.003	< 0.017
03-29-06	303	0.012 ± 0.003	< 0.023
1st Quarter Mean ± s.d.		0.020 ± 0.005	< 0.014
04-05-06	301	0.020 ± 0.003	< 0.022
04-12-06	306	0.026 ± 0.004	< 0.019
04-19-06	299	0.016 ± 0.003	< 0.006
04-27-06	346	0.016 ± 0.003	< 0.013
05-03-06	260	0.016 ± 0.004	< 0.010
05-09-06	279	0.017 ± 0.004	< 0.030
05-17-06	314	0.009 ± 0.003	< 0.009
05-24-06	295	0.011 ± 0.003	< 0.013
06-02-06	375	0.023 ± 0.003	< 0.019
06-07-06	209	0.021 ± 0.005	< 0.013
06-14-06	297	0.013 ± 0.003	< 0.017
06-20-06	246	0.023 ± 0.004	< 0.021
06-28-06	337	0.012 ± 0.003	< 0.014
2nd Quarter Mean ± s.d.		0.017 ± 0.005	< 0.016

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	294	0.023 ± 0.004	< 0.010
07-12-06	297	0.018 ± 0.003	< 0.021
07-19-06	290	0.029 ± 0.004	< 0.016
07-27-06	335	0.024 ± 0.004	< 0.015
08-02-06	251	0.023 ± 0.004	< 0.021
08-09-06	299	0.023 ± 0.004	< 0.012
08-16-06	288	0.017 ± 0.003	< 0.007
08-23-06	293	0.027 ± 0.004	< 0.016
08-30-06	294	0.033 ± 0.004	< 0.019
09-06-06	291	0.017 ± 0.003	< 0.014
09-14-06	338	0.020 ± 0.003	< 0.023
09-20-06	253	0.026 ± 0.004	< 0.013
09-27-06	292	0.023 ± 0.004	< 0.012
3rd Quarter Mean ± s.d.		0.023 ± 0.005	< 0.015
10-04-06	291	0.019 ± 0.004	< 0.026
10-11-06	299	0.018 ± 0.003	< 0.013
10-18-06	289	0.018 ± 0.004	< 0.007
10-26-06	340	0.014 ± 0.003	< 0.009
11-01-06	248	0.020 ± 0.004	< 0.018
11-08-06	297	0.045 ± 0.005	< 0.017
11-15-06	291	0.018 ± 0.004	< 0.018
11-22-06	292	0.029 ± 0.004	< 0.011
11-29-06	294	0.036 ± 0.004	< 0.019
12-06-06	292	0.031 ± 0.004	< 0.018
12-13-06	296	0.029 ± 0.004	< 0.013
12-20-06	294	0.039 ± 0.004	< 0.019
12-27-06	291	0.025 ± 0.004	< 0.014
4th Quarter Mean ± s.d.		0.026 ± 0.010	< 0.016
Cumulative Average		0.022 ± 0.007	< 0.015

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-04, North Boundary
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	300	0.012 ± 0.003	< 0.014
01-12-06	314	0.017 ± 0.003	< 0.018
01-18-06	257	0.025 ± 0.004	< 0.012
01-26-06	346	0.024 ± 0.003	< 0.005
02-01-06	259	0.021 ± 0.004	< 0.011
02-09-06	346	0.019 ± 0.003	< 0.009
02-15-06	259	0.018 ± 0.004	< 0.014
02-22-06	302	0.029 ± 0.004	< 0.008
03-01-06	305	0.026 ± 0.004	< 0.017
03-09-06	344	0.011 ± 0.003	< 0.009
03-15-06	259	0.016 ± 0.004	< 0.021
03-22-06	303	0.014 ± 0.003	< 0.017
03-29-06	305	0.009 ± 0.003	< 0.022
1st Quarter Mean ± s.d.		0.019 ± 0.006	< 0.014
04-05-06	301	0.019 ± 0.003	< 0.022
04-12-06	305	0.022 ± 0.004	< 0.019
04-19-06	299	0.018 ± 0.003	< 0.006
04-27-06	346	0.013 ± 0.003	< 0.013
05-03-06	260	0.020 ± 0.004	< 0.010
05-11-06	322	0.015 ± 0.003	< 0.024
05-17-06	310	0.007 ± 0.003	< 0.009
05-24-06	335	0.012 ± 0.003	< 0.011
06-02-06		ND[a]	
06-07-06	238	0.022 ± 0.004	< 0.012
06-14-06	336	0.008 ± 0.003	< 0.015
06-20-06	279	0.025 ± 0.004	< 0.018
06-28-06	382	0.018 ± 0.003	< 0.013
2nd Quarter Mean ± s.d.		0.017 ± 0.006	< 0.014

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	334	0.026 ± 0.004	< 0.009
07-12-06	337	0.018 ± 0.003	< 0.018
07-19-06	329	0.029 ± 0.004	< 0.014
07-27-06	380	0.025 ± 0.003	< 0.013
08-02-06	249	0.025 ± 0.004	< 0.021
08-09-06	339	0.021 ± 0.003	< 0.010
08-16-06	327	0.021 ± 0.003	< 0.007
08-23-06	333	0.024 ± 0.003	< 0.014
08-30-06	333	0.029 ± 0.004	< 0.017
09-06-06	330	0.015 ± 0.003	< 0.013
09-14-06	383	0.019 ± 0.003	< 0.020
09-20-06	287	0.024 ± 0.004	< 0.012
09-27-06	331	0.020 ± 0.003	< 0.010
3rd Quarter Mean ± s.d.		0.023 ± 0.004	< 0.014
10-04-06	298	0.021 ± 0.004	< 0.025
10-11-06	311	0.017 ± 0.003	< 0.012
10-18-06	300	0.017 ± 0.003	< 0.007
10-26-06	360	0.015 ± 0.003	< 0.008
11-01-06	263	0.020 ± 0.004	< 0.017
11-08-06	315	0.033 ± 0.004	< 0.016
11-15-06	302	0.020 ± 0.004	< 0.017
11-22-06	304	0.030 ± 0.004	< 0.010
11-29-06	306	0.036 ± 0.004	< 0.018
12-06-06	309	0.037 ± 0.004	< 0.017
12-13-06	313	0.030 ± 0.004	< 0.012
12-20-06	312	0.036 ± 0.004	< 0.018
12-27-06	330	0.025 ± 0.004	< 0.013
4th Quarter Mean ± s.d.		0.026 ± 0.008	< 0.015
Cumulative Average		0.021 ± 0.007	< 0.014

[a] "ND" = No data; see Table 2.0, Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-08, G.J. Francar Residence
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	300	0.015 ± 0.003	< 0.014
01-12-06	347	0.019 ± 0.003	< 0.011
01-18-06	258	0.027 ± 0.004	< 0.012
01-26-06	346	0.024 ± 0.003	< 0.005
02-01-06	259	0.017 ± 0.004	< 0.011
02-09-06	346	0.019 ± 0.003	< 0.009
02-15-06	259	0.021 ± 0.004	< 0.014
02-22-06	301	0.035 ± 0.004	< 0.008
03-01-06	305	0.025 ± 0.004	< 0.017
03-09-06	345	0.012 ± 0.003	< 0.009
03-15-06	259	0.018 ± 0.004	< 0.021
03-22-06	302	0.019 ± 0.004	< 0.017
03-29-06	306	0.012 ± 0.003	< 0.022
1st Quarter Mean ± s.d.		0.020 ± 0.006	< 0.013
04-05-06	301	0.021 ± 0.003	< 0.021
04-12-06	305	0.022 ± 0.004	< 0.019
04-19-06	299	0.022 ± 0.004	< 0.006
04-27-06	346	0.012 ± 0.003	< 0.013
05-03-06	260	0.020 ± 0.004	< 0.010
05-11-06	346	0.016 ± 0.003	< 0.023
05-17-06	259	0.010 ± 0.003	< 0.010
05-24-06	308	0.010 ± 0.003	< 0.012
06-02-06		ND[a]	
06-07-06	216	0.017 ± 0.004	< 0.013
06-14-06	305	0.010 ± 0.003	< 0.016
06-20-06	256	0.024 ± 0.004	< 0.020
06-28-06	347	0.015 ± 0.003	< 0.018
2nd Quarter Mean ± s.d.		0.017 ± 0.005	< 0.015

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	304	0.026 ± 0.004	< 0.010
07-12-06	306	0.018 ± 0.003	< 0.020
07-19-06	299	0.029 ± 0.004	< 0.016
07-27-06	345	0.021 ± 0.003	< 0.015
08-02-06	259	0.024 ± 0.004	< 0.020
08-09-06	309	0.022 ± 0.003	< 0.011
08-16-06	297	0.019 ± 0.004	< 0.007
08-23-06	301	0.025 ± 0.004	< 0.015
08-30-06	302	0.028 ± 0.004	< 0.018
09-06-06	300	0.019 ± 0.003	< 0.014
09-14-06	348	0.020 ± 0.003	< 0.022
09-20-06	261	0.021 ± 0.004	< 0.013
09-27-06	300	0.020 ± 0.003	< 0.011
3rd Quarter Mean ± s.d.		0.022 ± 0.004	< 0.015
10-04-06	301	0.020 ± 0.004	< 0.025
10-11-06	308	0.017 ± 0.003	< 0.012
10-18-06	298	0.015 ± 0.003	< 0.007
10-26-06	350	0.014 ± 0.003	< 0.009
11-01-06	256	0.019 ± 0.004	< 0.018
11-08-06	306	0.037 ± 0.004	< 0.017
11-15-06	302	0.017 ± 0.004	< 0.017
11-22-06	300	0.026 ± 0.004	< 0.010
11-29-06	303	0.040 ± 0.004	< 0.018
12-06-06	301	0.029 ± 0.004	< 0.018
12-13-06	305	0.028 ± 0.004	< 0.012
12-20-06	306	0.034 ± 0.004	< 0.018
12-27-06	298	0.025 ± 0.004	< 0.014
4th Quarter Mean ± s.d.		0.025 ± 0.009	< 0.015
Cumulative Average		0.021 ± 0.007	< 0.014

[a] "ND" = No data; see Table 2.0, Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-20, Silver Lake
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-06	301	0.013 ± 0.003	< 0.014
01-12-06	344	0.021 ± 0.003	< 0.015
01-18-06	261	0.025 ± 0.004	< 0.012
01-26-06	349	0.026 ± 0.003	< 0.005
02-01-06	255	0.018 ± 0.004	< 0.011
02-09-06	345	0.020 ± 0.003	< 0.009
02-15-06	260	0.021 ± 0.004	< 0.014
02-22-06	299	0.029 ± 0.004	< 0.008
03-01-06	306	0.030 ± 0.004	< 0.017
03-09-06	349	0.012 ± 0.003	< 0.008
03-15-06	255	0.018 ± 0.004	< 0.022
03-22-06	302	0.016 ± 0.004	< 0.017
03-29-06	303	0.012 ± 0.003	< 0.023
1st Quarter Mean ± s.d.		0.020 ± 0.006	< 0.013
04-05-06	303	0.017 ± 0.003	< 0.021
04-12-06	303	0.021 ± 0.004	< 0.020
04-19-06	301	0.016 ± 0.003	< 0.006
04-27-06	345	0.013 ± 0.003	< 0.013
05-03-06	260	0.017 ± 0.004	< 0.010
05-11-06	345	0.015 ± 0.003	< 0.023
05-17-06	261	0.010 ± 0.003	< 0.010
05-24-06	342	0.014 ± 0.003	< 0.010
06-02-06	349	0.019 ± 0.003	< 0.019
06-07-06	213	0.020 ± 0.005	< 0.013
06-14-06	304	0.012 ± 0.003	< 0.016
06-20-06	255	0.023 ± 0.004	< 0.020
06-28-06	346	0.014 ± 0.003	< 0.011
2nd Quarter Mean ± s.d.		0.016 ± 0.004	< 0.015

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-05-06	305	0.025 ± 0.004	< 0.010
07-12-06	307	0.021 ± 0.003	< 0.020
07-19-06	298	0.030 ± 0.004	< 0.016
07-27-06	345	0.019 ± 0.003	< 0.015
08-02-06	258	0.022 ± 0.004	< 0.021
08-09-06	309	0.023 ± 0.004	< 0.011
08-16-06	296	0.020 ± 0.004	< 0.007
08-23-06	303	0.028 ± 0.004	< 0.015
08-30-06	302	0.031 ± 0.004	< 0.018
09-06-06	304	0.018 ± 0.003	< 0.014
09-14-06	348	0.021 ± 0.003	< 0.022
09-20-06	257	0.021 ± 0.004	< 0.013
09-27-06	303	0.021 ± 0.003	< 0.011
3rd Quarter Mean ± s.d.		0.023 ± 0.004	< 0.015
10-04-06	300	0.019 ± 0.004	< 0.025
10-11-06	306	0.015 ± 0.003	< 0.012
10-18-06	299	0.015 ± 0.003	< 0.007
10-26-06	350	0.020 ± 0.003	< 0.009
11-01-06	256	0.018 ± 0.004	< 0.018
11-08-06	308	0.038 ± 0.004	< 0.017
11-15-06	301	0.018 ± 0.004	< 0.018
11-22-06	299	0.026 ± 0.004	< 0.011
11-29-06	303	0.034 ± 0.004	< 0.018
12-06-06	301	0.030 ± 0.004	< 0.018
12-13-06	309	0.029 ± 0.004	< 0.012
12-20-06	305	0.035 ± 0.004	< 0.018
12-27-06	299	0.024 ± 0.004	< 0.014
4th Quarter Mean ± s.d.		0.025 ± 0.008	< 0.015
Cumulative Average		0.021 ± 0.006	< 0.015

POINT BEACH NUCLEAR PLANT

GAMMA EMITTERS IN QUARTERLY COMPOSITES OF

AIR PARTICULATE FILTERS

(Concentration pCi/m3)

Locatior	Lab Code	Be-7	Cs-134	Cs-137	Other Gammas[a]	Volume
	Req. LLD	-	0.01	0.01	(0.10)	m^3
			1st Quarter			
E-01	EAP- 2684	0.058 ± 0.013	-0.0001 ± 0.0004	-0.0003 ± 0.0004	0.0001 ± 0.0006	3928
E-02	- 2685	0.062 ± 0.016	-0.0001 ± 0.0005	0.0001 ± 0.0006	0.0002 ± 0.0005	3827
E-03	- 2686	0.039 ± 0.014	-0.0004 ± 0.0005	-0.0001 ± 0.0006	0.0001 ± 0.0007	3932
E-04	- 2687	0.056 ± 0.014	0.0001 ± 0.0005	-0.0001 ± 0.0005	-0.0002 ± 0.0007	3899
E-08	- 2688	0.077 ± 0.017	0.0001 ± 0.0005	-0.0001 ± 0.0005	-0.0001 ± 0.0007	3933
E-20	- 2689	0.077 ± 0.018	-0.0002 ± 0.0005	-0.0002 ± 0.0006	0.0007 ± 0.0006	3929
			2nd Quarter			
E-01	EAP- 4918	0.080 ± 0.016	-0.0006 ± 0.0007	0.0003 ± 0.0005	0.0002 ± 0.0006	3928
E-02	- 4919	0.081 ± 0.009	-0.0002 ± 0.0006	0.0005 ± 0.0005	0.0007 ± 0.0009	3267
E-03	- 4920	0.070 ± 0.018	-0.0002 ± 0.0005	0.0002 ± 0.0005	0.0010 ± 0.0009	3864
E-04	- 4921	0.082 ± 0.019	-0.0004 ± 0.0007	0.0003 ± 0.0006	0.0001 ± 0.0005	3713
E-08	- 4922	0.081 ± 0.014	-0.0001 ± 0.0004	-0.0001 ± 0.0005	-0.0002 ± 0.0005	3548
E-20	- 4923	0.099 ± 0.015	0.0001 ± 0.0004	-0.0002 ± 0.0005	0.0004 ± 0.0004	3927
			3rd Quarter			
E-01	EAP- 7565	0.074 ± 0.015	0.0006 ± 0.0006	-0.0006 ± 0.0007	0.0004 ± 0.0005	3883
E-02	- 7566	0.081 ± 0.017	-0.0001 ± 0.0006	-0.0008 ± 0.0006	-0.0004 ± 0.0008	3814
E-03	- 7567	0.080 ± 0.015	-0.0004 ± 0.0007	0.0001 ± 0.0006	0.0003 ± 0.0005	3815
E-04	- 7568	0.085 ± 0.014	0.0001 ± 0.0005	0.0005 ± 0.0004	0.0002 ± 0.0007	4292
E-08	- 7569	0.093 ± 0.015	0.0001 ± 0.0006	0.0001 ± 0.0005	0.0002 ± 0.0007	3931
E-20	- 7570	0.083 ± 0.014	0.0007 ± 0.0007	0.0001 ± 0.0005	-0.0001 ± 0.0008	3935
			4th Quarter			
E-01	EAP- 9693	0.058 ± 0.013	-0.0002 ± 0.0005	0.0001 ± 0.0005	-0.0002 ± 0.0005	3931
E-02	- 9694	0.055 ± 0.010	0.0002 ± 0.0003	-0.0001 ± 0.0004	-0.0001 ± 0.0004	3815
E-03	- 9695	0.070 ± 0.013	-0.0008 ± 0.0005	0.0001 ± 0.0005	-0.0005 ± 0.0006	3814
E-04	- 9696	0.062 ± 0.012	0.0001 ± 0.0004	0.0004 ± 0.0005	-0.0001 ± 0.0004	4023
E-08	- 9697	0.056 ± 0.011	0.0003 ± 0.0003	0.0001 ± 0.0003	-0.0001 ± 0.0003	3934
E-20	- 9698	0.069 ± 0.012	-0.0003 ± 0.0005	-0.0004 ± 0.0005	0.0001 ± 0.0005	3936

[a] See Introduction

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-11 Funk Dairy Farm

Collection Date	01-11-06	02-08-06	03-08-06	Required LLD
Lab Code	EMI-215	EMI-637	EMI-1270	
Sr-89	0.0 ± 0.8	-0.4 ± 0.7	0.9 ± 0.9	5.0
Sr-90	1.0 ± 0.4	1.0 ± 0.3	0.8 ± 0.3	1.0
I-131	-0.01 ± 0.16	0.00 ± 0.14	-0.17 ± 0.13	0.5
K-40	1396 ± 123	1365 ± 101	1393 ± 109	
Cs-134	0.2 ± 2.2	-0.9 ± 1.7	-22.2 ± 4.0	5.0
Cs-137	0.8 ± 2.2	0.8 ± 2.0	1.8 ± 3.1	5.0
Ba-La-140	-1.3 ± 2.2	-0.2 ± 1.8	3.5 ± 2.2	5.0
Other Gammas[a]	2.0 ± 3.0	-0.2 ± 2.4	-0.7 ± 2.8	15.0

Collection Date	04-12-06	05-10-06	06-14-06	Required LLD
Lab Code	EMI-2368	EMI-3139	EMI-4050	
Sr-89	-0.1 ± 0.4	-0.8 ± 0.8	0.0 ± 0.7	5.0
Sr-90	0.1 ± 0.3	0.9 ± 0.3	0.9 ± 0.3	1.0
I-131	-0.03 ± 0.13	0.07 ± 0.20	-0.05 ± 0.19	0.5
K-40	1038 ± 164	1408 ± 122	1164 ± 117	
Cs-134	0.1 ± 3.6	-0.1 ± 2.2	0.5 ± 1.9	5.0
Cs-137	0.8 ± 2.2	0.8 ± 2.3	0.9 ± 2.3	5.0
Ba-La-140	0.5 ± 2.4	0.2 ± 2.2	-1.6 ± 2.4	5.0
Other Gammas[a]	-0.4 ± 4.9	-3.2 ± 3.5	3.1 ± 2.1	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-11 Funk Dairy Farm

Collection Date	07-12-06	08-09-06	09-13-06	Required LLD
Lab Code	EMI-4599,00	EMI-5380	EMI-6234	
Sr-89	0.5 ± 0.8	-0.2 ± 0.7	-0.3 ± 1.0	5.0
Sr-90	0.7 ± 0.3	0.7 ± 0.3	1.3 ± 0.4	1.0
I-131	0.19 ± 0.19	-0.06 ± 0.14	0.00 ± 0.14	0.5
K-40	1367 ± 83	1342 ± 102	1244 ± 103	
Cs-134	-6.2 ± 3.1	-0.9 ± 1.3	-0.4 ± 1.8	5.0
Cs-137	0.0 ± 1.6	1.5 ± 1.7	-1.3 ± 1.9	5.0
Ba-La-140	0.5 ± 1.4	-0.7 ± 1.6	-0.1 ± 1.6	5.0
Other Gammas[a]	-1.3 ± 2.1	-0.9 ± 1.7	0.1 ± 2.6	15.0

Collection Date	10-11-06	11-08-06	12-13-06	Required LLD
Lab Code	EMI-7069	EMI-8099	EMI-8933	
Sr-89	0.8 ± 1.0	-0.9 ± 0.9	-0.6 ± 0.9	5.0
Sr-90	1.1 ± 0.3	1.1 ± 0.3	0.8 ± 0.3	1.0
I-131	0.03 ± 0.18	0.15 ± 0.16	0.00 ± 0.15	0.5
K-40	1314 ± 126	1375 ± 122	1354 ± 124	
Cs-134	-1.5 ± 2.1	0.9 ± 2.1	0.8 ± 1.8	5.0
Cs-137	-2.6 ± 2.3	1.5 ± 2.5	0.7 ± 2.0	5.0
Ba-La-140	-1.4 ± 2.6	-0.1 ± 2.0	0.3 ± 2.7	5.0
Other Gammas[a]	-2.6 ± 2.5	-3.0 ± 2.8	0.9 ± 2.2	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-21 Strutz Dairy Farm

Collection Date	01-11-06	02-08-06	03-08-06	Required LLD
Lab Code	EMI-216	EMI-638	EMI-1271	
Sr-89	-0.4 ± 0.7	0.3 ± 0.6	-0.4 ± 0.7	5.0
Sr-90	1.0 ± 0.3	0.4 ± 0.3	0.7 ± 0.3	1.0
I-131	-0.02 ± 0.17	-0.03 ± 0.15	0.08 ± 0.15	0.5
K-40	1341 ± 98	1379 ± 104	1327 ± 67	
Cs-134	-1.9 ± 2.5	-5.6 ± 2.4	0.0 ± 1.1	5.0
Cs-137	1.3 ± 2.3	0.4 ± 2.4	0.4 ± 1.4	5.0
Ba-La-140	0.9 ± 1.4	-0.7 ± 2.0	-1.3 ± 1.5	5.0
Other Gammas[a]	0.2 ± 2.0	-0.3 ± 2.5	1.9 ± 1.7	15.0

Collection Date	04-12-06	05-10-06	06-14-06	Required LLD
Lab Code	EMI-2370	EMI-3140	EMI-4051	
Sr-89	0.0 ± 0.6	-0.1 ± 0.7	0.5 ± 0.7	5.0
Sr-90	0.7 ± 0.3	0.6 ± 0.3	0.6 ± 0.3	1.0
I-131	-0.02 ± 0.20	-0.03 ± 0.17	0.17 ± 0.22	0.5
K-40	1189 ± 80	1210 ± 113	1347 ± 108	
Cs-134	0.3 ± 1.3	0.5 ± 1.7	0.4 ± 1.7	5.0
Cs-137	1.3 ± 1.5	1.7 ± 2.0	1.5 ± 1.8	5.0
Ba-La-140	-1.7 ± 1.7	-2.0 ± 2.1	-0.6 ± 2.2	5.0
Other Gammas[a]	-1.0 ± 1.9	-2.0 ± 2.2	-1.2 ± 2.0	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-21 Strutz Dairy Farm

Collection Date	07-12-06	08-09-06	09-13-06	Required LLD
Lab Code	EMI-4601	EMI-5381	EMI-6235	
Sr-89	-0.5 ± 0.7	0.0 ± 0.7	0.6 ± 0.8	5.0
Sr-90	0.7 ± 0.4	0.6 ± 0.3	0.6 ± 0.3	1.0
I-131	0.12 ± 0.26	-0.02 ± 0.21	0.09 ± 0.13	0.5
K-40	1478 ± 156	1323 ± 111	1369 ± 109	
Cs-134	0.0 ± 2.9	-0.1 ± 1.6	0.9 ± 2.3	5.0
Cs-137	1.3 ± 3.0	-0.1 ± 1.8	-2.2 ± 2.5	5.0
Ba-La-140	-0.2 ± 3.2	0.9 ± 1.7	-1.3 ± 2.0	5.0
Other Gammas[a]	-3.5 ± 4.1	2.1 ± 2.3	0.6 ± 2.1	15.0

Collection Date	10-11-06	11-08-06	12-13-06	Required LLD
Lab Code	EMI-7070	EMI-8100	EMI-8934	
Sr-89	0.7 ± 0.9	0.2 ± 1.0	0.5 ± 0.8	5.0
Sr-90	0.5 ± 0.3	0.6 ± 0.3	0.3 ± 0.3	1.0
I-131	0.15 ± 0.16	-0.02 ± 0.16	-0.06 ± 0.14	0.5
K-40	1356 ± 117	1319 ± 101	1359 ± 120	
Cs-134	-4.7 ± 2.7	-4.3 ± 2.3	-1.3 ± 2.1	5.0
Cs-137	1.2 ± 2.7	-1.4 ± 2.4	-1.1 ± 2.2	5.0
Ba-La-140	-2.2 ± 2.4	-0.1 ± 2.0	0.8 ± 1.9	5.0
Other Gammas[a]	-1.1 ± 2.4	0.5 ± 2.0	-0.8 ± 2.4	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-40 Barta

Collection Date	01-11-06	02-08-06	03-08-06	Required LLD
Lab Code	EMI-217, 8	EMI-639	EMI-1272	
Sr-89	-0.1 ± 0.8	-1.0 ± 0.8	-0.7 ± 0.8	5.0
Sr-90	1.1 ± 0.3	1.8 ± 0.4	1.2 ± 0.3	1.0
I-131	-0.13 ± 0.22	0.22 ± 0.23	-0.11 ± 0.15	0.5
K-40	1286 ± 77	1277 ± 94	1346 ± 123	
Cs-134	-0.1 ± 1.8	-20.8 ± 3.3	0.6 ± 2.0	5.0
Cs-137	0.9 ± 2.0	0.6 ± 2.5	0.2 ± 2.1	5.0
Ba-La-140	-2.4 ± 1.7	3.6 ± 1.6	-1.4 ± 2.3	5.0
Other Gammas[a]	-0.8 ± 2.4	-1.8 ± 2.3	-1.1 ± 2.6	15.0

Collection Date	04-12-06	05-10-06	06-14-06	Required LLD
Lab Code	EMI-2371	EMI-3141	EMI-4052	
Sr-89	-0.2 ± 0.6	-0.3 ± 0.9	0.4 ± 0.8	5.0
Sr-90	0.8 ± 0.3	1.2 ± 0.3	1.0 ± 0.3	1.0
I-131	-0.04 ± 0.13	0.05 ± 0.16	0.03 ± 0.18	0.5
K-40	1322 ± 159	1291 ± 95	1292 ± 112	
Cs-134	-0.3 ± 2.7	0.5 ± 1.9	0.9 ± 2.2	5.0
Cs-137	0.1 ± 2.9	-0.6 ± 2.3	-0.7 ± 2.7	5.0
Ba-La-140	-5.8 ± 3.9	-0.2 ± 1.6	1.4 ± 2.4	5.0
Other Gammas[a]	1.8 ± 3.7	1.6 ± 2.1	-1.4 ± 2.4	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-40 Barta

Collection Date	07-12-06	08-09-06	09-13-06	Required LLD
Lab Code	EMI-4602	EMI-5382	EMI-6236	
Sr-89	-0.7 ± 0.8	0.2 ± 0.8	-0.2 ± 1.0	5.0
Sr-90	1.3 ± 0.4	1.2 ± 0.3	1.2 ± 0.3	1.0
I-131	0.11 ± 0.19	-0.03 ± 0.15	0.11 ± 0.22	0.5
K-40	1373 ± 119	1429 ± 106	1357 ± 112	
Cs-134	-1.9 ± 2.0	-2.4 ± 2.4	-3.6 ± 2.7	5.0
Cs-137	-1.2 ± 2.4	-0.1 ± 2.7	-1.2 ± 2.7	5.0
Ba-La-140	1.6 ± 1.1	1.4 ± 1.4	-2.9 ± 2.1	5.0
Other Gammas[a]	-1.5 ± 2.5	-1.3 ± 2.4	1.0 ± 2.6	15.0

Collection Date	10-11-06	11-08-06	12-13-06	Required LLD
Lab Code	EMI-7071	EMI-8101	EMI-8935	
Sr-89	-0.7 ± 1.0	-0.4 ± 1.1	0.1 ± 1.0	5.0
Sr-90	1.4 ± 0.4	1.2 ± 0.4	1.3 ± 0.4	1.0
I-131	0.08 ± 0.14	0.08 ± 0.22	-0.05 ± 0.14	0.5
K-40	1327 ± 118	1402 ± 122	1337 ± 125	
Cs-134	-1.1 ± 2.0	-3.7 ± 2.9	-0.3 ± 2.3	5.0
Cs-137	1.1 ± 2.4	-1.1 ± 2.9	-1.7 ± 2.2	5.0
Ba-La-140	0.5 ± 2.2	-1.1 ± 2.0	-1.6 ± 2.2	5.0
Other Gammas[a]	0.8 ± 2.8	-0.8 ± 2.3	1.2 ± 2.5	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN WELL WATER SAMPLES, E-10

(Quarterly Collections)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Req. LLD
Collection Date	01-12-06	04-11-06	07-10-06	10-10-06	
Lab Code	EWW-248	EWW-2399	EWW-4885	EWW-7076	
Gross Beta	0.9 ± 2.4	0.4 ± 0.8	3.4 ± 1.4	2.4 ± 2.0	4.0
H-3	37.4 ± 89.3	6.3 ± 58.9	86.2 ± 78.4	61.7 ± 92.3	500
Sr-89	-0.3 ± 0.5	0.0 ± 0.4	0.4 ± 0.7	-0.3 ± 0.5	5.0
Sr-90	0.1 ± 0.2	0.1 ± 0.2	-0.1 ± 0.2	0.3 ± 0.2	1.0
I-131	-0.06 ± 0.15	0.10 ± 0.15	-0.03 ± 0.30	0.11 ± 0.13	0.5
Mn-54	1.2 ± 1.6	-0.6 ± 2.4	-1.0 ± 2.1	-0.7 ± 3.4	10
Fe-59	-2.4 ± 3.4	1.8 ± 3.9	2.6 ± 4.4	2.5 ± 5.5	30
Co-58	0.3 ± 1.9	-1.2 ± 2.2	2.4 ± 2.0	0.4 ± 3.7	10
Co-60	0.2 ± 1.7	-2.5 ± 2.5	-0.4 ± 2.3	-0.7 ± 3.8	10
Zn-65	-2.1 ± 3.6	-3.5 ± 5.5	-2.0 ± 4.2	-2.3 ± 6.4	30
Zr-Nb-95	1.1 ± 1.9	-2.1 ± 2.6	1.0 ± 2.0	3.1 ± 2.6	15
Cs-134	-0.6 ± 1.5	-2.8 ± 2.2	-1.8 ± 1.8	1.4 ± 2.7	10
Cs-137	-0.8 ± 1.6	-0.9 ± 2.2	1.1 ± 1.8	-3.2 ± 3.6	10
Ba-La-140	-1.2 ± 2.0	-0.8 ± 2.6	-1.2 ± 2.4	-3.6 ± 4.9	15
Other Gammas[a]	-0.5 ± 1.8	0.5 ± 1.8	-2.2 ± 1.8	0.6 ± 3.2	30

[a] Ru-103

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-01 (Meteorological Tower)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-219	ELW-690	ELW-1369	ELW-2395	
Date Collected	01-11-06	02-09-06	03-08-06	04-11-06	Req. LLD
Gross beta	2.9 ± 0.7	2.3 ± 0.4	2.1 ± 0.4	3.9 ± 0.7	4.0
I-131	0.12 ± 0.16	-0.07 ± 0.16	0.03 ± 0.20	0.08 ± 0.12	0.5
Be-7	18.6 ± 17.5	-14.7 ± 29.5	26.4 ± 24.4	-3.9 ± 18.9	
Mn-54	2.0 ± 1.6	-2.0 ± 2.8	2.2 ± 2.2	-2.5 ± 3.6	10
Fe-59	4.7 ± 3.5	-1.7 ± 6.3	2.9 ± 4.6	5.7 ± 5.2	30
Co-58	0.1 ± 1.7	0.4 ± 2.4	-0.9 ± 2.4	-0.2 ± 2.9	10
Co-60	-1.8 ± 1.9	-0.7 ± 3.7	2.0 ± 2.8	1.1 ± 3.0	10
Zn-65	-1.1 ± 3.9	-0.3 ± 4.9	0.4 ± 5.2	2.1 ± 5.5	30
Zr-Nb-95	0.4 ± 1.9	0.1 ± 2.4	0.8 ± 2.0	1.6 ± 3.4	15
Cs-134	-1.3 ± 1.8	-1.1 ± 2.7	-1.0 ± 2.4	-0.6 ± 2.8	10
Cs-137	0.3 ± 1.9	1.6 ± 3.7	-1.3 ± 2.6	-4.1 ± 3.3	10
Ba-La-140	-1.7 ± 3.8	3.3 ± 3.9	-2.9 ± 2.9	1.3 ± 4.1	15
Other Gammas[a]	-2.4 ± 2.0	-1.5 ± 3.6	0.1 ± 2.8	0.8 ± 2.4	30

Lab Code	ELW-3241	ELW-4035	ELW-4823,4	ELW-5459	
Date Collected	05-10-06	06-16-06	07-14-06	08-10-06	Req. LLD
Gross beta	2.1 ± 0.4	1.4 ± 0.3	2.1 ± 0.4	2.2 ± 0.6	4.0
I-131	0.17 ± 0.20	0.11 ± 0.14	-0.09 ± 0.16	-0.02 ± 0.14	0.5
Be-7	-7.7 ± 27.4	3.5 ± 15.9	12.4 ± 18.9	-7.6 ± 28.2	
Mn-54	1.1 ± 3.2	1.6 ± 1.8	-0.9 ± 2.3	1.3 ± 2.7	10
Fe-59	4.1 ± 6.4	0.4 ± 3.5	-0.7 ± 4.5	-4.1 ± 6.2	30
Co-58	-0.6 ± 3.1	-2.5 ± 2.0	-1.9 ± 2.3	-2.1 ± 3.5	10
Co-60	-3.8 ± 3.8	-0.7 ± 2.1	-2.1 ± 3.2	0.6 ± 3.0	10
Zn-65	-1.6 ± 6.2	-3.1 ± 4.1	2.6 ± 3.8	4.3 ± 6.9	30
Zr-Nb-95	-2.8 ± 3.3	0.2 ± 2.0	1.2 ± 3.0	1.8 ± 2.9	15
Cs-134	-3.3 ± 2.8	-1.2 ± 1.9	-0.6 ± 2.6	2.1 ± 2.4	10
Cs-137	2.1 ± 2.7	-1.4 ± 2.2	-1.1 ± 2.8	-2.5 ± 3.3	10
Ba-La-140	1.2 ± 3.7	-0.1 ± 2.2	-0.1 ± 2.2	-6.5 ± 4.5	15
Other Gammas[a]	-1.8 ± 2.9	1.8 ± 1.9	-0.9 ± 2.4	2.3 ± 3.5	30

Lab Code	ELW-6263	ELW-7072	ELW-8383	ELW-9216	
Date Collected	09-13-06	10-10-06	11-15-06	12-13-06	Req. LLD
Gross beta	2.0 ± 0.4	3.6 ± 0.6	2.5 ± 0.6	3.7 ± 0.8	4.0
I-131	0.12 ± 0.18	-0.16 ± 0.18	0.12 ± 0.19	0.17 ± 0.24	0.5
Be-7	9.6 ± 19.3	25.2 ± 23.0	-3.5 ± 28.7	-2.5 ± 15.3	
Mn-54	0.3 ± 2.4	0.1 ± 2.9	-1.0 ± 3.2	1.0 ± 1.7	10
Fe-59	2.3 ± 5.9	-1.6 ± 6.1	5.5 ± 6.2	3.8 ± 2.8	30
Co-58	1.0 ± 3.0	-0.2 ± 2.9	4.1 ± 2.8	1.5 ± 1.8	10
Co-60	-0.2 ± 3.2	-0.1 ± 2.8	1.1 ± 3.4	-0.9 ± 2.2	10
Zn-65	2.6 ± 5.1	-0.3 ± 6.8	1.1 ± 7.3	3.4 ± 3.9	30
Zr-Nb-95	1.8 ± 2.4	-2.8 ± 2.9	-0.1 ± 3.3	-0.9 ± 2.0	15
Cs-134	-0.1 ± 2.2	-1.2 ± 2.7	0.5 ± 3.0	0.4 ± 1.9	10
Cs-137	-0.9 ± 2.9	2.0 ± 3.1	4.3 ± 3.2	1.3 ± 1.8	10
Ba-La-140	-0.5 ± 3.1	3.5 ± 4.2	-6.4 ± 4.5	-0.6 ± 2.5	15
Other Gammas[a]	-2.5 ± 2.9	-0.2 ± 2.7	-0.5 ± 3.1	-1.9 ± 1.8	30

[a] Ru-103

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-05 (Two Creeks Park)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-220	ELW-691	ELW-1370	ELW-2396	
Date Collected	01-11-06	02-09-06	03-08-06	04-11-06	Req. LLD
Gross beta	2.6 ± 0.6	3.1 ± 0.5	2.3 ± 0.4	3.1 ± 0.6	4.0
I-131	0.00 ± 0.14	0.04 ± 0.16	0.06 ± 0.20	0.06 ± 0.14	0.5
Be-7	2.9 ± 20.7	20.1 ± 23.3	-9.4 ± 16.1	10.2 ± 26.3	
Mn-54	0.9 ± 3.2	0.6 ± 3.1	0.6 ± 1.6	2.7 ± 3.1	10
Fe-59	-0.1 ± 5.3	-2.0 ± 7.4	-0.4 ± 2.8	5.7 ± 6.4	30
Co-58	-0.3 ± 2.8	-1.2 ± 3.0	1.0 ± 1.6	-1.3 ± 2.6	10
Co-60	-0.4 ± 2.9	1.4 ± 3.1	1.1 ± 1.6	1.9 ± 3.3	10
Zn-65	-1.8 ± 6.0	0.3 ± 5.8	-1.6 ± 3.4	0.7 ± 7.1	30
Zr-Nb-95	-2.1 ± 3.0	-7.5 ± 3.5	1.0 ± 1.5	-2.1 ± 3.3	15
Cs-134	-1.4 ± 2.8	-2.4 ± 2.6	-0.4 ± 1.7	-3.0 ± 3.2	10
Cs-137	-2.2 ± 3.1	-0.9 ± 3.3	-0.9 ± 1.9	-2.0 ± 3.4	10
Ba-La-140	3.7 ± 2.9	2.8 ± 4.9	-1.2 ± 1.7	-4.7 ± 3.6	15
Other Gammas[a]	-1.5 ± 2.2	-1.9 ± 3.0	-1.8 ± 1.8	2.1 ± 2.9	30

Lab Code	ELW-3242	ELW-4036	ELW-4825	ELW-5460[b]	
Date Collected	05-10-06	06-16-06	07-14-06	08-10-06	Req. LLD
Gross beta	2.0 ± 0.4	1.9 ± 0.4	2.9 ± 0.7	10.8 ± 1.0	4.0
I-131	-0.04 ± 0.17	-0.10 ± 0.14	-0.16 ± 0.18	-0.11 ± 0.15	0.5
Be-7	-2.8 ± 27.4	-9.7 ± 29.9	6.7 ± 25.9	-0.8 ± 15.4	
Mn-54	1.6 ± 3.0	-3.0 ± 3.5	-0.8 ± 2.8	1.4 ± 1.5	10
Fe-59	-2.5 ± 6.3	-3.9 ± 5.1	-9.1 ± 5.8	-0.6 ± 3.1	30
Co-58	-1.4 ± 3.2	-3.0 ± 3.7	2.7 ± 2.6	-0.1 ± 1.5	10
Co-60	0.9 ± 4.2	-0.1 ± 3.5	3.1 ± 3.5	0.7 ± 1.4	10
Zn-65	0.4 ± 6.8	-7.3 ± 6.5	0.8 ± 7.1	-3.3 ± 3.2	30
Zr-Nb-95	2.4 ± 3.2	0.8 ± 3.3	1.9 ± 2.5	-0.6 ± 1.7	15
Cs-134	3.3 ± 3.2	0.3 ± 3.0	0.3 ± 2.5	0.2 ± 1.4	10
Cs-137	-2.3 ± 3.5	-0.1 ± 2.9	0.6 ± 3.4	0.4 ± 1.6	10
Ba-La-140	2.2 ± 1.8	-0.3 ± 3.2	3.5 ± 3.8	0.3 ± 2.1	15
Other Gammas[a]	0.0 ± 3.5	1.3 ± 2.8	0.9 ± 2.9	-0.2 ± 1.6	30

Lab Code	ELW-6264	ELW-7073	ELW-8384	ELW-9217	
Date Collected	09-13-06	10-10-06	11-15-06	12-13-06	Req. LLD
Gross beta	2.0 ± 0.4	3.4 ± 0.7	2.7 ± 0.6	3.1 ± 0.6	4.0
I-131	0.01 ± 0.13	0.13 ± 0.20	0.08 ± 0.22	-0.47 ± 0.24	0.5
Be-7	3.7 ± 27.7	-1.5 ± 26.8	10.1 ± 25.1	-12.1 ± 21.1	
Mn-54	1.8 ± 3.5	-0.7 ± 2.7	-1.7 ± 2.4	0.1 ± 2.3	10
Fe-59	-0.7 ± 5.3	4.5 ± 4.5	2.3 ± 5.4	-4.5 ± 6.4	30
Co-58	1.6 ± 3.4	1.0 ± 2.9	-0.8 ± 3.0	2.2 ± 2.6	10
Co-60	3.5 ± 2.9	3.1 ± 2.4	2.9 ± 3.4	1.0 ± 3.0	10
Zn-65	-2.9 ± 7.3	-0.6 ± 6.1	-1.2 ± 5.7	1.3 ± 3.5	30
Zr-Nb-95	0.5 ± 3.5	2.1 ± 2.6	1.3 ± 3.0	3.3 ± 2.9	15
Cs-134	0.4 ± 2.9	0.4 ± 2.7	-0.3 ± 2.7	-1.1 ± 2.6	10
Cs-137	3.2 ± 3.4	-1.2 ± 2.9	0.7 ± 1.8	2.4 ± 2.8	10
Ba-La-140	3.0 ± 3.1	4.5 ± 3.5	0.4 ± 3.8	-1.1 ± 2.7	15
Other Gammas[a]	-1.9 ± 3.2	-1.2 ± 2.7	0.0 ± 2.9	-1.0 ± 2.4	30

[a] Ru-103

[b] Gross beta repeated with a result of 8.2±0.7 pCi/L.

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-06 (Coast Guard Station)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-221	ELW-692	ELW-1371	ELW-2397	
Date Collected	01-11-06	02-09-06	03-08-06	04-11-06	Req. LLD
Gross beta	3.1 ± 0.7	1.6 ± 0.4	1.7 ± 0.4	3.7 ± 0.7	4.0
I-131	0.02 ± 0.12	0.06 ± 0.16	-0.02 ± 0.20	0.02 ± 0.14	0.5
Be-7	0.3 ± 19.5	-20.0 ± 25.5	3.3 ± 14.8	-3.7 ± 21.6	
Mn-54	-0.3 ± 2.0	2.5 ± 3.1	-0.4 ± 1.8	0.5 ± 1.9	10
Fe-59	-0.1 ± 4.6	1.3 ± 5.2	2.3 ± 3.1	2.3 ± 4.0	30
Co-58	-0.7 ± 2.3	-2.6 ± 2.7	0.5 ± 1.7	0.2 ± 1.9	10
Co-60	0.8 ± 2.2	-1.1 ± 6.6	0.3 ± 2.1	3.5 ± 2.1	10
Zn-65	-1.6 ± 5.2	1.3 ± 6.7	-0.3 ± 4.2	-9.9 ± 6.0	30
Zr-Nb-95	1.0 ± 2.3	-0.8 ± 3.6	1.6 ± 1.9	0.6 ± 2.3	15
Cs-134	-0.9 ± 2.6	0.6 ± 3.1	-1.3 ± 1.6	-2.4 ± 2.5	10
Cs-137	1.2 ± 2.9	-0.3 ± 3.3	0.4 ± 2.2	-2.0 ± 2.2	10
Ba-La-140	2.5 ± 3.3	-4.8 ± 4.1	-1.2 ± 1.7	-1.5 ± 2.1	15
Other Gammas[a]	-0.8 ± 2.1	-1.2 ± 3.2	-1.7 ± 1.7	1.1 ± 2.3	30

Lab Code	ELW-3243	ELW-4037	ELW-4883	ELW-5461	
Date Collected	05-10-06	06-16-06	07-14-06	08-10-06	Req. LLD
Gross beta	1.6 ± 0.4	1.8 ± 0.4	2.4 ± 0.6	4.6 ± 0.7	4.0
I-131	0.01 ± 0.17	0.01 ± 0.15	0.02 ± 0.27	-0.03 ± 0.13	0.5
Be-7	3.9 ± 27.3	16.2 ± 24.0	5.9 ± 13.9	9.8 ± 16.3	
Mn-54	1.6 ± 2.7	3.2 ± 2.8	1.3 ± 1.3	-1.3 ± 1.7	10
Fe-59	-7.3 ± 5.8	2.4 ± 5.7	3.8 ± 2.6	3.4 ± 3.2	30
Co-58	-1.3 ± 3.0	-0.7 ± 3.4	1.2 ± 1.5	0.2 ± 1.9	10
Co-60	0.2 ± 4.3	-0.6 ± 4.1	-0.2 ± 1.7	1.2 ± 2.5	10
Zn-65	-6.1 ± 6.8	-3.8 ± 5.4	-0.8 ± 3.3	-4.2 ± 4.5	30
Zr-Nb-95	-1.4 ± 2.9	-2.3 ± 3.3	0.6 ± 1.6	-1.9 ± 4.4	15
Cs-134	0.2 ± 2.6	-3.0 ± 3.1	-6.8 ± 2.0	0.1 ± 1.7	10
Cs-137	2.6 ± 3.1	-1.9 ± 2.8	1.1 ± 1.8	1.7 ± 2.0	10
Ba-La-140	2.0 ± 4.2	-4.6 ± 3.4	-3.0 ± 1.8	-0.5 ± 2.0	15
Other Gammas[a]	-1.9 ± 3.2	0.2 ± 3.1	0.4 ± 1.7	1.7 ± 1.9	30

Lab Code	ELW-6265	ELW-7074	ELW-8385	ELW-9218	
Date Collected	09-13-06	10-10-06	11-15-06	12-14-06	Req. LLD
Gross beta	1.7 ± 0.4	3.2 ± 0.7	2.9 ± 0.6	3.5 ± 0.7	4.0
I-131	0.04 ± 0.18	0.04 ± 0.17	-0.13 ± 0.21	0.24 ± 0.33	0.5
Be-7	9.2 ± 26.7	15.5 ± 22.9	-23.2 ± 25.0	-27.0 ± 22.5	
Mn-54	0.4 ± 3.0	-0.2 ± 2.8	0.5 ± 2.9	-1.7 ± 2.3	10
Fe-59	2.1 ± 5.8	2.3 ± 5.1	-3.3 ± 5.8	-2.8 ± 5.8	30
Co-58	-3.4 ± 3.7	2.0 ± 2.9	0.4 ± 3.0	1.8 ± 2.4	10
Co-60	2.2 ± 3.5	1.0 ± 3.3	1.2 ± 4.2	2.1 ± 3.2	10
Zn-65	4.7 ± 5.7	-2.4 ± 6.5	3.7 ± 6.7	-2.2 ± 6.7	30
Zr-Nb-95	-2.0 ± 3.5	0.2 ± 2.8	-2.2 ± 3.4	-1.9 ± 2.9	15
Cs-134	1.4 ± 2.8	-0.6 ± 2.5	-1.3 ± 3.0	-0.6 ± 2.4	10
Cs-137	-1.5 ± 3.0	0.8 ± 3.0	2.7 ± 3.1	2.1 ± 2.8	10
Ba-La-140	-0.7 ± 4.0	-2.8 ± 3.1	3.4 ± 4.6	-4.1 ± 4.2	15
Other Gammas[a]	-0.8 ± 3.3	0.3 ± 2.7	-3.1 ± 2.7	1.1 ± 2.5	30

[a] Ru-103

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-33 (Nature Conservancy)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-222	ELW-693	ELW-1372	ELW-2398	
Date Collected	01-11-06	02-09-06	03-08-06	04-11-06	Req. LLD
Gross beta	5.0 ± 0.8	2.4 ± 0.4	3.9 ± 0.5	2.0 ± 0.6	4.0
I-131	0.11 ± 0.15	-0.22 ± 0.18	0.16 ± 0.17	0.11 ± 0.14	0.5
Be-7	-13.0 ± 24.1	-14.7 ± 25.6	-4.7 ± 21.3	-2.5 ± 17.7	
Mn-54	-0.3 ± 3.0	2.2 ± 3.3	1.2 ± 2.6	-3.4 ± 2.2	10
Fe-59	0.9 ± 5.1	0.6 ± 5.6	0.6 ± 4.7	0.8 ± 3.7	30
Co-58	0.7 ± 3.1	-0.6 ± 2.9	0.5 ± 2.5	-0.9 ± 2.1	10
Co-60	-1.9 ± 2.6	0.6 ± 3.1	1.0 ± 3.0	1.8 ± 2.0	10
Zn-65	-8.4 ± 7.1	-5.1 ± 5.7	1.3 ± 4.6	-2.9 ± 3.9	30
Zr-Nb-95	-0.6 ± 3.4	1.1 ± 2.7	1.0 ± 2.1	-0.5 ± 2.0	15
Cs-134	-2.3 ± 2.8	0.0 ± 3.0	-0.2 ± 1.9	-1.4 ± 1.8	10
Cs-137	0.1 ± 3.0	-2.1 ± 3.1	2.6 ± 2.9	-1.0 ± 2.3	10
Ba-La-140	-1.8 ± 4.0	3.1 ± 3.6	-2.3 ± 3.7	-0.9 ± 2.3	15
Other Gammas[a]	-0.3 ± 2.7	-2.9 ± 3.0	0.2 ± 2.3	-2.4 ± 2.1	30

Lab Code	ELW-3244	ELW-4038	ELW-4884	ELW-5462	
Date Collected	05-10-06	06-16-06	07-14-06	08-10-06	Req. LLD
Gross beta	1.5 ± 0.4	2.1 ± 0.4	5.7 ± 0.8	2.4 ± 0.6	4.0
I-131	0.09 ± 0.19	-0.02 ± 0.15	-0.03 ± 0.27	0.06 ± 0.14	0.5
Be-7	9.0 ± 26.0	8.6 ± 28.3	5.3 ± 12.6	0.8 ± 17.8	
Mn-54	-1.1 ± 3.5	2.6 ± 3.0	0.6 ± 1.5	0.8 ± 1.9	10
Fe-59	-3.5 ± 6.4	-2.6 ± 6.8	-0.1 ± 2.7	-2.4 ± 3.5	30
Co-58	0.3 ± 2.7	2.2 ± 3.2	0.4 ± 1.1	-1.5 ± 2.2	10
Co-60	1.9 ± 3.4	3.5 ± 3.8	0.7 ± 1.6	-0.3 ± 1.9	10
Zn-65	-7.0 ± 7.0	0.7 ± 7.6	-1.4 ± 3.2	-0.8 ± 3.9	30
Zr-Nb-95	-1.0 ± 3.4	0.4 ± 2.5	-1.5 ± 1.5	-0.7 ± 2.2	15
Cs-134	-0.3 ± 3.0	1.7 ± 2.9	0.2 ± 1.5	-0.9 ± 2.5	10
Cs-137	-1.2 ± 2.9	0.9 ± 3.2	-0.5 ± 1.6	1.7 ± 2.4	10
Ba-La-140	-1.0 ± 3.8	-0.1 ± 4.2	1.7 ± 1.9	0.8 ± 2.1	15
Other Gammas[a]	-1.5 ± 3.1	0.4 ± 3.6	0.8 ± 1.5	0.4 ± 2.0	30

Lab Code	ELW-6266,7	ELW-7075	ELW-8386	ELW-9219	
Date Collected	09-13-06	10-10-06	11-15-06	12-14-06	Req. LLD
Gross beta	3.0 ± 0.3	4.1 ± 0.7	2.9 ± 0.6	2.6 ± 0.6	4.0
I-131	0.01 ± 0.19	0.06 ± 0.16	0.14 ± 0.18	0.07 ± 0.23	0.5
Be-7	-13.2 ± 11.4	6.0 ± 23.7	12.9 ± 23.5	7.9 ± 20.7	
Mn-54	-0.5 ± 1.6	0.4 ± 2.7	-0.7 ± 3.1	-0.8 ± 2.8	10
Fe-59	1.0 ± 2.7	-1.0 ± 4.2	-1.4 ± 5.9	1.4 ± 3.4	30
Co-58	-0.5 ± 1.7	3.6 ± 2.6	2.1 ± 2.7	0.4 ± 1.7	10
Co-60	-0.1 ± 3.3	0.2 ± 2.3	-0.6 ± 2.6	0.7 ± 3.2	10
Zn-65	1.5 ± 3.2	-6.2 ± 5.5	-5.8 ± 5.7	0.7 ± 4.7	30
Zr-Nb-95	-1.5 ± 1.7	1.2 ± 2.8	2.9 ± 2.9	0.9 ± 2.3	15
Cs-134	-1.4 ± 2.3	-2.3 ± 2.8	0.2 ± 2.4	0.3 ± 2.5	10
Cs-137	-0.5 ± 1.5	-0.5 ± 3.1	1.4 ± 2.1	0.6 ± 2.6	10
Ba-La-140	-0.3 ± 1.7	-5.6 ± 3.4	-2.6 ± 2.8	-4.8 ± 3.9	15
Other Gammas[a]	0.7 ± 2.8	2.7 ± 2.9	0.6 ± 2.3	-1.6 ± 2.7	30

[a] Ru-103

POINT BEACH

Lake water, analyses for tritium, strontium-89 and strontium-90.
Collection: Quarterly composites of weekly grab samples
Units: pCi/L

Location	E-01 (Meteorological Tower)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-1446[a]	ELW-4174	ELW-7629	ELW-9500
H-3	221 ± 96	140 ± 75	124 ± 99	43 ± 82
Sr-89	-0.10 ± 0.54	0.25 ± 0.64	0.61 ± 0.85	-0.43 ± 0.64
Sr-90	0.26 ± 0.31	0.21 ± 0.26	0.06 ± 0.26	0.34 ± 0.25

Location	E-05 (Two Creeks Park)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-1447[b]	ELW-4175,6[c]	ELW-7630	ELW-9501
H-3	218 ± 96	482 ± 90	1017 ± 127 *	83 ± 84
Sr-89	-0.45 ± 0.49	-0.21 ± 0.58	0.55 ± 1.03	0.22 ± 0.72
Sr-90	0.50 ± 0.27	0.28 ± 0.26	0.37 ± 0.28	0.32 ± 0.24

Location	E-06 (Coast Guard Station)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-1448,9	ELW-4177	ELW-7631	ELW-9502
H-3	49 ± 89	149 ± 76	284 ± 105	3 ± 80
Sr-89	0.33 ± 0.51	0.38 ± 0.72	0.18 ± 1.07	0.26 ± 0.67
Sr-90	0.16 ± 0.28	0.18 ± 0.32	0.19 ± 0.29	0.13 ± 0.23

Location	E-33 (Nature Conservancy)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-1450	ELW-4178[d]	ELW-7632	ELW-9503
H-3	34 ± 89	382 ± 86	191 ± 102	71 ± 83
Sr-89	0.20 ± 0.57	-0.20 ± 0.77	0.28 ± 1.02	-0.14 ± 0.71
Sr-90	0.30 ± 0.30	0.42 ± 0.33	0.26 ± 0.29	0.23 ± 0.26

[a] Repeat result = 287±99 pCi/L.
[b] Repeat result = 285±99 pCi/L.
[c] Duplicate result = 398±87 pCi/L.
[d] Repeat result = 423±91 pCi/L.

* The 3 monthly samples comprising this quarterly composite were analyzed individually (results on attached next page). These results indicate that the PBNP sample was taken shortly after a Kewaunee discharge in September. W/O this sample the average is 99.5 ± 41.7

Note: pages 23 and 24 are intentionally left out.

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
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Mr. Donald Schuelke
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-739
DATE: 11-06-06
SAMPLES RECEIVED: ----------

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in three monthly lake water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-05	07-14-06	ELW-4825	70 ± 85	<134
E-05	08-10-06	ELW-5460	129 ± 87	<135
E-05	09-13-06	ELW-6264	3,096 ± 169	-

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

POINT BEACH NUCLEAR PLANT

Fish, analyses for gross beta and gamma emitting isotopes.
Location: E-13
Collection: 3x / year Units: pCi/g wet

	Sample Description and Concentration				Required LLD
Collection Date	03-10-06	03-10-06	03-10-06	03-10-06	
Lab Code	EF-1354	EF-1355	EF-1356	EF-1357,8	
Type	Brown Trout	Brown Trout	Chinook Salmon	Catfish	
Ratio (wet/dry wt.)	3.29	5.06	3.67	3.45	
Gross Beta	3.83 ± 0.07	3.95 ± 0.10	4.71 ± 0.13	3.74 ± 0.05	0.5
K-40	2.82 ± 0.24	3.15 ± 0.39	3.43 ± 0.43	2.39 ± 0.27	
Mn-54	0.003 ± 0.005	0.005 ± 0.009	-0.002 ± 0.011	0.005 ± 0.007	0.13
Fe-59	-0.017 ± 0.011	-0.011 ± 0.017	-0.010 ± 0.020	0.004 ± 0.013	0.26
Co-58	0.001 ± 0.005	-0.011 ± 0.010	0.007 ± 0.009	-0.002 ± 0.006	0.13
Co-60	0.005 ± 0.006	0.006 ± 0.010	-0.002 ± 0.012	0.008 ± 0.008	0.13
Zn-65	0.004 ± 0.011	-0.002 ± 0.021	-0.016 ± 0.024	-0.002 ± 0.019	0.26
Cs-134	0.001 ± 0.006	0.000 ± 0.007	0.001 ± 0.009	0.006 ± 0.009	0.13
Cs-137	0.032 ± 0.014	0.055 ± 0.019	0.041 ± 0.018	0.049 ± 0.025	0.15
Other Gammas[a]	0.018 ± 0.004	0.007 ± 0.009	0.003 ± 0.009	0.003 ± 0.006	0.5
Collection Date	08-10-06	08-10-06	08-10-06	12-14-06	
Lab Code	EF-5409	EF-5410	EF-5411	EF-8959	
Type	White Sucker	White Sucker	King Salmon	Lake Trout	
Ratio (wet/dry wt.)	4.62	7.37	4.91	2.80	
Gross Beta	4.28 ± 0.11	3.05 ± 0.07	5.68 ± 0.11	2.86 ± 0.10	0.5
K-40	2.91 ± 0.55	1.58 ± 0.48	4.41 ± 0.74	2.67 ± 0.35	
Mn-54	-0.008 ± 0.015	0.003 ± 0.013	0.008 ± 0.017	0.002 ± 0.008	0.13
Fe-59	-0.022 ± 0.028	-0.013 ± 0.021	-0.032 ± 0.034	0.006 ± 0.017	0.26
Co-58	-0.010 ± 0.017	0.002 ± 0.013	0.006 ± 0.015	0.008 ± 0.008	0.13
Co-60	-0.013 ± 0.014	-0.006 ± 0.014	-0.008 ± 0.019	0.001 ± 0.009	0.13
Zn-65	-0.010 ± 0.038	0.003 ± 0.025	0.028 ± 0.036	-0.002 ± 0.020	0.26
Cs-134	-0.010 ± 0.012	-0.003 ± 0.012	-0.005 ± 0.012	-0.002 ± 0.009	0.13
Cs-137	0.008 ± 0.016	0.005 ± 0.015	0.030 ± 0.019	0.038 ± 0.022	0.15
Other Gammas[a]	-0.009 ± 0.012	0.002 ± 0.012	0.001 ± 0.013	-0.005 ± 0.008	0.5

[a] Ru-103

POINT BEACH NUCLEAR PLANT

Fish, analyses for gross beta and gamma emitting isotopes.
Location: E-13
Collection: 3x / year Units: pCi/g wet

	Sample Description and Concentration (pCi/g wet)		Required LLD
Collection Date	12-14-06	12-14-06	
Lab Code	EF-8960	EF-8961	
Type	Lake Trout	Lake Trout	
Ratio (wet/dry wt.)	2.43	2.51	
Gross Beta	4.12 ± 0.12	2.68 ± 0.05	0.5
K-40	2.70 ± 0.37	3.08 ± 0.50	
Mn-54	-0.010 ± 0.008	0.010 ± 0.010	0.13
Fe-59	0.015 ± 0.015	-0.014 ± 0.024	0.26
Co-58	-0.002 ± 0.006	0.007 ± 0.010	0.13
Co-60	-0.002 ± 0.009	0.006 ± 0.013	0.13
Zn-65	-0.012 ± 0.016	-0.020 ± 0.028	0.26
Cs-134	-0.001 ± 0.006	-0.009 ± 0.010	0.13
Cs-137	0.042 ± 0.020	0.020 ± 0.015	0.15
Other Gammas[a]	0.004 ± 0.007	-0.002 ± 0.010	0.5

[a] Ru-103

NOTE: Page 27 is intentionally left out.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date	4/11/2006	4/11/2006	4/11/2006	Required
Lab Code	ESS-2389,90	ESS-2391	ESS-2392	LLD
Location	E-01	E-05	E-06	
Gross Beta	9.96 ± 0.64	14.11 ± 0.98	12.35 ± 1.18	2.0
Be-7	-0.041 ± 0.056	-0.027 ± 0.073	0.056 ± 0.068	
K-40	5.65 ± 0.29	9.87 ± 0.73	6.63 ± 0.41	-
Cs-137	0.011 ± 0.009	-0.001 ± 0.013	0.014 ± 0.012	0.15
Tl-208	0.048 ± 0.014	0.001 ± 0.015	0.039 ± 0.014	-
Pb-212	0.13 ± 0.016	-0.01 ± 0.014	0.15 ± 0.024	-
Bi-214	0.10 ± 0.039	0.02 ± 0.034	0.10 ± 0.044	-
Ra-226	0.35 ± 0.16	0.07 ± 0.15	0.23 ± 0.20	-
Ac-228	0.13 ± 0.043	0.18 ± 0.106	0.17 ± 0.067	-

Collection Date	4/11/2006	4/11/2006	
Lab Code	ESS-2393	ESS-2394	
Location	E-12	E-33	
Gross Beta	15.74 ± 1.11	16.46 ± 1.11	2.0
Be-7	-0.129 ± 0.076	0.017 ± 0.074	
K-40	9.48 ± 0.70	9.67 ± 0.77	-
Cs-137	0.032 ± 0.017	0.009 ± 0.013	0.15
Tl-208	-0.026 ± 0.014	0.040 ± 0.013	-
Pb-212	-0.03 ± 0.014	0.10 ± 0.027	-
Bi-214	0.01 ± 0.033	0.06 ± 0.034	-
Ra-226	0.05 ± 0.15	0.12 ± 0.19	-
Ac-228	0.12 ± 0.057	0.20 ± 0.107	-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date	10/10/2006	10/10/2006	10/10/2006	Required
Lab Code	ESS-7077	ESS-7078	ESS-7079,80	LLD
Location	E-01	E-05	E-06	
Gross Beta	14.20 ± 2.42	12.64 ± 2.26	11.99 ± 1.66	2.0
Be-7	0.107 ± 0.043	0.032 ± 0.044	0.070 ± 0.052	
K-40	8.10 ± 0.38	7.51 ± 0.37	7.30 ± 0.27	-
Cs-137	0.027 ± 0.010	0.009 ± 0.006	0.038 ± 0.012	0.15
Tl-208	0.048 ± 0.015	0.046 ± 0.015	0.076 ± 0.011	-
Pb-212	0.17 ± 0.047	0.22 ± 0.048	0.32 ± 0.047	-
Bi-214	0.10 ± 0.020	0.13 ± 0.022	0.20 ± 0.022	-
Ra-226	0.42 ± 0.13	0.31 ± 0.14	0.57 ± 0.12	-
Ac-228	0.13 ± 0.036	0.17 ± 0.048	0.26 ± 0.040	-

Collection Date	10/10/2006	10/10/2006	
Lab Code	ESS-7081	ESS-7082	
Location	E-12	E-33	
Gross Beta	11.21 ± 2.18	5.55 ± 1.29	2.0
Be-7	0.098 ± 0.042	0.047 ± 0.040	
K-40	6.32 ± 0.34	4.88 ± 0.30	-
Cs-137	0.023 ± 0.009	0.017 ± 0.007	0.15
Tl-208	0.049 ± 0.016	0.046 ± 0.015	-
Pb-212	0.25 ± 0.050	0.22 ± 0.045	-
Bi-214	0.12 ± 0.021	0.12 ± 0.021	-
Ra-226	0.37 ± 0.13	0.43 ± 0.13	-
Ac-228	0.19 ± 0.046	0.13 ± 0.035	-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SOIL SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date	5/24/2006	5/24/2006	5/24/2006	Required
Lab Code	ESO-3534	ESO-3535	ESO-3536	LLD
Location	E-01	E-02	E-03	
Gross Beta	39.01 ± 3.10	38.99 ± 2.85	34.08 ± 2.75	2.0
Be-7	0.07 ± 0.01	-0.09 ± 0.14	0.05 ± 0.15	
K-40	20.34 ± 0.89	21.36 ± 1.19	17.49 ± 1.26	-
Cs-137	0.07 ± 0.026	-0.01 ± 0.019	0.33 ± 0.051	0.15
Tl-208	0.23 ± 0.035	0.24 ± 0.052	0.18 ± 0.051	-
Pb-212	0.70 ± 0.043	0.66 ± 0.057	0.45 ± 0.058	-
Bi-214	0.59 ± 0.069	0.21 ± 0.079	0.28 ± 0.072	-
Ra-226	1.33 ± 0.33	1.40 ± 0.42	1.30 ± 0.48	-
Ac-228	0.74 ± 0.09	0.72 ± 0.15	0.51 ± 0.17	-
Collection Date	5/24/2006	5/24/2006	5/24/2006	
Lab Code	ESO-3537	ESO-3538	ESO-3539,40	
Location	E-04	E-06	E-08	
Gross Beta	35.61 ± 2.48	22.08 ± 2.00	19.28 ± 1.38	2.0
Be-7	0.25 ± 0.12	-0.02 ± 0.15	-0.01 ± 0.05	
K-40	22.51 ± 0.91	13.59 ± 1.12	12.02 ± 0.53	-
Cs-137	0.16 ± 0.050	0.67 ± 0.073	0.02 ± 0.010	0.15
Tl-208	0.22 ± 0.033	0.10 ± 0.040	0.09 ± 0.019	-
Pb-212	0.66 ± 0.052	0.22 ± 0.047	0.26 ± 0.030	-
Bi-214	0.46 ± 0.054	0.18 ± 0.059	0.17 ± 0.038	-
Ra-226	1.38 ± 0.44	0.38 ± 0.32	0.52 ± 0.19	-
Ac-228	0.70 ± 0.14	0.28 ± 0.15	0.27 ± 0.07	-
Collection Date	5/24/2006	5/25/2006		
Lab Code	ESO-3541	ESO-3542		
Location	E-09	E-20		
Gross Beta	28.97 ± 2.30	33.88 ± 2.96		2.0
Be-7	0.07 ± 0.10	0.08 ± 0.10		
K-40	21.86 ± 0.95	17.10 ± 0.82		-
Cs-137	0.03 ± 0.018	0.12 ± 0.033		0.15
Tl-208	0.25 ± 0.038	0.18 ± 0.038		-
Pb-212	0.75 ± 0.046	0.67 ± 0.118		-
Bi-214	0.63 ± 0.075	0.38 ± 0.047		-
Ra-226	1.43 ± 0.35	0.96 ± 0.31		-
Ac-228	0.80 ± 0.10	0.61 ± 0.11		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SOIL SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)				
Collection Date	10/25/2006	10/25/2006	10/25/2006	Required
Lab Code	ESO-7963	ESO-7964	ESO-7965	LLD
Location	E-01	E-02	E-03	
Gross Beta	20.01 ± 0.83	19.41 ± 0.82	29.74 ± 0.98	2.0
Be-7	-0.01 ± 0.14	-0.10 ± 0.15	-0.03 ± 0.10	
K-40	14.61 ± 1.12	15.23 ± 1.10	21.22 ± 0.96	-
Cs-137	0.06 ± 0.036	0.09 ± 0.045	0.27 ± 0.036	0.15
Tl-208	0.15 ± 0.040	0.15 ± 0.038	0.31 ± 0.040	-
Pb-212	0.42 ± 0.051	0.42 ± 0.050	0.95 ± 0.134	-
Bi-214	0.37 ± 0.066	0.39 ± 0.083	0.52 ± 0.063	-
Ra-226	0.73 ± 0.41	0.99 ± 0.42	1.34 ± 0.36	-
Ac-228	0.58 ± 0.16	0.52 ± 0.15	0.92 ± 0.12	-
Collection Date	10/25/2006	10/25/2006	10/25/2006	
Lab Code	ESO-7966	ESO-7967	ESO-7968	
Location	E-04	E-06	E-08	
Gross Beta	26.50 ± 0.94	15.60 ± 0.77	18.43 ± 0.81	2.0
Be-7	-0.15 ± 0.10	0.03 ± 0.10	0.13 ± 0.13	
K-40	19.22 ± 0.90	11.64 ± 0.91	15.56 ± 1.11	-
Cs-137	0.16 ± 0.041	0.29 ± 0.046	0.33 ± 0.054	0.15
Tl-208	0.19 ± 0.034	0.08 ± 0.031	0.14 ± 0.038	-
Pb-212	0.82 ± 0.123	0.20 ± 0.037	0.32 ± 0.043	-
Bi-214	0.37 ± 0.053	0.22 ± 0.054	0.22 ± 0.059	-
Ra-226	1.11 ± 0.33	0.41 ± 0.24	0.67 ± 0.27	-
Ac-228	0.48 ± 0.09	0.19 ± 0.08	0.31 ± 0.13	-
Collection Date	10/25/2006	10/25/2006		
Lab Code	ESO-7969	ESO-7970		
Location	E-09	E-20		
Gross Beta	26.20 ± 0.95	30.72 ± 2.69		2.0
Be-7	-0.01 ± 0.16	-0.03 ± 0.15		
K-40	19.26 ± 1.35	20.14 ± 1.36		-
Cs-137	0.26 ± 0.067	0.20 ± 0.036		0.15
Tl-208	0.20 ± 0.051	0.22 ± 0.057		-
Pb-212	0.55 ± 0.060	0.58 ± 0.062		-
Bi-214	0.43 ± 0.075	0.40 ± 0.086		-
Ra-226	0.96 ± 0.47	0.85 ± 0.45		-
Ac-228	0.61 ± 0.17	0.64 ± 0.16		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES

(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)

Location	E-01	E-02	E-03	
Collection Date	5/24/2006	5/24/2006	5/24/2006	
Lab Code	EG-3489	EG-3490	EG-3491,2	Req. LLD
Ratio (wet/dry)	3.99	4.08	4.21	-
Gross Beta	7.99 ± 0.44	8.12 ± 0.18	8.96 ± 0.13	0.25
Be-7	0.77 ± 0.20	0.90 ± 0.17	0.41 ± 0.16	-
K-40	6.04 ± 0.51	6.19 ± 0.52	5.95 ± 0.53	-
I-131	-0.004 ± 0.010	-0.005 ± 0.008	-0.017 ± 0.012	0.060
Cs-134	0.000 ± 0.008	-0.003 ± 0.009	0.005 ± 0.015	0.060
Cs-137	-0.004 ± 0.009	0.001 ± 0.009	-0.017 ± 0.012	0.080
Other Gammas[a]	-0.004 ± 0.009	0.004 ± 0.010	-0.004 ± 0.021	0.060

Location	E-04	E-06	E-08	
Collection Date	5/24/2006	5/24/2006	5/24/2006	
Lab Code	EG-3493	EG-3494	EG-3595	Req. LLD
Ratio (wet/dry)	4.41	3.73	3.29	-
Gross Beta	8.42 ± 0.18	5.75 ± 0.12	9.76 ± 0.21	0.25
Be-7	1.08 ± 0.34	0.72 ± 0.32	1.11 ± 0.18	-
K-40	6.81 ± 0.82	4.19 ± 0.72	5.74 ± 0.39	-
I-131	0.015 ± 0.015	-0.017 ± 0.018	0.005 ± 0.007	0.060
Cs-134	0.007 ± 0.015	-0.004 ± 0.022	0.001 ± 0.006	0.060
Cs-137	-0.003 ± 0.016	0.023 ± 0.025	0.005 ± 0.007	0.080
Other Gammas[a]	-0.006 ± 0.021	0.002 ± 0.022	-0.003 ± 0.008	0.060

Location	E-09	E-20	
Collection Date	5/24/2006	5/24/2006	
Lab Code	EG-3496	EG-3497	Req. LLD
Ratio (wet/dry)	4.79	4.03	-
Gross Beta	6.33 ± 0.14	8.15 ± 0.17	0.25
Be-7	1.32 ± 0.27	1.98 ± 0.47	-
K-40	6.30 ± 0.51	6.05 ± 0.86	-
I-131	-0.002 ± 0.011	-0.016 ± 0.018	0.060
Cs-134	-0.022 ± 0.011	0.006 ± 0.017	0.060
Cs-137	-0.005 ± 0.011	-0.007 ± 0.022	0.080
Other Gammas[a]	0.012 ± 0.009	-0.008 ± 0.022	0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES
(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)				
Location	E-01	E-02	E-03	
Collection Date	7/26/2006	7/26/2006	7/26/2006	
Lab Code	EG-5173	EG-5174	EG-5175	Req. LLD
Ratio (wet/dry)	2.88	3.42	3.53	-
Gross Beta	6.09 ± 0.29	7.31 ± 0.25	8.84 ± 0.27	0.25
Be-7	2.58 ± 0.30	2.00 ± 0.37	-2.38 ± 0.20	-
K-40	6.61 ± 0.60	5.85 ± 0.61	6.11 ± 0.57	-
I-131	0.001 ± 0.009	-0.024 ± 0.013	0.017 ± 0.008	0.060
Cs-134	0.002 ± 0.008	0.002 ± 0.011	-0.050 ± 0.014	0.060
Cs-137	-0.002 ± 0.008	0.013 ± 0.014	0.002 ± 0.009	0.080
Other Gammas[a]	0.004 ± 0.008	-0.007 ± 0.016	-0.003 ± 0.013	0.060
Location	E-04	E-06	E-08	
Collection Date	7/26/2006	7/26/2006	7/26/2006	
Lab Code	EG-5176	EG-5177	EG-5178	Req. LLD
Ratio (wet/dry)	3.90	2.91	2.91	-
Gross Beta	4.76 ± 0.17	5.80 ± 0.18	9.67 ± 0.23	0.25
Be-7	2.52 ± 0.28	1.83 ± 0.32	-2.03 ± 0.19	-
K-40	4.89 ± 0.46	4.51 ± 0.52	7.99 ± 0.73	-
I-131	0.014 ± 0.008	0.017 ± 0.012	0.021 ± 0.009	0.060
Cs-134	0.000 ± 0.007	-0.004 ± 0.012	-0.116 ± 0.025	0.060
Cs-137	-0.001 ± 0.008	0.022 ± 0.016	-0.004 ± 0.015	0.080
Other Gammas[a]	-0.004 ± 0.009	-0.001 ± 0.017	-0.027 ± 0.020	0.060
Location	E-09	E-20		
Collection Date	7/26/2006	7/26/2006		
Lab Code	EG-5179	EG-5180		Req. LLD
Ratio (wet/dry)	2.84	4.52		-
Gross Beta	8.77 ± 0.26	10.16 ± 0.23		0.25
Be-7	2.99 ± 0.41	-0.85 ± 0.07		-
K-40	6.44 ± 0.71	6.52 ± 0.31		-
I-131	-0.073 ± 0.014	-0.011 ± 0.005		0.060
Cs-134	-0.015 ± 0.014	-0.006 ± 0.006		0.060
Cs-137	-0.006 ± 0.015	0.002 ± 0.006		0.080
Other Gammas[a]	0.016 ± 0.018	-0.001 ± 0.007		0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES
(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)				
Location	E-01	E-02	E-03	
Collection Date	10/25/2006	10/25/2006	10/25/2006	
Lab Code	EG-7883	EG-7884	EG-7885	Req. LLD
Ratio (wet/dry)	3.16	3.58	5.21	-
Gross Beta	5.86 ± 0.21	10.26 ± 0.21	9.43 ± 0.18	0.25
Be-7	6.08 ± 0.39	3.18 ± 0.24	3.80 ± 0.29	-
K-40	6.65 ± 0.53	4.70 ± 0.37	6.03 ± 0.44	-
I-131	0.004 ± 0.010	0.000 ± 0.006	-0.001 ± 0.010	0.060
Cs-134	-0.005 ± 0.009	-0.001 ± 0.006	-0.006 ± 0.009	0.060
Cs-137	0.000 ± 0.011	0.005 ± 0.006	-0.001 ± 0.010	0.080
Other Gammas[a]	-0.001 ± 0.010	-0.001 ± 0.007	-0.002 ± 0.010	0.060
Location	E-04	E-06	E-08	
Collection Date	10/25/2006	10/25/2006	10/25/2006	
Lab Code	EG-7886	EG-7887	EG-7888	Req. LLD
Ratio (wet/dry)	2.95	2.35	4.12	-
Gross Beta	8.90 ± 0.25	11.56 ± 0.36	10.46 ± 0.35	0.25
Be-7	4.08 ± 0.39	2.77 ± 0.35	4.71 ± 0.40	-
K-40	4.37 ± 0.42	4.81 ± 0.47	8.81 ± 0.75	-
I-131	-0.022 ± 0.010	0.004 ± 0.013	-0.001 ± 0.014	0.060
Cs-134	-0.002 ± 0.010	-0.002 ± 0.012	0.001 ± 0.012	0.060
Cs-137	-0.002 ± 0.012	0.064 ± 0.031	0.008 ± 0.014	0.080
Other Gammas[a]	-0.006 ± 0.011	0.001 ± 0.011	0.003 ± 0.015	0.060
Location	E-09	E-20		
Collection Date	10/25/2006	10/25/2006		
Lab Code	EG-7889	EG-7890		Req. LLD
Ratio (wet/dry)	2.78	2.88		-
Gross Beta	7.64 ± 0.13	8.72 ± 0.30		0.25
Be-7	5.11 ± 0.38	4.37 ± 0.36		-
K-40	4.07 ± 0.48	6.98 ± 0.53		-
I-131	-0.002 ± 0.010	-0.002 ± 0.012		0.060
Cs-134	0.000 ± 0.008	-0.003 ± 0.011		0.060
Cs-137	0.010 ± 0.010	-0.009 ± 0.013		0.080
Other Gammas[a]	-0.010 ± 0.011	-0.003 ± 0.010		0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

Aquatic Vegetation, analyses for gross beta and gamma emitting isotopes.

Collection: Semiannual Units: pCi/g wet

Sample Description and Concentration			
Collection Date	06-07-06	06-07-06	Required
Lab Code	ESL-3844	ESL-3845	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	7.99	3.13	
Gross Beta	5.05 ± 0.38	2.63 ± 0.25	0.25
Be-7	1.53 ± 0.26	3.18 ± 1.06	-
K-40	2.55 ± 0.37	1.47 ± 0.74	-
Co-58	-0.003 ± 0.010	0.001 ± 0.029	0.25
Co-60	0.002 ± 0.010	0.017 ± 0.032	0.25
Cs-134	-0.008 ± 0.009	-0.146 ± 0.039	0.25
Cs-137	0.006 ± 0.012	-0.023 ± 0.039	0.25
Collection Date	08-10-06	08-10-06	Required
Lab Code	ESL-5438	ESL-5439	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	7.09	2.58	
Gross Beta	2.37 ± 0.18	6.63 ± 0.78	0.25
Be-7	0.87 ± 0.27	0.13 ± 0.12	-
K-40	1.26 ± 0.37	0.92 ± 0.37	-
Co-58	-0.003 ± 0.011	-0.010 ± 0.013	0.25
Co-60	0.006 ± 0.015	-0.007 ± 0.014	0.25
Cs-134	0.002 ± 0.013	0.001 ± 0.014	0.25
Cs-137	0.002 ± 0.014	0.015 ± 0.015	0.25
Collection Date	10-06-06	10-06-06	Required
Lab Code	ESL-6922	ESL-6923	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	7.87	5.79	
Gross Beta	4.17 ± 0.33	5.16 ± 0.45	0.25
Be-7	0.42 ± 0.16	-0.53 ± 0.23	-
K-40	2.69 ± 0.54	3.51 ± 0.84	-
Co-58	0.017 ± 0.014	0.006 ± 0.026	0.25
Co-60	0.015 ± 0.019	-0.002 ± 0.038	0.25
Cs-134	0.004 ± 0.015	-0.071 ± 0.028	0.25
Cs-137	0.013 ± 0.019	0.000 ± 0.028	0.25

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
1st. Quarter, 2006

	Date Annealed:	12-15-05	Days in the field	90
	Date Placed:	01-05-06	Days from Annealing	
	Date Removed:	04-05-06	to Readout:	118
	Date Read:	04-12-06		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	90	14.4 ± 1.2	10.6 ± 1.4	0.82 ± 0.11
E-2	90	17.9 ± 0.4	14.1 ± 0.8	1.09 ± 0.06
E-3	90	20.5 ± 1.4	16.7 ± 1.6	1.30 ± 0.12
E-4	90	16.8 ± 1.4	13.0 ± 1.6	1.01 ± 0.12
E-5	90	ND[a]		
E-6	90	16.5 ± 0.9	12.7 ± 1.1	0.99 ± 0.09
E-7	90	16.7 ± 1.0	12.9 ± 1.2	1.00 ± 0.10
E-8	90	16.2 ± 0.6	12.4 ± 0.9	0.96 ± 0.07
E-9	90	18.6 ± 0.5	14.8 ± 0.9	1.15 ± 0.07
E-12	90	14.2 ± 0.2	10.4 ± 0.7	0.81 ± 0.06
E-14	90	17.6 ± 0.4	13.8 ± 0.8	1.07 ± 0.06
E-15	90	18.9 ± 0.6	15.1 ± 0.9	1.17 ± 0.07
E-16	90	16.8 ± 0.5	13.0 ± 0.9	1.01 ± 0.07
E-17	90	18.4 ± 0.6	14.6 ± 0.9	1.13 ± 0.07
E-18	90	18.5 ± 0.7	14.7 ± 1.0	1.14 ± 0.08
E-22	90	18.2 ± 1.1	14.4 ± 1.3	1.12 ± 0.10
E-23	90	18.0 ± 0.4	14.2 ± 0.8	1.10 ± 0.06
E-24	90	18.3 ± 1.0	14.5 ± 1.2	1.13 ± 0.10
E-25	90	16.9 ± 0.2	13.1 ± 0.7	1.02 ± 0.06
E-26	90	15.4 ± 0.4	11.6 ± 0.8	0.90 ± 0.06
E-27	90	16.9 ± 0.5	13.1 ± 0.9	1.02 ± 0.07
E-28	90	13.3 ± 0.4	9.5 ± 0.8	0.74 ± 0.06
E-29	90	17.5 ± 1.0	13.7 ± 1.2	1.06 ± 0.10
E-30	90	16.0 ± 0.7	12.2 ± 1.0	0.95 ± 0.08
E-31	90	17.5 ± 0.8	13.7 ± 1.1	1.06 ± 0.08
E-32	90	16.5 ± 0.7	12.7 ± 1.0	0.99 ± 0.08
E-38	90	18.4 ± 0.9	14.6 ± 1.1	1.13 ± 0.09
E-39	90	15.6 ± 0.6	11.8 ± 0.9	0.92 ± 0.07
Control				
E-20	90	16.1 ± 0.8	12.3 ± 1.1	0.95 ± 0.08
Mean±s.d.		17.0 ± 1.6	13.2 ± 1.6	1.03 ± 0.12

In-Transit Exposure

Date Annealed	12-14-05	03-14-06
Date Read	01-10-06	04-12-06
	Total mR	
ITC-1	3.8 ± 0.4	4.0 ± 0.4
ITC-2	3.3 ± 0.3	4.2 ± 0.3

[a] "ND" = No data; TLD missing in field.

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
2nd Quarter, 2006

	Date Annealed:	03-14-06	Days in the field	91
	Date Placed:	04-05-06	Days from Annealing	
	Date Removed:	07-05-06	to Readout:	120
	Date Read:	07-12-06		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	91	15.4 ± 1.2	10.9 ± 1.4	0.84 ± 0.10
E-2	91	20.4 ± 1.3	15.9 ± 1.5	1.22 ± 0.11
E-3	91	21.0 ± 1.9	16.5 ± 2.0	1.27 ± 0.15
E-4	91	17.2 ± 0.3	12.7 ± 0.7	0.98 ± 0.05
E-5	91	19.4 ± 0.7	14.9 ± 1.0	1.15 ± 0.07
E-6	91	16.4 ± 0.5	11.9 ± 0.8	0.92 ± 0.06
E-7	91	15.6 ± 0.4	11.1 ± 0.8	0.85 ± 0.06
E-8	91	16.9 ± 0.9	12.4 ± 1.1	0.95 ± 0.09
E-9	91	19.0 ± 1.3	14.5 ± 1.5	1.12 ± 0.11
E-12	91	13.6 ± 0.9	9.1 ± 1.1	0.70 ± 0.09
E-14	91	17.7 ± 1.1	13.2 ± 1.3	1.02 ± 0.10
E-15	91	22.2 ± 1.3	17.7 ± 1.5	1.36 ± 0.11
E-16	91	16.9 ± 0.5	12.4 ± 0.8	0.95 ± 0.06
E-17	91	17.7 ± 1.0	13.2 ± 1.2	1.02 ± 0.09
E-18	91	18.6 ± 0.2	14.1 ± 0.7	1.08 ± 0.05
E-22	91	18.7 ± 0.5	14.2 ± 0.8	1.09 ± 0.06
E-23	91	19.5 ± 0.6	15.0 ± 0.9	1.15 ± 0.07
E-24	91	17.9 ± 0.3	13.4 ± 0.7	1.03 ± 0.05
E-25	91	19.0 ± 0.3	14.5 ± 0.7	1.12 ± 0.05
E-26	91	15.4 ± 0.2	10.9 ± 0.7	0.84 ± 0.05
E-27	91	17.7 ± 0.5	13.2 ± 0.8	1.02 ± 0.06
E-28	91	13.2 ± 0.3	8.7 ± 0.7	0.67 ± 0.05
E-29	91	18.2 ± 0.6	13.7 ± 0.9	1.05 ± 0.07
E-30	91	17.2 ± 0.4	12.7 ± 0.8	0.98 ± 0.06
E-31	91	19.3 ± 1.4	14.8 ± 1.5	1.14 ± 0.12
E-32	91	16.7 ± 0.5	12.2 ± 0.8	0.94 ± 0.06
E-38	91	16.8 ± 0.5	12.3 ± 0.8	0.95 ± 0.06
E-39	91	15.7 ± 0.4	11.2 ± 0.8	0.86 ± 0.06
Control				
E-20	91	17.5 ± 0.5	13.0 ± 0.8	1.00 ± 0.06
Mean±s.d.		17.6 ± 2.0	13.1 ± 2.0	1.01 ± 0.15

In-Transit Exposure

Date Annealed	03-14-06	06-09-06
Date Read	04-12-06	07-12-06
	Total mR	
ITC-1	4.0 ± 0.4	5.2 ± 0.4
ITC-2	4.2 ± 0.3	4.6 ± 0.1

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
3rd Quarter, 2006

	Date Annealed:	06-09-06	Days in the field	96
	Date Placed:	07-06-06	Days from Annealing	
	Date Removed:	10-10-06	to Readout:	133
	Date Read:	10-20-06		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	96	18.7 ± 1.5	12.4 ± 1.7	0.90 ± 0.12
E-2	96	22.9 ± 0.4	16.6 ± 0.9	1.21 ± 0.06
E-3	96	27.2 ± 1.7	20.9 ± 1.9	1.52 ± 0.14
E-4	96	22.4 ± 1.7	16.1 ± 1.9	1.17 ± 0.14
E-5	96	19.3 ± 0.3	13.0 ± 0.8	0.95 ± 0.06
E-6	96	20.9 ± 1.1	14.6 ± 1.3	1.06 ± 0.10
E-7	96	22.5 ± 0.7	16.2 ± 1.0	1.18 ± 0.08
E-8	96	21.9 ± 1.8	15.6 ± 2.0	1.14 ± 0.14
E-9	96	24.4 ± 1.0	18.1 ± 1.3	1.32 ± 0.09
E-12	96	17.7 ± 0.4	11.4 ± 0.9	0.83 ± 0.06
E-14	96	23.1 ± 0.6	16.8 ± 1.0	1.23 ± 0.07
E-15	96	24.8 ± 0.8	18.5 ± 1.1	1.35 ± 0.08
E-16	96	21.9 ± 0.7	15.6 ± 1.0	1.14 ± 0.08
E-17	96	23.5 ± 0.8	17.2 ± 1.1	1.25 ± 0.08
E-18	96	24.9 ± 1.0	18.6 ± 1.3	1.36 ± 0.09
E-22	96	24.3 ± 1.6	18.0 ± 1.8	1.31 ± 0.13
E-23	96	24.1 ± 0.7	17.8 ± 1.0	1.30 ± 0.08
E-24	96	22.9 ± 0.8	16.6 ± 1.1	1.21 ± 0.08
E-25	96	22.0 ± 0.6	15.7 ± 1.0	1.14 ± 0.07
E-26	96	20.3 ± 0.4	14.0 ± 0.9	1.02 ± 0.06
E-27	96	21.0 ± 0.4	14.7 ± 0.9	1.07 ± 0.06
E-28	96	16.6 ± 0.3	10.3 ± 0.8	0.75 ± 0.06
E-29	96	23.0 ± 1.2	16.7 ± 1.4	1.22 ± 0.10
E-30	96	20.6 ± 1.1	14.3 ± 1.3	1.04 ± 0.10
E-31	96	22.0 ± 1.0	15.7 ± 1.3	1.14 ± 0.09
E-32	96	21.2 ± 0.6	14.9 ± 1.0	1.09 ± 0.07
E-38	96	22.6 ± 1.8	16.3 ± 2.0	1.19 ± 0.14
E-39	96	20.2 ± 1.0	13.9 ± 1.3	1.01 ± 0.09
Control				
E-20	96	21.5 ± 1.2	15.2 ± 1.4	1.11 ± 0.10
Mean±s.d.		22.0 ± 2.3	15.7 ± 2.3	1.15 ± 0.16

	In-Transit Exposure	
Date Annealed	06-09-06	09-14-06
Date Read	07-12-06	10-20-06
	Total mR	
ITC-1	5.2 ± 0.4	8.3 ± 0.6
ITC-2	4.6 ± 0.1	7.1 ± 0.2

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
4th Quarter, 2006

Date Annealed:	09-14-06	Days in the field	84
Date Placed:	10-11-06	Days from Annealing	
Date Removed:	01-03-07	to Readout:	116
Date Read:	01-08-07		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	84	18.5 ± 0.9	13.0 ± 1.2	1.08 ± 0.10
E-2	84	24.5 ± 1.4	19.0 ± 1.6	1.58 ± 0.13
E-3	84	25.6 ± 1.9	20.1 ± 2.0	1.68 ± 0.17
E-4	84	22.4 ± 0.5	16.9 ± 0.9	1.41 ± 0.07
E-5	84	21.3 ± 0.7	15.8 ± 1.0	1.32 ± 0.08
E-6	84	23.4 ± 0.6	17.9 ± 0.9	1.49 ± 0.08
E-7	84	20.1 ± 0.3	14.6 ± 0.8	1.22 ± 0.07
E-8	84	20.9 ± 0.7	15.4 ± 1.0	1.28 ± 0.08
E-9	84	23.4 ± 1.4	17.9 ± 1.6	1.49 ± 0.13
E-12	84	17.6 ± 1.7	12.1 ± 1.8	1.01 ± 0.15
E-14	84	22.0 ± 1.0	16.5 ± 1.2	1.38 ± 0.10
E-15	84	26.2 ± 0.7	20.7 ± 1.0	1.73 ± 0.08
E-16	84	21.1 ± 0.3	15.6 ± 0.8	1.30 ± 0.07
E-17	84	21.5 ± 1.3	16.0 ± 1.5	1.33 ± 0.12
E-18	84	22.6 ± 0.8	17.1 ± 1.1	1.43 ± 0.09
E-22	84	22.5 ± 0.4	17.0 ± 0.8	1.42 ± 0.07
E-23	84	24.3 ± 0.8	18.8 ± 1.1	1.57 ± 0.09
E-24	84	22.2 ± 0.4	16.7 ± 0.8	1.39 ± 0.07
E-25	84	23.8 ± 1.3	18.3 ± 1.5	1.53 ± 0.12
E-26	84	20.3 ± 0.5	14.8 ± 0.9	1.23 ± 0.07
E-27	84	21.8 ± 0.6	16.3 ± 0.9	1.36 ± 0.08
E-28	84	18.0 ± 0.4	12.5 ± 0.8	1.04 ± 0.07
E-29	84	22.8 ± 0.6	17.3 ± 0.9	1.44 ± 0.08
E-30	84	21.2 ± 0.7	15.7 ± 1.0	1.31 ± 0.08
E-31	84	23.5 ± 0.6	18.0 ± 0.9	1.50 ± 0.08
E-32	84	20.7 ± 0.5	15.2 ± 0.9	1.27 ± 0.07
E-38	84	20.6 ± 0.7	15.1 ± 1.0	1.26 ± 0.08
E-39	84	18.9 ± 0.7	13.4 ± 1.0	1.12 ± 0.08
Control				
E-20	84	21.9 ± 1.6	16.4 ± 1.8	1.37 ± 0.15
Mean±s.d.		21.8 ± 2.1	16.3 ± 2.1	1.36 ± 0.17

In-Transit Exposure

Date Annealed	09-14-06	12-18-06
Date Read	10-20-06	01-08-07
	Total mR	
ITC-1	8.3 ± 0.6	3.2 ± 0.3
ITC-2	7.1 ± 0.2	3.4 ± 0.2

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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Environmental Inc., Midwest Laboratory participates in intercomparison studies administered by Environmental Resources Associates, and serves as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. Results are reported in Appendix A. TLD Intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also reported. Appendix A is updated four times a year; the complete Appendix is included in March, June, September and December monthly progress reports only.

January, 2006 through December, 2006

Appendix A

Interlaboratory Comparison Program Results

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

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

Results in Table A-1 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

The results in Table A-2 list results for thermoluminescent dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters, when available, and internal laboratory testing.

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

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

Table A-5 list results of the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Data for previous years available upon request.

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

Attachment A lists acceptance criteria for "spiked" samples.

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

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

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

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg > 100 pCi/liter or kg	5.0 pCi/liter 5% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg > 50 pCi/liter or kg	5.0 pCi/liter 10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg > 30 pCi/liter or kg	5.0 pCi/liter 10% of known value
Potassium-40	≥ 0.1 g/liter or kg	5% of known value
Gross alpha	≤ 20 pCi/liter > 20 pCi/liter	5.0 pCi/liter 25% of known value
Gross beta	≤ 100 pCi/liter > 100 pCi/liter	5.0 pCi/liter 5% of known value
Tritium	≤ 4,000 pCi/liter > 4,000 pCi/liter	$\pm 1\sigma$ = (pCi/liter) = $169.85 \times (\text{known})^{0.0933}$ 10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter > 55 pCi/liter	6.0 pCi/liter 10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter > 35 pCi/liter	6.0 pCi/liter 15% of known value
Iron-55[b]	50 to 100 pCi/liter > 100 pCi/liter	10 pCi/liter 10% of known value
Others[b]	---	20% of known value

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

[b] Laboratory limit.

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

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1078	01/16/06	Sr-89	49.9 ± 3.5	50.2	41.5 - 58.9	Pass
STW-1078	01/16/06	Sr-90	31.5 ± 1.5	30.7	22.0 - 39.4	Pass
STW-1079	01/16/06	Ba-133	86.5 ± 4.1	95.0	78.6 - 111.0	Pass
STW-1079	01/16/06	Co-60	96.3 ± 4.1	95.3	86.6 - 104.0	Pass
STW-1079	01/16/06	Cs-134	22.6 ± 3.0	23.1	14.4 - 31.8	Pass
STW-1079	01/16/06	Cs-137	109.0 ± 5.9	111.0	101.0 - 121.0	Pass
STW-1079	01/16/06	Zn-65	198.0 ± 11.2	192.0	159.0 - 225.0	Pass
STW-1080	01/16/06	Gr. Alpha	10.8 ± 1.4	9.6	1.0 - 18.3	Pass
STW-1080	01/16/06	Gr. Beta	56.9 ± 1.9	61.9	44.6 - 79.2	Pass
STW-1081	01/16/06	Ra-226	4.3 ± 0.4	4.6	3.4 - 5.8	Pass
STW-1081	01/16/06	Ra-228	7.1 ± 1.8	6.6	3.7 - 9.5	Pass
STW-1081	01/16/06	Uranium	20.7 ± 0.5	22.1	16.9 - 27.3	Pass
STW-1088	04/10/06	Sr-89	29.0 ± 1.8	32.4	23.7 - 41.1	Pass
STW-1088	04/10/06	Sr-90	8.7 ± 1.0	9.0	0.3 - 17.7	Pass
STW-1089	04/10/06	Ba-133	10.3 ± 0.4	10.0	1.3 - 18.7	Pass
STW-1089	04/10/06	Co-60	114.0 ± 2.8	113.0	103.0 - 123.0	Pass
STW-1089	04/10/06	Cs-134	41.9 ± 1.4	43.4	34.7 - 52.1	Pass
STW-1089	04/10/06	Cs-137	208.0 ± 1.1	214.0	195.0 - 233.0	Pass
STW-1089	04/10/06	Zn-65	154.0 ± 0.8	152.0	126.0 - 178.0	Pass
STW-1090	04/10/06	Gr. Alpha	13.4 ± 1.1	21.3	12.1 - 30.5	Pass
STW-1090	04/10/06	Gr. Beta	27.7 ± 2.1	23.0	14.3 - 31.7	Pass
STW-1091	04/10/06	I-131	22.0 ± 0.3	19.1	13.9 - 24.3	Pass
STW-1092	04/10/06	H-3	7960.0 ± 57.0	8130.0	6720.0 - 9540.0	Pass
STW-1092	04/10/06	Ra-226	2.9 ± 0.4	3.0	2.2 - 3.8	Pass
STW-1092	04/10/06	Ra-228	20.9 ± 1.2	19.1	10.8 - 27.4	Pass
STW-1092	04/10/06	Uranium	68.6 ± 3.4	69.1	57.1 - 81.1	Pass
STW-1094	07/10/06	Sr-89	15.9 ± 0.7	19.7	11.0 - 28.4	Pass
STW-1094	07/10/06	Sr-90	24.3 ± 0.4	25.9	17.2 - 34.6	Pass
STW-1095	07/10/06	Ba-133	94.9 ± 8.9	88.1	72.9 - 103.0	Pass
STW-1095	07/10/06	Co-60	104.0 ± 1.8	99.7	91.0 - 108.0	Pass
STW-1095	07/10/06	Cs-134	48.7 ± 1.3	54.1	45.4 - 62.8	Pass
STW-1095	07/10/06	Cs-137	236.0 ± 3.0	238.0	217.0 - 259.0	Pass
STW-1095	07/10/06	Zn-65	126.0 ± 8.0	121.0	100.0 - 142.0	Pass
STW-1096	07/10/06	Gr. Alpha	10.9 ± 1.0	10.0	1.3 - 18.6	Pass
STW-1096	07/10/06	Gr. Beta	9.7 ± 0.4	8.9	0.2 - 17.5	Pass
STW-1097	07/10/06	Ra-226	11.0 ± 0.5	10.7	7.9 - 13.5	Pass
STW-1097	07/10/06	Ra-228	12.2 ± 0.8	10.7	6.1 - 15.3	Pass
STW-1097	07/10/06	Uranium	43.4 ± 0.1	40.3	33.3 - 47.3	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1104	10/06/06	Sr-89	38.4 ± 1.3	39.9	31.2 - 45.7	Pass
STW-1104	10/06/06	Sr-90	15.5 ± 0.5	16.0	7.3 - 24.7	Pass
STW-1105	10/06/06	Ba-133	64.9 ± 2.8	70.2	58.1 - 82.3	Pass
STW-1105	10/06/06	Co-60	61.6 ± 1.0	62.3	53.6 - 71.0	Pass
STW-1105	10/06/06	Cs-134	29.0 ± 0.9	29.9	21.2 - 38.6	Pass
STW-1105	10/06/06	Cs-137	77.8 ± 2.4	78.2	69.5 - 86.9	Pass
STW-1105	10/06/06	Zn-65	293.0 ± 2.4	277.0	229.0 - 325.0	Pass
STW-1106	10/06/06	Gr. Alpha	23.9 ± 2.5	28.7	16.3 - 41.1	Pass
STW-1106	10/06/06	Gr. Beta	23.7 ± 1.4	20.9	12.2 - 29.6	Pass
STW-1107 [d]	10/06/06	I-131	28.4 ± 1.2	22.1	16.9 - 27.3	Fail
STW-1108	10/06/06	Ra-226	14.5 ± 0.5	14.4	10.7 - 18.1	Pass
STW-1108	10/06/06	Ra-228	6.6 ± 0.4	5.9	3.3 - 8.4	Pass
STW-1108	10/06/06	Uranium	2.9 ± 0.1	3.2	0.0 - 8.4	Pass
STW-1109	10/06/06	H-3	3000.0 ± 142.0	3050.0	2430.0 - 3670.0	Pass

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

[b] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

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

[d] The reported result was an average of three analyses, results ranged from 25.36 to 29.23 pCi/L. A fourth analysis was performed, result of analysis, 24.89 pCi/L.

TABLE A-2. Crosscheck program results; Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards).

Lab Code	Date	Description	Known Value (mR)	Lab Result ± 2 sigma (mR)	Control Limits (mR)	Acceptance
Environmental, Inc.						
2006-1	6/5/2006	30 cm	54.81	70.73 ± 0.69	38.37 - 71.25	Pass
2006-1	6/5/2006	60 cm	13.70	16.71 ± 1.89	9.59 - 17.81	Pass
2006-1	6/5/2006	60 cm	13.70	16.69 ± 0.94	9.59 - 17.81	Pass
2006-1	6/5/2006	90 cm	6.09	6.57 ± 0.82	4.26 - 7.92	Pass
2006-1	6/5/2006	120 cm	3.43	3.65 ± 0.22	2.40 - 4.46	Pass
2006-1	6/5/2006	120 cm	3.43	3.09 ± 0.33	2.40 - 4.46	Pass
2006-1	6/5/2006	150 cm	2.19	2.35 ± 0.38	1.53 - 2.85	Pass
2006-1	6/5/2006	150 cm	2.19	1.98 ± 0.10	1.53 - 2.85	Pass
2006-1	6/5/2006	180 cm	1.52	1.56 ± 0.26	1.06 - 1.98	Pass
Environmental, Inc.						
2006-2	11/6/2006	30 cm.	55.61	60.79 ± 1.32	38.93 - 72.29	Pass
2006-2	11/6/2006	40 cm.	31.28	35.93 ± 3.70	21.90 - 40.66	Pass
2006-2	11/6/2006	50 cm.	20.02	21.55 ± 1.20	14.01 - 26.03	Pass
2006-2	11/6/2006	60 cm.	13.90	14.90 ± 1.42	9.73 - 18.07	Pass
2006-2	11/6/2006	75 cm.	8.90	8.03 ± 0.51	6.23 - 11.57	Pass
2006-2	11/6/2006	90 cm.	6.18	6.88 ± 0.68	4.33 - 8.03	Pass
2006-2	11/6/2006	120 cm.	3.48	2.90 ± 0.20	2.44 - 4.52	Pass
2006-2	11/6/2006	150 cm.	2.22	1.99 ± 0.07	1.55 - 2.89	Pass
2006-2	11/6/2006	180 cm.	1.54	1.79 ± 0.94	1.08 - 2.00	Pass

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

Lab Code [b]	Date	Analysis	Concentration (pCi/L)[a] Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
SPW-301	1/20/2006	Fe-55	2700.10 ± 70.00	2502.50	2002.00 - 3003.00	Pass
SPAP-1224	3/7/2006	Cs-134	37.13 ± 3.70	39.52	29.52 - 49.52	Pass
SPAP-1224	3/7/2006	Cs-137	118.25 ± 8.97	119.30	107.37 - 131.23	Pass
SPAP-1224	3/7/2006	Gr. Beta	520.32 ± 7.42	455.00	364.00 - 637.00	Pass
SPW-1228	3/7/2006	H-3	70891.00 ± 719.00	75394.00	60315.20 - 90472.80	Pass
SPW-1230	3/7/2006	Cs-134	38.58 ± 2.10	39.51	29.51 - 49.51	Pass
SPW-1230	3/7/2006	Cs-137	59.44 ± 4.51	59.65	49.65 - 69.65	Pass
SPMI-1232	3/7/2006	Cs-134	41.20 ± 1.33	39.51	29.51 - 49.51	Pass
SPMI-1232	3/7/2006	Cs-137	57.82 ± 3.96	59.65	49.65 - 69.65	Pass
W-30906	3/9/2006	Gr. Alpha	24.24 ± 0.47	20.08	10.04 - 30.12	Pass
W-30906	3/9/2006	Gr. Beta	63.79 ± 0.48	65.73	55.73 - 75.73	Pass
SPW-2750	4/27/2006	Ni-63	116.00 ± 2.49	100.00	60.00 - 140.00	Pass
SPW-2869	5/1/2006	Fe-55	19473.00 ± 188.00	23332.00	18665.60 - 27998.40	Pass
SPAP-2871	5/1/2006	Cs-134	33.97 ± 1.10	37.50	27.50 - 47.50	Pass
SPAP-2871	5/1/2006	Cs-137	114.44 ± 2.81	118.90	107.01 - 130.79	Pass
SPW-2875	5/1/2006	H-3	71057.00 ± 730.20	75394.00	60315.20 - 90472.80	Pass
STSO-3155	5/1/2006	Co-60	7950.80 ± 67.29	7750.00	6975.00 - 8525.00	Pass
STSO-3155	5/1/2006	Cs-134	12.49 ± 0.13	11.59	1.59 - 21.59	Pass
STSO-3155	5/1/2006	Cs-137	14.10 ± 0.12	11.63	1.63 - 21.63	Pass
SPAP-2873	5/2/2006	Gr. Beta	1724.80 ± 4.51	1744.00	1395.20 - 2441.60	Pass
SPF-3183	5/10/2006	Cs-137	2.47 ± 0.03	2.38	1.43 - 3.33	Pass
SPF-3183	5/10/2006	Cs-134	0.73 ± 0.01	0.74	0.44 - 1.04	Pass
SPW-3460	5/26/2006	C-14	4009.60 ± 14.43	4741.00	2844.60 - 6637.40	Pass
W-60606	6/6/2006	Gr. Alpha	21.94 ± 0.46	20.08	10.04 - 30.12	Pass
W-60606	6/6/2006	Gr. Beta	58.17 ± 0.49	65.73	55.73 - 75.73	Pass
SPW-3988	6/16/2006	Cs-134	35.56 ± 1.40	36.00	26.00 - 46.00	Pass
SPW-3988	6/16/2006	Cs-137	60.23 ± 2.72	59.27	49.27 - 69.27	Pass
SPW-3988	6/16/2006	I-131(G)	94.01 ± 4.38	99.30	89.30 - 109.30	Pass
SPW-3988	6/16/2006	Sr-89	52.40 ± 4.23	58.16	46.53 - 69.79	Pass
SPW-3988	6/16/2006	Sr-90	45.35 ± 1.95	41.21	32.97 - 49.45	Pass
SPMI-3990	6/16/2006	Cs-134	35.52 ± 5.05	36.00	26.00 - 46.00	Pass
SPMI-3990	6/16/2006	Cs-137	56.78 ± 3.86	59.27	49.27 - 69.27	Pass
SPMI-3990	6/16/2006	I-131(G)	95.04 ± 5.05	99.30	89.30 - 109.30	Pass
SPMI-3991	6/16/2006	I-131	96.55 ± 0.87	99.30	79.44 - 119.16	Pass
SPW-4356	7/5/2006	I-131	80.88 ± 1.09	77.23	61.78 - 92.68	Pass
W-90506	9/5/2006	Gr. Alpha	23.11 ± 0.45	20.08	10.04 - 30.12	Pass
W-90506	9/5/2006	Gr. Beta	65.01 ± 0.51	65.73	55.73 - 75.73	Pass
SPAP-6950	9/30/2006	Cs-134	28.93 ± 1.56	32.65	22.65 - 42.65	Pass
SPAP-6950	9/30/2006	Cs-137	116.62 ± 2.97	117.75	105.98 - 129.53	Pass
SPAP-6952	9/30/2006	Gr. Beta	52.96 ± 0.14	53.50	42.80 - 74.90	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory results 2s, n=1[b]	Known Activity	Control Limits[c]	Acceptance
SPW-6954	9/30/2006	Cs-134	63.29 ± 8.24	65.30	55.30 - 75.30	Pass
SPW-6954	9/30/2006	Cs-137	60.41 ± 7.53	58.87	48.87 - 68.87	Pass
SPMI-6956	9/30/2006	Cs-134	69.26 ± 4.85	65.31	55.31 - 75.31	Pass
SPMI-6956	9/30/2006	Cs-137	61.35 ± 7.62	58.87	48.87 - 68.87	Pass
W-120106	12/1/2006	Gr. Alpha	22.40 ± 1.03	20.08	10.04 - 30.12	Pass
W-120106	12/1/2006	Gr. Beta	63.70 ± 1.14	65.73	55.73 - 75.73	Pass
SPAP-9476	12/29/2006	Gr. Beta	57.51 ± 0.14	53.16	42.53 - 74.42	Pass
SPAP-9478	12/29/2006	Cs-134	26.84 ± 1.23	30.06	20.06 - 40.06	Pass
SPAP-9478	12/29/2006	Cs-137	110.54 ± 3.12	117.10	105.39 - 128.81	Pass
SPW-9480	12/29/2006	H-3	68972.20 ± 748.00	72051.60	57641.28 - 86461.92	Pass
SPW-9483	12/29/2006	Tc-99	29.43 ± 0.84	32.98	20.98 - 44.98	Pass
SPW-9488	12/29/2006	Cs-134	61.35 ± 1.65	60.10	50.10 - 70.10	Pass
SPW-9488	12/29/2006	Cs-137	60.30 ± 2.76	56.80	46.80 - 66.80	Pass
SPMI-9490	12/29/2006	Cs-134	58.99 ± 5.43	60.10	50.10 - 70.10	Pass
SPMI-9490	12/29/2006	Cs-137	54.16 ± 7.85	56.80	46.80 - 66.80	Pass
SPF-9492	12/29/2006	Cs-134	0.64 ± 0.01	0.60	0.36 - 0.84	Pass
SPF-9492	12/29/2006	Cs-137	2.61 ± 0.03	2.34	1.40 - 3.28	Pass

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

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

[c] Results are based on single determinations.

[d] Control limits are based on Attachment A, Page A2 of this report.

NOTE: For fish, Jello is used for the Spike matrix. For Vegetation, cabbage is used for the Spike matrix.

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a] Laboratory results (4.66σ) LLD	Activity[c]	Acceptance Criteria (4.66 σ)
SPW-302	water	1/20/2006	Fe-55	1061	-91 ± 637	1000
SPAP-1225	Air Filter	3/7/2006	Gr. Beta	1.16	-0.512 ± 51.20	3.2
SPW-1231	water	3/7/2006	Cs-134	2.71		10
SPW-1231	water	3/7/2006	Cs-137	2.05		10
W-30906	water	3/9/2006	Gr. Alpha	0.037	0.005 ± 0.026	1
W-30906	water	3/9/2006	Gr. Beta	0.076	-0.016 ± 0.052	3.2
SPW-2751	water	4/27/2006	Ni-63	1.48	0.37 ± 0.91	20
SPW-2868	water	5/1/2006	Fe-55	18.07	4.33 ± 11.27	1000
SPW-2874	water	5/1/2006	H-3	166.00	-8.3 ± 86.9	200
SPAP-2872	Air Filter	5/2/2006	Gr. Beta	1.18	-3.65 ± 0.64	3.2
SPF-3154	Fish	5/10/2006	Cs-134	16.4		100
SPF-3154	Fish	5/10/2006	Cs-137	13.7		100
SPW-3461	water	5/26/2006	C-14	10.20	-7.9 ± 5.20	200
W-60606	water	6/6/2006	Gr. Alpha	0.05	0.013 ± 0.037	1
W-60606	water	6/6/2006	Gr. Beta	0.16	-0.044 ± 0.11	3.2
SPW-3989	water	6/16/2006	Cs-134	3.00		10
SPW-3989	water	6/16/2006	Cs-137	3.65		10
SPW-3989	water	6/16/2006	I-131	0.21	0.045 ± 0.14	0.5
SPW-3989	water	6/16/2006	I-131(G)	8.34		20
SPW-3989	water	6/16/2006	Sr-89	0.54	0.005 ± 0.45	5
SPW-3989	water	6/16/2006	Sr-90	0.58	-0.079 ± 0.26	1
SPMI-3991	Milk	6/16/2006	Cs-134	4.42		10
SPMI-3991	Milk	6/16/2006	Cs-137	3.88		10
SPMI-3991	Milk	6/16/2006	I-131	0.28	-0.22 ± 0.19	0.5
SPMI-3991	Milk	6/16/2006	I-131(G)	3.76		20
SPMI-3991	Milk	6/16/2006	Sr-89	0.61	-0.25 ± 0.76	5
SPMI-3991 [d]	Milk	6/16/2006	Sr-90	0.52	0.88 ± 0.34	1
W-90506	water	9/5/2006	Gr. Alpha	0.06	0.00 ± 0.04	1
W-90506	water	9/5/2006	Gr. Beta	0.16	0.05 ± 0.11	3.2
SPMI-6383	Milk	9/14/2006	Sr-89	0.97	-0.18 ± 0.92	5
SPMI-6383 [d]	Milk	9/14/2006	Sr-90	0.57	0.65 ± 0.33	1
SPAP-6949	Air Filter	9/30/2006	Cs-134	0.89		100
SPAP-6949	Air Filter	9/30/2006	Cs-137	0.91		100
SPAP-6951	Air Filter	9/30/2006	Gr. Beta	1.12	-0.54 ± 0.64	3.2
SPW-6953	water	9/30/2006	Cs-134	3.91		10
SPW-6953	water	9/30/2006	Cs-137	5.61		10
SPW-6953	water	9/30/2006	Sr-89	0.79	-0.14 ± 0.64	5
SPW-6953	water	9/30/2006	Sr-90	0.60	0.11 ± 0.29	1

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

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a] Laboratory results (4.66σ) LLD	Activity[c]	Acceptance Criteria (4.66 σ)
SPMI-6955	Milk	9/30/2006	Cs-134	2.86		10
SPMI-6955	Milk	9/30/2006	Cs-137	2.39		10
SPMI-6955	Milk	9/30/2006	I-131(G)	9.98		0.5
W-120106	water	12/1/2006	Gr. Alpha	0.11	0.066 ± 0.072	1
W-120106	water	12/1/2006	Gr. Beta	0.30	0.093 ± 0.16	3.2
SPAP-9477	Air Filter	12/29/2006	Gr. Beta	1.13	-0.37 ± 0.66	3.2
SPAP-9479	Air Filter	12/29/2006	Cs-137	0.87		100
SPW-9481	water	12/29/2006	H-3	146.2	63.2 ± 80.1	200
SPW-9483	water	12/29/2006	Tc-99	0.95	-1.20 ± 0.56	10
SPW-9489	water	12/29/2006	Cs-134	2.30		10
SPMI-9491	Milk	12/29/2006	Cs-134	3.10		10
SPMI-9491	Milk	12/29/2006	Cs-137	2.90		10
SPMI-9491	Milk	12/29/2006	I-131(G)	8.00		20
SPF-9493	Fish	12/29/2006	Cs-134	7.6		100
SPF-9493	Fish	12/29/2006	Cs-137	7.9		100

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

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

[c] Activity reported is a net activity result. For gamma spectroscopic analysis, activity detected below the LLD value is not reported

[d] Low levels of Sr-90 are still detected in the environment. A concentration of (1-5 pCi/L) in milk is not unusual.

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
AP-7466, 7467	1/3/2006	Be-7	0.053 ± 0.015	0.057 ± 0.011	0.055 ± 0.009	Pass
AP-7513, 7514	1/3/2006	Be-7	0.033 ± 0.008	0.036 ± 0.008	0.035 ± 0.006	Pass
AP-7555, 7556	1/3/2006	Be-7	0.053 ± 0.007	0.054 ± 0.008	0.053 ± 0.005	Pass
MI-154, 155	1/10/2006	K-40	1254.20 ± 87.75	1369.60 ± 102.80	1311.90 ± 67.58	Pass
MI-217, 218	1/11/2006	K-40	1258.00 ± 118.00	1313.00 ± 98.00	1285.50 ± 76.69	Pass
MI-217, 218	1/11/2006	Sr-90	1.27 ± 0.37	0.92 ± 0.33	1.10 ± 0.25	Pass
MI-287, 288	1/17/2006	K-40	1383.10 ± 110.90	1457.80 ± 119.10	1420.45 ± 81.37	Pass
MI-287, 288	1/17/2006	Sr-90	0.74 ± 0.38	0.94 ± 0.37	0.84 ± 0.27	Pass
WW-314, 315	1/19/2006	Gr. Beta	9.21 ± 1.72	11.52 ± 1.93	10.37 ± 1.29	Pass
WW-314, 315	1/19/2006	H-3	168.64 ± 94.94	210.12 ± 96.51	189.38 ± 67.69	Pass
SWT-577, 578	1/31/2006	Gr. Beta	3.06 ± 0.66	3.68 ± 0.64	3.37 ± 0.46	Pass
SWU-598, 599	1/31/2006	Gr. Beta	2.03 ± 0.39	1.97 ± 0.40	2.00 ± 0.28	Pass
SWU-598, 599	1/31/2006	H-3	260.10 ± 98.20	134.10 ± 93.50	197.10 ± 67.80	Pass
F-3311, 3312 [b]	2/9/2006	Gr. Beta	4.12 ± 0.14	3.82 ± 0.13	3.97 ± 0.10	Fail
F-3311, 3312	2/9/2006	K-40	2.68 ± 0.37	2.76 ± 0.39	2.72 ± 0.27	Pass
SW-780, 781	2/14/2006	Gr. Alpha	4.09 ± 1.52	3.22 ± 1.37	3.66 ± 1.03	Pass
SW-780, 781	2/14/2006	Gr. Beta	5.91 ± 0.90	5.89 ± 0.92	5.90 ± 0.64	Pass
DW-934, 935	2/17/2006	I-131	0.35 ± 0.22	0.31 ± 0.25	0.33 ± 0.16	Pass
DW-1024, 1025	2/24/2006	I-131	0.24 ± 0.26	0.53 ± 0.24	0.39 ± 0.18	Pass
MI-1078, 1079	3/1/2006	Sr-90	1.42 ± 0.39	1.30 ± 0.62	1.36 ± 0.37	Pass
F-1357, 1358	3/10/2006	Gr. Beta	3.77 ± 0.07	3.71 ± 0.07	3.74 ± 0.05	Pass
F-1357, 1358	3/10/2006	K-40	2.46 ± 0.32	2.32 ± 0.44	2.39 ± 0.27	Pass
MI-1469, 1470	3/14/2006	K-40	1396.30 ± 120.80	1335.60 ± 113.80	1365.95 ± 82.98	Pass
CF-1538, 1539	3/21/2006	K-40	13.66 ± 0.81	13.97 ± 0.68	13.81 ± 0.53	Pass
WW-1583, 1584	3/22/2006	Gr. Beta	7.66 ± 0.73	8.87 ± 0.75	8.26 ± 0.52	Pass
DW-1955, 1956	3/27/2006	Gr. Beta	2.25 ± 0.60	3.15 ± 0.59	2.70 ± 0.42	Pass
MI-1760, 1761	3/29/2006	K-40	1271.00 ± 89.00	1378.00 ± 113.00	1324.50 ± 71.92	Pass
AP-2603, 2604	3/29/2006	Be-7	0.067 ± 0.015	0.056 ± 0.010	0.062 ± 0.009	Pass
E-1997, 1998	4/3/2006	Gr. Beta	1.82 ± 0.07	1.87 ± 0.07	1.85 ± 0.05	Pass
E-1997, 1998	4/3/2006	K-40	1.28 ± 0.15	1.24 ± 0.21	1.26 ± 0.13	Pass
AP-2818, 2819	4/3/2006	Be-7	0.06 ± 0.01	0.06 ± 0.01	0.06 ± 0.01	Pass
SWU-2863, 2864	4/3/2006	Gr. Beta	3.20 ± 1.26	4.77 ± 1.30	3.99 ± 0.91	Pass
SS-2389, 2390	4/11/2006	Gr. Beta	10.53 ± 0.96	9.38 ± 0.84	9.96 ± 0.64	Pass
SS-2389, 2390	4/11/2006	K-40	5.51 ± 0.42	5.79 ± 0.40	5.65 ± 0.29	Pass
DW-2773, 2774	4/21/2006	I-131	0.74 ± 0.23	0.53 ± 0.40	0.63 ± 0.23	Pass
SL-2932, 2933	5/1/2006	Be-7	1.28 ± 0.19	1.27 ± 0.17	1.28 ± 0.13	Pass
SL-2932, 2933	5/1/2006	Gr. Beta	6.09 ± 0.33	5.65 ± 0.31	5.87 ± 0.23	Pass
SL-2932, 2933	5/1/2006	K-40	3.13 ± 0.41	3.09 ± 0.36	3.11 ± 0.27	Pass
BS-3103, 3104	5/1/2006	Gr. Beta	8.27 ± 1.46	9.03 ± 1.59	8.65 ± 1.08	Pass
BS-3103, 3104	5/1/2006	K-40	6288.20 ± 585.20	5643.70 ± 599.80	5965.95 ± 418.99	Pass
MI-3037, 3038	5/2/2006	K-40	1238.90 ± 98.59	1301.00 ± 103.90	1269.95 ± 71.62	Pass
MI-3037, 3038	5/2/2006	Sr-90	1.76 ± 0.42	1.48 ± 0.42	1.62 ± 0.29	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-3124, 3125	5/9/2006	K-40	1032.30 ± 91.12	1103.60 ± 120.50	1067.95 ± 75.54	Pass
SW-3145, 3146	5/9/2006	Gr. Alpha	4.85 ± 1.68	4.12 ± 1.62	4.48 ± 1.17	Pass
SW-3145, 3146	5/9/2006	Gr. Beta	8.94 ± 1.46	9.14 ± 1.36	9.04 ± 1.00	Pass
MI-3236, 3237	5/10/2006	K-40	1412.40 ± 119.10	1427.90 ± 127.70	1420.15 ± 87.31	Pass
F-3422, 3423	5/19/2006	H-3	8175.00 ± 252.00	8268.00 ± 253.00	8221.50 ± 178.54	Pass
G-3491, 3492	5/24/2006	Gr. Beta	8.89 ± 0.18	9.03 ± 0.19	8.96 ± 0.13	Pass
G-3491, 3492	5/24/2006	K-40	5.60 ± 0.71	6.30 ± 0.78	5.95 ± 0.53	Pass
SO-3539, 3540	5/24/2006	Gr. Beta	19.57 ± 1.99	18.98 ± 1.91	19.27 ± 1.38	Pass
SO-3539, 3540	5/24/2006	K-40	12.55 ± 0.89	11.49 ± 0.59	12.02 ± 0.53	Pass
WW-3751, 3752	5/25/2006	Gr. Beta	9.85 ± 0.79	8.96 ± 0.74	9.41 ± 0.54	Pass
F-3617, 3618	5/30/2006	K-40	2.42 ± 0.38	2.53 ± 0.37	2.47 ± 0.27	Pass
SL-3641, 3642	6/1/2006	Be-7	1.41 ± 0.19	1.31 ± 0.27	1.36 ± 0.17	Pass
SL-3641, 3642	6/1/2006	Gr. Beta	5.03 ± 0.18	5.30 ± 0.19	5.17 ± 0.13	Pass
SL-3641, 3642	6/1/2006	K-40	2.21 ± 0.26	2.14 ± 0.37	2.18 ± 0.23	Pass
MI-3886, 3887	6/12/2006	K-40	1424.20 ± 118.20	1318.80 ± 110.50	1371.50 ± 80.90	Pass
VE-3949, 3950	6/13/2006	Gr. Alpha	0.13 ± 0.06	0.16 ± 0.07	0.15 ± 0.05	Pass
VE-3949, 3950	6/13/2006	Gr. Beta	4.53 ± 0.19	4.47 ± 0.18	4.50 ± 0.13	Pass
VE-3949, 3950	6/13/2006	K-40	6.02 ± 0.66	5.33 ± 0.66	5.67 ± 0.47	Pass
BS-4016, 4017	6/13/2006	Co-60	0.18 ± 0.03	0.15 ± 0.03	0.16 ± 0.02	Pass
BS-4016, 4017	6/13/2006	Cs-137	1.97 ± 0.09	2.01 ± 0.09	1.99 ± 0.06	Pass
BS-4016, 4017	6/13/2006	K-40	11.03 ± 0.76	10.45 ± 0.78	10.74 ± 0.54	Pass
MI-3992, 3993	6/14/2006	K-40	1358.50 ± 166.40	1395.80 ± 122.70	1377.15 ± 103.37	Pass
LW-4175, 4176	6/16/2006	H-3	482.11 ± 90.25	397.50 ± 86.88	439.81 ± 62.63	Pass
W-4130, 4131	6/21/2006	H-3	401.50 ± 87.85	236.28 ± 80.89	318.89 ± 59.71	Pass
AV-4330, 4331	6/26/2006	K-40	1717.10 ± 244.30	1893.10 ± 223.30	1805.10 ± 165.49	Pass
SWU-4489, 4490	6/27/2006	Gr. Beta	1.70 ± 0.38	1.93 ± 0.38	1.82 ± 0.27	Pass
AP-4909, 4910	6/29/2006	Be-7	0.11 ± 0.01	0.11 ± 0.02	0.11 ± 0.01	Pass
AP-4952, 4953	6/29/2006	Be-7	0.08 ± 0.02	0.10 ± 0.02	0.09 ± 0.01	Pass
AP-4930, 4931	7/3/2006	Be-7	0.08 ± 0.02	0.07 ± 0.01	0.08 ± 0.01	Pass
E-4399, 4400	7/5/2006	Gr. Beta	1.85 ± 0.05	1.85 ± 0.05	1.85 ± 0.04	Pass
E-4399, 4400	7/5/2006	K-40	1.25 ± 0.19	1.24 ± 0.18	1.25 ± 0.13	Pass
G-4420, 4421	7/5/2006	Be-7	0.82 ± 0.20	0.61 ± 0.14	0.72 ± 0.12	Pass
G-4420, 4421	7/5/2006	Gr. Beta	13.20 ± 0.40	14.00 ± 0.40	13.60 ± 0.28	Pass
G-4420, 4421	7/5/2006	K-40	9.96 ± 0.44	10.06 ± 0.82	10.01 ± 0.47	Pass
DW-60432, 60433	7/6/2006	Gr. Alpha	3.24 ± 1.35	2.49 ± 1.33	2.87 ± 0.95	Pass
DW-60514, 60515	7/10/2006	Gr. Alpha	3.70 ± 1.12	3.09 ± 1.16	3.40 ± 0.81	Pass
DW-60449, 60450	7/11/2006	Gr. Alpha	6.87 ± 1.26	4.77 ± 1.09	5.82 ± 0.83	Pass
MI-4599, 4600	7/12/2006	K-40	1403.50 ± 118.80	1330.40 ± 116.50	1366.95 ± 83.20	Pass
MI-4599, 4600	7/12/2006	Sr-90	0.59 ± 0.34	0.70 ± 0.35	0.65 ± 0.24	Pass
MI-4667, 4668	7/12/2006	K-40	1286.60 ± 92.62	1358.60 ± 158.40	1322.60 ± 91.75	Pass
LW-4823, 4824	7/14/2006	Gr. Beta	1.75 ± 0.60	2.51 ± 0.59	2.13 ± 0.42	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
DW-60502, 60503	7/19/2006	Gr. Alpha	16.27 ± 2.49	21.41 ± 3.21	18.84 ± 2.03	Pass
DW-60526, 60527	7/21/2006	Gr. Alpha	14.06 ± 1.82	15.57 ± 1.77	14.82 ± 1.27	Pass
DW-60539, 60540	7/21/2006	Gr. Alpha	5.09 ± 0.95	6.23 ± 1.05	5.66 ± 0.71	Pass
MI-5125, 5126	7/25/2006	K-40	1480.60 ± 118.30	1402.60 ± 120.80	1441.60 ± 84.54	Pass
DW-60609, 60610	7/26/2006	Gr. Alpha	1.00 ± 1.10	2.70 ± 1.30	1.85 ± 0.85	Pass
DW-60621, 60622	7/31/2006	Gr. Alpha	3.70 ± 1.00	1.90 ± 0.80	2.80 ± 0.64	Pass
SL-5265, 5266	8/1/2006	Be-7	1.10 ± 0.46	1.38 ± 0.52	1.24 ± 0.35	Pass
SL-5265, 5266	8/1/2006	Sr-90	0.10 ± 0.03	0.16 ± 0.03	0.13 ± 0.02	Pass
SL-5265, 5266	8/1/2006	Gr. Beta	4.41 ± 0.41	3.46 ± 0.57	3.94 ± 0.35	Pass
SL-5265, 5266	8/1/2006	K-40	1.19 ± 0.52	0.87 ± 0.52	1.03 ± 0.37	Pass
VE-5286, 5287	8/1/2006	Be-7	1.21 ± 0.30	1.32 ± 0.20	1.27 ± 0.18	Pass
VE-5286, 5287	8/1/2006	Gr. Beta	9.67 ± 0.35	9.37 ± 0.35	9.52 ± 0.25	Pass
VE-5286, 5287	8/1/2006	K-40	6.25 ± 0.81	6.50 ± 0.48	6.38 ± 0.47	Pass
SW-5383, 5384	8/8/2006	Gr. Alpha	3.24 ± 1.35	2.94 ± 1.35	3.09 ± 0.96	Pass
SW-5383, 5384	8/8/2006	Gr. Beta	4.86 ± 0.86	5.46 ± 0.87	5.16 ± 0.61	Pass
SW-5971, 5972	8/8/2006	H-3	119.90 ± 78.14	144.41 ± 79.23	132.15 ± 55.64	Pass
VE-5404, 5405	8/10/2006	Be-7	0.77 ± 0.24	1.01 ± 0.26	0.89 ± 0.18	Pass
VE-5404, 5405	8/10/2006	K-40	4.71 ± 0.63	4.01 ± 0.58	4.36 ± 0.43	Pass
DW-5480, 5481	8/11/2006	H-3	169.08 ± 85.52	133.65 ± 83.96	151.36 ± 59.92	Pass
DW-60645, 60646	8/15/2006	Gr. Alpha	10.41 ± 1.78	10.97 ± 1.85	10.69 ± 1.28	Pass
W-5602, 5603	8/16/2006	H-3	2118.79 ± 151.55	2181.82 ± 153.09	2150.30 ± 107.71	Pass
DW-60634, 60635	8/18/2006	Gr. Alpha	12.99 ± 1.84	9.67 ± 1.61	11.33 ± 1.22	Pass
DW-60634, 60635	8/18/2006	Gr. Beta	10.51 ± 1.33	8.61 ± 1.18	9.56 ± 0.89	Pass
MI-5793, 5794	8/22/2006	K-40	1264.00 ± 115.00	1377.00 ± 121.00	1320.50 ± 83.47	Pass
SWU-6150, 6151	8/29/2006	Gr. Beta	1.84 ± 0.28	1.81 ± 0.28	1.82 ± 0.20	Pass
DW-60657, 60658	8/29/2006	Gr. Alpha	2.33 ± 0.80	2.90 ± 0.78	2.62 ± 0.56	Pass
CF-7450, 7451	9/5/2006	Be-7	0.78 ± 0.45	0.78 ± 0.27	0.78 ± 0.26	Pass
SL-6085, 6086	9/5/2006	Co-60	0.22 ± 0.03	0.21 ± 0.02	0.22 ± 0.02	Pass
SL-6085, 6086	9/5/2006	Gr. Beta	5.47 ± 0.69	4.63 ± 0.58	5.05 ± 0.45	Pass
SL-6085, 6086	9/5/2006	K-40	1.91 ± 0.28	2.06 ± 0.41	1.99 ± 0.25	Pass
DW-60695, 60696	9/11/2006	Gr. Alpha	3.93 ± 1.17	4.62 ± 1.12	4.28 ± 0.81	Pass
LW-6266, 6267	9/13/2006	Gr. Beta	3.09 ± 0.48	2.98 ± 0.48	3.03 ± 0.34	Pass
MI-6424, 6425	9/19/2006	Sr-90	0.78 ± 0.38	1.11 ± 0.37	0.95 ± 0.27	Pass
DW-60715, 60716	9/19/2006	Gr. Alpha	1.30 ± 1.00	2.23 ± 1.01	1.77 ± 0.71	Pass
SO-6597, 6598	9/22/2006	Cs-137	0.18 ± 0.04	0.18 ± 0.04	0.18 ± 0.03	Pass
SO-6597, 6598	9/22/2006	K-40	10.25 ± 0.66	10.11 ± 0.64	10.18 ± 0.46	Pass
SWU-6718, 6719	9/26/2006	Gr. Beta	3.45 ± 1.21	2.78 ± 1.19	3.12 ± 0.85	Pass
SO-6668, 6669	9/27/2006	Cs-137	0.13 ± 0.04	0.13 ± 0.02	0.13 ± 0.02	Pass
SO-6668, 6669	9/27/2006	K-40	13.04 ± 0.90	12.41 ± 0.54	12.72 ± 0.53	Pass

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

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-6760, 6761	10/2/2006	K-40	1413.10 ± 113.20	1187.30 ± 155.20	1300.20 ± 96.05	Pass
G-6797, 6798	10/2/2006	Be-7	4.70 ± 0.31	4.56 ± 0.41	4.63 ± 0.26	Pass
G-6797, 6798	10/2/2006	Gr. Beta	6.89 ± 0.26	7.04 ± 0.24	6.97 ± 0.18	Pass
G-6797, 6798 [b]	10/2/2006	K-40	5.39 ± 0.35	4.36 ± 0.47	4.88 ± 0.29	Fail
AP-7531, 7532	10/3/2006	Be-7	0.07 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-7552, 7553	10/3/2006	Be-7	0.08 ± 0.02	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-7573, 7574	10/3/2006	Be-7	0.08 ± 0.02	0.08 ± 0.01	0.08 ± 0.01	Pass
SO-7103, 7104	10/4/2006	Cs-137	0.25 ± 0.05	0.27 ± 0.06	0.26 ± 0.04	Pass
SO-7103, 7104	10/4/2006	K-40	12.95 ± 1.12	12.22 ± 1.07	12.58 ± 0.77	Pass
DW-60759, 60760	10/5/2006	Gr. Alpha	4.93 ± 0.97	5.04 ± 1.03	4.99 ± 0.71	Pass
MI-7037, 7038	10/10/2006	K-40	1326.10 ± 115.20	1251.40 ± 115.70	1288.75 ± 81.64	Pass
VE-7058, 7059	10/10/2006	Gr. Alpha	0.18 ± 0.11	0.32 ± 0.14	0.25 ± 0.09	Pass
VE-7058, 7059	10/10/2006	Gr. Beta	9.21 ± 0.34	8.83 ± 0.36	9.02 ± 0.25	Pass
VE-7058, 7059	10/10/2006	K-40	10.90 ± 0.65	10.42 ± 0.80	10.66 ± 0.52	Pass
SS-7079, 7080	10/10/2006	Cs-137	0.04 ± 0.01	0.04 ± 0.02	0.04 ± 0.01	Pass
SS-7079, 7080	10/10/2006	Gr. Beta	12.23 ± 2.46	11.76 ± 2.23	11.99 ± 1.66	Pass
SS-7079, 7080	10/10/2006	K-40	7.23 ± 0.36	7.37 ± 0.40	7.30 ± 0.27	Pass
MI-7208, 7209	10/11/2006	K-40	1295.20 ± 116.90	1386.90 ± 119.10	1341.05 ± 83.44	Pass
CF-7450, 7451	10/18/2006	K-40	20.40 ± 0.84	19.54 ± 0.99	19.97 ± 0.65	Pass
LW-7945, 7946	10/26/2006	Gr. Beta	1.30 ± 0.37	1.44 ± 0.36	1.37 ± 0.26	Pass
F-7971, 7972	10/29/2006	K-40	3.63 ± 0.54	3.33 ± 0.43	3.48 ± 0.34	Pass
SWU-8194, 8195	10/31/2006	Gr. Beta	1.84 ± 0.28	1.43 ± 0.28	1.64 ± 0.20	Pass
BS-8017, 8018	11/1/2006	Gr. Beta	10.54 ± 1.72	10.17 ± 1.73	10.36 ± 1.22	Pass
BS-8017, 8018	11/1/2006	K-40	10.00 ± 0.53	9.60 ± 0.69	9.80 ± 0.44	Pass
LW-8215, 8216	11/1/2006	Gr. Beta	2.23 ± 0.61	1.64 ± 0.37	1.93 ± 0.35	Pass
F-8345, 8346	11/2/2006	K-40	2.84 ± 0.42	2.89 ± 0.40	2.86 ± 0.29	Pass
BS-8366, 8367	11/2/2006	K-40	13.69 ± 0.66	13.61 ± 0.78	13.65 ± 0.51	Pass
MI-8083, 8084	11/6/2006	K-40	1295.00 ± 121.20	1374.80 ± 162.80	1334.90 ± 101.48	Pass
WW-8259, 8260	11/7/2006	H-3	337.00 ± 95.00	295.00 ± 93.00	316.00 ± 66.47	Pass
MI-8484, 8485	11/22/2006	K-40	1405.80 ± 87.06	1390.70 ± 103.60	1398.25 ± 67.66	Pass
SO-8619, 8620	11/27/2006	Cs-137	0.74 ± 0.08	0.69 ± 0.06	0.71 ± 0.05	Pass
SO-8619, 8620	11/27/2006	Gr. Alpha	16.54 ± 5.65	12.24 ± 4.90	14.39 ± 3.74	Pass
SO-8619, 8620	11/27/2006	Gr. Beta	24.99 ± 3.88	28.66 ± 3.95	26.82 ± 2.77	Pass
SO-8619, 8620	11/27/2006	K-40	12.21 ± 1.11	12.92 ± 0.83	12.57 ± 0.69	Pass
SWT-8641, 8642	11/29/2006	Gr. Beta	2.83 ± 0.47	2.89 ± 0.45	2.86 ± 0.33	Pass
SWT-9436, 9437	12/26/2006	Gr. Beta	2.39 ± 0.64	2.25 ± 0.60	2.32 ± 0.44	Pass

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

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

[b] 200 minute count time or longer, resulting in lower error.

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

Lab Code[c]	Date	Analysis	Concentration [b] Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1082	01/01/06	Am-241	0.16 ± 0.06	0.16	0.11 - 0.20	Pass
STVE-1082	01/01/06	Co-57	10.40 ± 0.20	8.58	6.00 - 11.15	Pass
STVE-1082	01/01/06	Co-60	5.00 ± 0.20	4.52	3.16 - 5.88	Pass
STVE-1082 [e]	01/01/06	Cs-134	< 0.20	0.00		Pass
STVE-1082	01/01/06	Cs-137	3.40 ± 0.20	3.07	2.15 - 4.00	Pass
STVE-1082	01/01/06	Mn-54	6.90 ± 0.20	6.25	4.37 - 8.12	Pass
STVE-1082 [f]	01/01/06	Pu-238	0.08 ± 0.03	0.14	0.10 - 0.18	Fail
STVE-1082	01/01/06	Pu-239/40	0.17 ± 0.03	0.16	0.11 - 0.21	Pass
STVE-1082	01/01/06	Sr-90	1.40 ± 0.20	1.56	1.09 - 2.03	Pass
STVE-1082	01/01/06	U-233/4	0.24 ± 0.05	0.21	0.15 - 0.27	Pass
STVE-1082	01/01/06	U-238	0.19 ± 0.04	0.22	0.15 - 0.28	Pass
STVE-1082	01/01/06	Zn-65	11.10 ± 0.50	9.80	6.86 - 12.74	Pass
STSO-1083	01/01/06	Am-241	54.60 ± 5.50	57.08	39.96 - 74.20	Pass
STSO-1083	01/01/06	Co-57	762.90 ± 12.70	656.29	459.40 - 853.18	Pass
STSO-1083	01/01/06	Co-60	504.90 ± 3.10	447.10	312.97 - 581.23	Pass
STSO-1083 [e]	01/01/06	Cs-134	< 1.70	0.00		Pass
STSO-1083	01/01/06	Cs-137	406.50 ± 3.70	339.69	237.78 - 441.60	Pass
STSO-1083	01/01/06	K-40	719.20 ± 18.40	604.00	422.80 - 785.20	Pass
STSO-1083	01/01/06	Mn-54	415.60 ± 4.80	346.77	242.74 - 450.80	Pass
STSO-1083	01/01/06	Ni-63	261.40 ± 14.70	323.51	226.46 - 420.56	Pass
STSO-1083	01/01/06	Pu-238	14.60 ± 2.90	61.15	42.81 - 79.50	Fail
STSO-1083	01/01/06	Pu-239/40	14.60 ± 2.40	45.85	32.09 - 59.61	Fail
STSO-1083	01/01/06	U-233/4	13.50 ± 1.70	37.00	25.90 - 48.10	Fail
STSO-1083	01/01/06	U-238	15.40 ± 1.80	38.85	27.20 - 50.50	Fail
STSO-1083	01/01/06	Zn-65	783.40 ± 7.00	657.36	460.15 - 854.57	Pass
STAP-1084	01/01/06	Gr. Alpha	0.26 ± 0.02	0.36	0.00 - 0.72	Pass
STAP-1084	01/01/06	Gr. Beta	0.51 ± 0.03	0.48	0.24 - 0.72	Pass
STAP-1085	01/01/06	Am-241	0.12 ± 0.02	0.09	0.07 - 0.12	Pass
STAP-1085	01/01/06	Co-57	4.32 ± 0.10	4.10	2.87 - 5.32	Pass
STAP-1085	01/01/06	Co-60	2.24 ± 0.16	2.19	1.53 - 2.84	Pass
STAP-1085	01/01/06	Cs-134	2.96 ± 0.19	2.93	2.05 - 3.81	Pass
STAP-1085	01/01/06	Cs-137	2.64 ± 0.20	2.53	1.77 - 3.29	Pass
STAP-1085 [f]	01/01/06	Pu-238	0.03 ± 0.01	0.07	0.05 - 0.09	Fail
STAP-1085 [e]	01/01/06	Pu-239/40	< 0.01	0.00		Pass
STAP-1085	01/01/06	Sr-90	0.77 ± 0.21	0.79	0.55 - 1.03	Pass
STAP-1085	01/01/06	U-233/4	0.03 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	U-238	0.02 ± 0.01	0.02	0.01 - 0.03	Pass
STAP-1085	01/01/06	Zn-65	3.94 ± 0.44	3.42	2.40 - 4.45	Pass

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

Lab Code[c]	Date	Analysis	Concentration [b] Laboratory result	Known Activity	Control Limits [d]	Acceptance
STW-1086	01/01/06	Am-241	1.29 ± 0.05	1.30	0.91 - 1.69	Pass
STW-1086	01/01/06	Co-57	177.10 ± 1.00	166.12	116.28 - 215.96	Pass
STW-1086	01/01/06	Co-60	158.30 ± 1.00	153.50	107.45 - 199.55	Pass
STW-1086	01/01/06	Cs-134	96.40 ± 1.50	95.10	66.57 - 123.63	Pass
STW-1086 [e]	01/01/06	Cs-137	< 0.80	0.00		Pass
STW-1086	01/01/06	Fe-55	102.50 ± 18.10	129.60	90.72 - 168.48	Pass
STW-1086	01/01/06	H-3	956.60 ± 16.50	952.01	666.41 - 1238.00	Pass
STW-1086	01/01/06	Mn-54	335.30 ± 2.20	315.00	220.50 - 409.50	Pass
STW-1086	01/01/06	Ni-63	62.90 ± 3.60	60.34	42.24 - 78.44	Pass
STW-1086	01/01/06	Pu-238	0.96 ± 0.07	0.91	0.70 - 1.30	Pass
STW-1086 [e]	01/01/06	Pu-239/40	< 0.20	0.00		Pass
STW-1086	01/01/06	Sr-90	12.80 ± 1.60	13.16	9.21 - 17.11	Pass
STW-1086	01/01/06	Tc-99	22.30 ± 1.20	23.38	16.37 - 30.39	Pass
STW-1086	01/01/06	U-233/4	2.02 ± 0.12	2.09	1.46 - 2.72	Pass
STW-1086	01/01/06	U-238	2.03 ± 0.12	2.17	1.52 - 2.82	Pass
STW-1086	01/01/06	Zn-65	249.50 ± 3.40	228.16	159.71 - 296.61	Pass
STW-1087	01/01/06	Gr. Alpha	0.59 ± 0.10	0.58	0.00 - 1.16	Pass
STW-1087	01/01/06	Gr. Beta	1.69 ± 0.07	1.13	0.56 - 1.70	Pass
STVE-1098 [e]	07/01/06	Co-57	< 0.14	0.00		Pass
STVE-1098 [g]	07/01/06	Co-60	6.89 ± 0.17	5.81	4.06 - 7.55	Pass
STVE-1098	07/01/06	Cs-134	8.46 ± 0.16	7.49	5.24 - 9.73	Pass
STVE-1098	07/01/06	Cs-137	6.87 ± 0.29	5.50	3.85 - 7.14	Pass
STVE-1098	07/01/06	Mn-54	10.36 ± 0.29	8.35	5.85 - 10.86	Pass
STVE-1098	07/01/06	Zn-65	7.46 ± 0.50	5.98	4.19 - 7.78	Pass
STSO-1099	07/01/06	Am-241	130.00 ± 11.60	105.47	73.83 - 137.11	Pass
STSO-1099	07/01/06	Co-57	784.90 ± 3.80	676.33	473.43 - 879.23	Pass
STSO-1099	07/01/06	Co-60	2.10 ± 0.90	1.98	0.00 - 5.00	Pass
STSO-1099	07/01/06	Cs-134	500.70 ± 7.40	452.13	316.49 - 587.77	Pass
STSO-1099	07/01/06	Cs-137	624.20 ± 4.90	525.73	368.01 - 683.45	Pass
STSO-1099	07/01/06	K-40	701.30 ± 3.40	604.00	423.00 - 785.00	Pass
STSO-1099	07/01/06	Mn-54	699.20 ± 5.20	594.25	415.98 - 772.52	Pass
STSO-1099	07/01/06	Ni-63	614.40 ± 17.10	672.30	470.60 - 874.00	Pass
STSO-1099	07/01/06	Pu-238	79.90 ± 5.80	82.00	57.00 - 107.00	Pass
STSO-1099 [e]	07/01/06	Pu-239/40	< 0.70	0.00		Pass
STSO-1099	07/01/06	U-233/4	150.50 ± 5.90	152.44	106.71 - 198.17	Pass
STSO-1099	07/01/06	U-238	151.60 ± 6.00	158.73	111.11 - 206.35	Pass
STSO-1099	07/01/06	Zn-65	1021.90 ± 9.20	903.61	632.53 - 1175.00	Pass
STAP-1100	07/01/06	Am-241	0.16 ± 0.03	0.14	0.10 - 0.19	Pass
STAP-1100	07/01/06	Co-57	2.17 ± 0.06	2.58	1.81 - 3.36	Pass
STAP-1100	07/01/06	Co-60	1.38 ± 0.07	1.58	1.10 - 2.05	Pass
STAP-1100	07/01/06	Cs-134	2.52 ± 0.13	3.15	2.20 - 4.09	Pass

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

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1100	07/01/06	Cs-137	1.64 ± 0.08	1.81	1.26 - 2.35	Pass
STAP-1100	07/01/06	Mn-54	1.76 ± 0.18	1.92	1.34 - 2.50	Pass
STAP-1100	07/01/06	Pu-238	0.09 ± 0.02	0.12	0.08 - 0.15	Pass
STAP-1100	07/01/06	Sr-90	0.66 ± 0.21	0.62	0.43 - 0.81	Pass
STAP-1100	07/01/06	U-233/4	0.15 ± 0.02	0.13	0.09 - 0.17	Pass
STAP-1100	07/01/06	U-238	0.13 ± 0.02	0.14	0.10 - 0.18	Pass
STAP-1100 [e]	07/01/06	Zn-65	< 0.07	0.00		Pass
STAP-1101	07/01/06	Gr. Alpha	0.08 ± 0.03	0.29	0.00 - 0.58	Pass
STAP-1101	07/01/06	Gr. Beta	0.41 ± 0.05	0.36	0.18 - 0.54	Pass
STW-1102	07/01/06	Gr. Alpha	0.76 ± 0.07	1.03	0.00 - 2.07	Pass
STW-1102	07/01/06	Gr. Beta	1.23 ± 0.06	1.03	0.52 - 1.54	Pass
STW-1103	07/01/06	Am-241	1.86 ± 0.09	2.31	1.62 - 3.00	Pass
STW-1103	07/01/06	Co-57	224.10 ± 1.20	213.08	149.16 - 277.00	Pass
STW-1103	07/01/06	Co-60	49.40 ± 0.50	47.50	33.20 - 61.80	Pass
STW-1103	07/01/06	Cs-134	112.70 ± 0.90	112.82	78.97 - 146.66	Pass
STW-1103	07/01/06	Cs-137	206.60 ± 1.40	196.14	137.30 - 254.98	Pass
STW-1103	07/01/06	Fe-55	138.40 ± 5.40	165.40	115.80 - 215.00	Pass
STW-1103	07/01/06	H-3	446.50 ± 11.80	428.85	300.20 - 557.50	Pass
STW-1103 [e]	07/01/06	Mn-54	< 0.30	0.00		Pass
STW-1103	07/01/06	Ni-63	116.70 ± 3.60	118.62	83.03 - 154.21	Pass
STW-1103	07/01/06	Pu-238	1.27 ± 0.07	1.39	0.97 - 1.81	Pass
STW-1103	07/01/06	Pu-239/40	1.67 ± 0.08	1.94	1.36 - 2.52	Pass
STW-1103	07/01/06	Sr-90	16.40 ± 1.90	15.69	10.98 - 20.40	Pass
STW-1103	07/01/06	Tc-99	29.40 ± 1.10	27.15	19.00 - 35.29	Pass
STW-1103	07/01/06	U-233/4	1.97 ± 0.08	2.15	1.50 - 2.80	Pass
STW-1103	07/01/06	U-238	1.97 ± 0.08	2.22	1.55 - 2.89	Pass
STW-1103	07/01/06	Zn-65	192.50 ± 2.40	176.37	123.46 - 229.28	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho

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

[c] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

[d] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP.

[e] Included in the MAPEP as a false positive.

[f] Difficulties with the analyses for transuranics isotopes in solid samples (Filters, Soil and vegetation), were attributed to incomplete dissolution of the samples. Soil samples were repeated, results of reanalyses: Pu-238, 53.1 ± 5.3 bq/kg. Pu-239/240, 42.4 ± 4.7 bq/kg. U-233/4, 33.3 ± 3.5 bq/kg. U-238, 35.5 ± 3.6 bq/kg.

[g] The July vegetation sample was provided in two separate geometries, (100 ml. and 500 ml.). Results reported here used the 500 ml. standard size geometry. Results for the 100 ml. geometry showed approximately a 15% higher bias.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

1.0. All activities, except gross alpha and gross beta, are decay corrected to collection time or the end of the collection period.

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$

where: x = value of the measurement;

$s = 2\sigma$ counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: < L,

where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

3.1 Individual results: For two analysis results; $x_1 \pm s_1$ and $x_2 \pm s_2$

Reported result: $x \pm s$; where $x = (1/2)(x_1 + x_2)$ and $s = (1/2)\sqrt{s_1^2 + s_2^2}$

3.2. Individual results: $< L_1$, $< L_2$ Reported result: < L, where L = lower of L_1 and L_2

3.3. Individual results: $x \pm s$, < L Reported result: $x \pm s$ if $x \geq L$; <L otherwise.

4.0. Computation of Averages and Standard Deviations

4.1 Averages and standard deviations listed in the tables are computed from all of the individual measurements over the period averaged; for example, an annual standard deviation would not be the average of quarterly standard deviations. The average $\bar{x}$ and standard deviation s of a set of n numbers $x_1, x_2 \ldots x_n$ are defined as follows:

$$\bar{x} = \frac{1}{n} \sum x \qquad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

4.2 Values below the highest lower limit of detection are not included in the average.

4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.

4.4 If all but one of the values are less than the highest LLD, the single value x and associated two sigma error is reported.

4.5 In rounding off, the following rules are followed:

4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained number s are kept unchanged. As an example, 11.443 is rounded off to 11.44.

4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.

APPENDIX C

Sampling Program and Locations

POINT BEACH NUCLEAR PLANT

Sample Type	Locations No.	Locations Codes (and Type)[a]	Collection Type (and Frequency)[b]	Analysis (and Frequency)[b]
Airborne Filters	6	E-1-4, 8, 20	Weekly	GB, GS, on QC for each location
Airborne Iodine	6	E-1-4, 8, 20	Weekly	I-131
Ambient Radiation (TLD's)	22	E-1-9, 12, 14-18, 20, 22-32, 34-36, 38,39	Quarterly	Ambient Gamma
Lake Water	5	E-1, 5, 6, 33	Monthly	GB, GS, I-131 on MC H-3, Sr-89-90 on QC
Well Water	1	E-10	Quarterly	GB, GS, H-3, Sr-89-90, I-131
Vegetation	8	E-1-4, 6, 9, 20	3x / year as available	GB, GS
Shoreline Silt	5	E-1, 5, 6, 12, 33	2x / year	GB, GS
Soil	8	E-1-4, 6, 8, 9, 20	2x / year	GB, GS
Milk	3	E-11, 40, 21	Monthly	GS, I-131, Sr-89-90
Algae	2	E-5, 12	3x / year as available	GB, GS
Fish	1	E-13	3x / year as available	GB, GS (in edible portions)

	SPECIAL COLLECTIONS AND ANALYSES	
Airborne Filters	4 per month 1 per quarter	Sr-89, Sr-90 Sr-89, Sr-90 (comp.)
Liquid	1 per month	GA, Sr-89, Sr-90
Subsoil Water	4 per quarter	GA, GB, H-3, GS
Miscellaneous Water Samples	4-5 per year	Sr-89, Sr-90

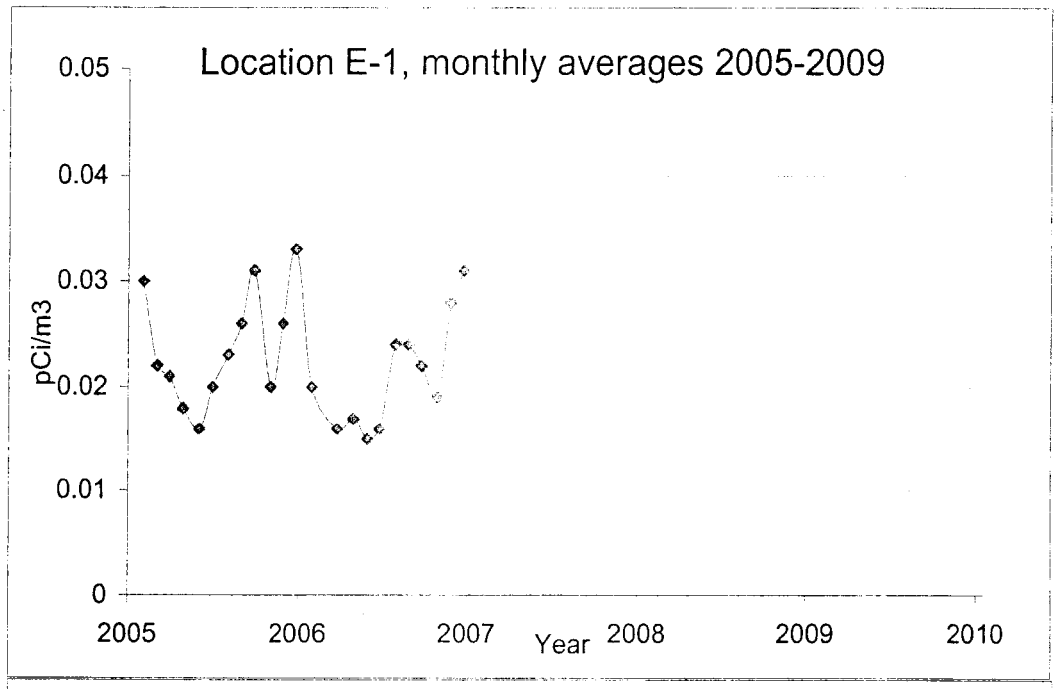
[a] Locations codes are defined in Table 2. Control Stations are indicated by (C). All other stations are indicators.

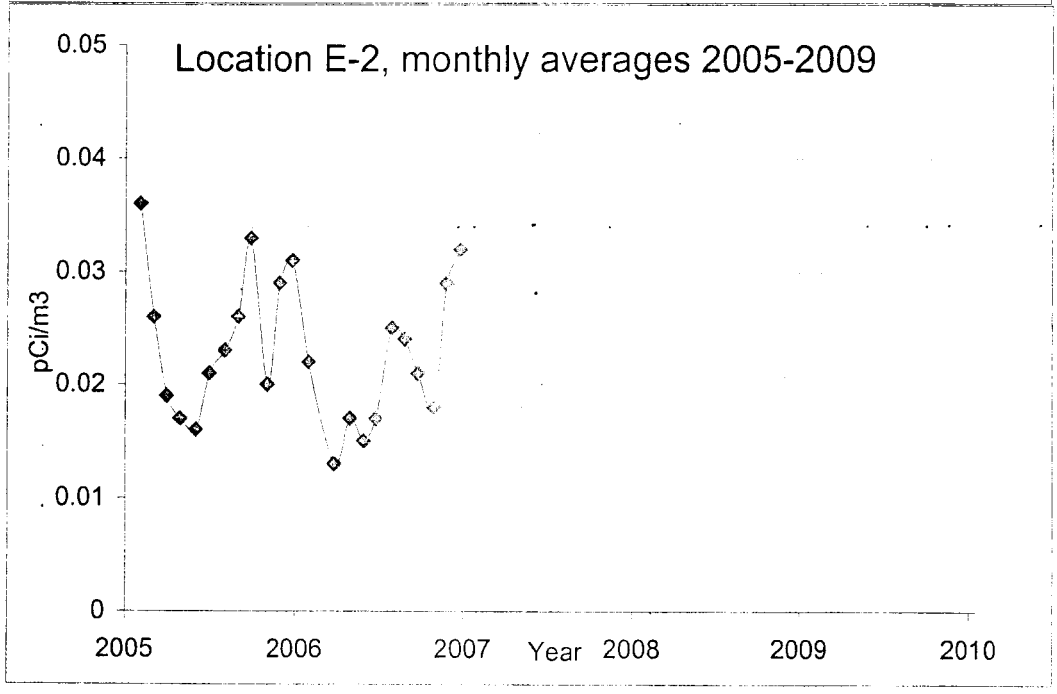
[b] Analysis type is coded as follows: GB = gross beta, GA = gross alpha, GS = gamma spectroscopy, H-3 = tritium, Sr-89 = strontium-89, Sr-90 = strontium-90, I-131 = iodine-131. Analysis frequency is coded as follows: MC = monthly composite, QC = quarterly composite.

APPENDIX D

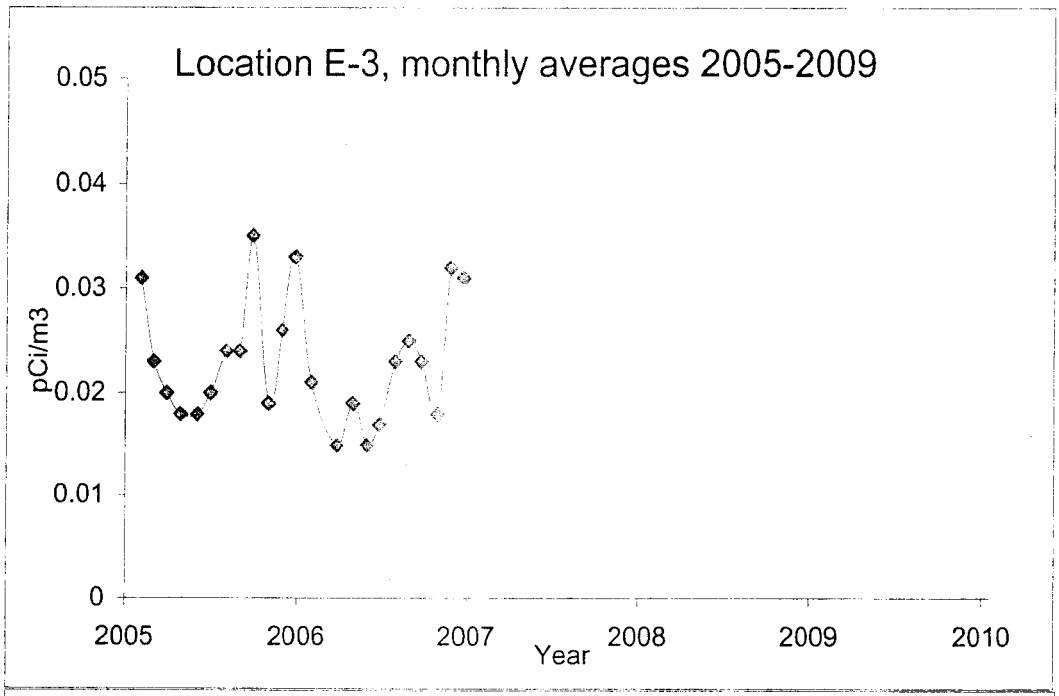
Graphs of Data Trends

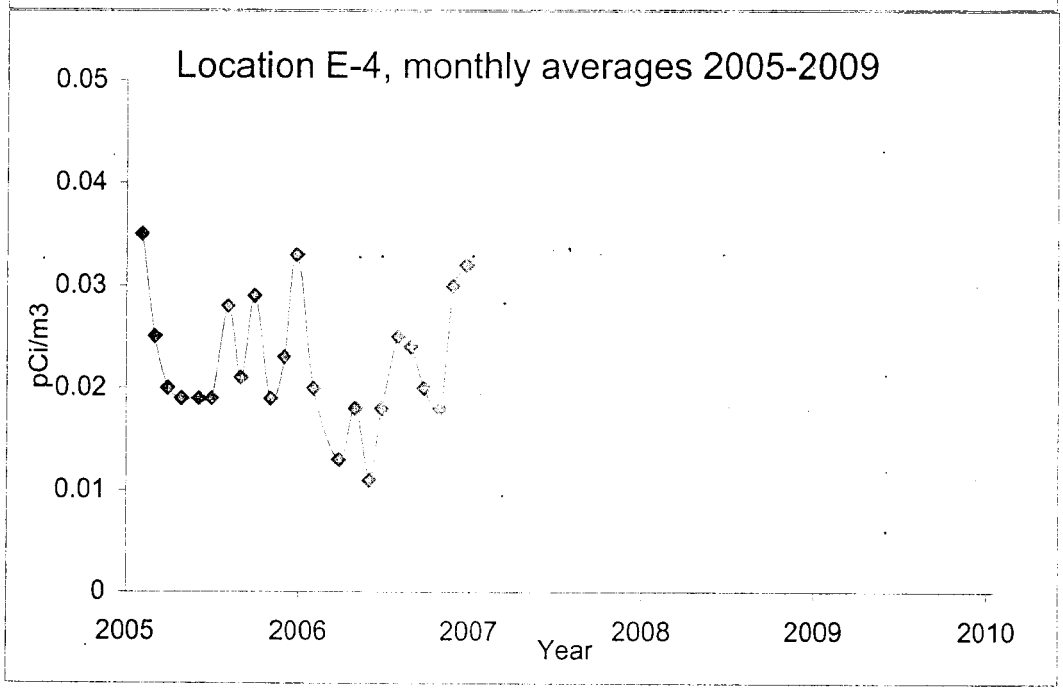
Air Particulates - Gross Beta



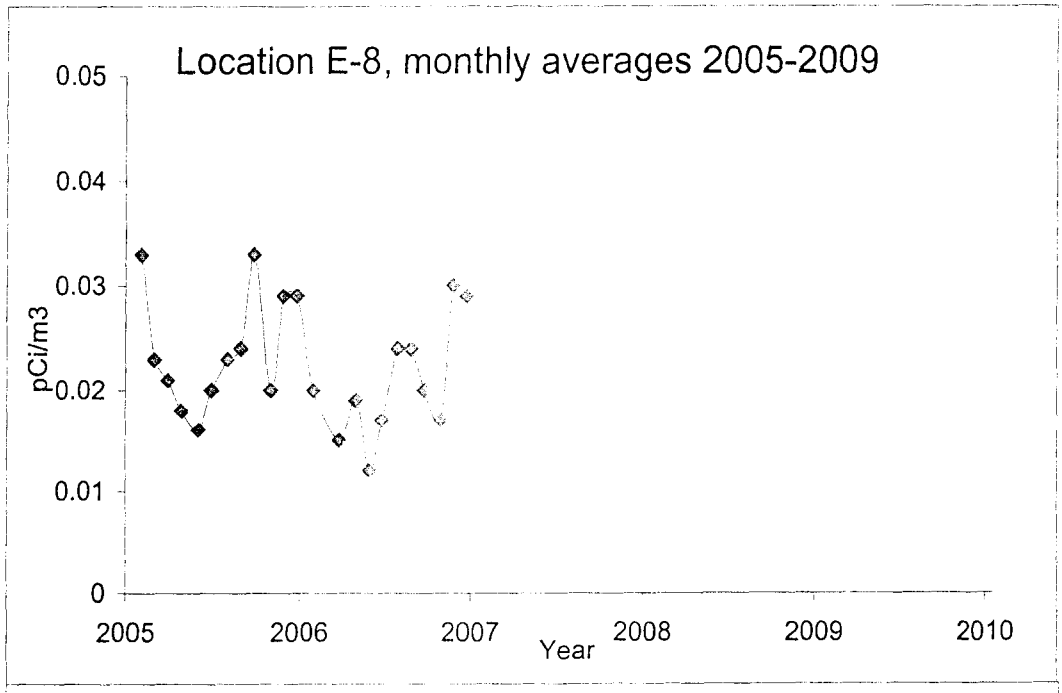


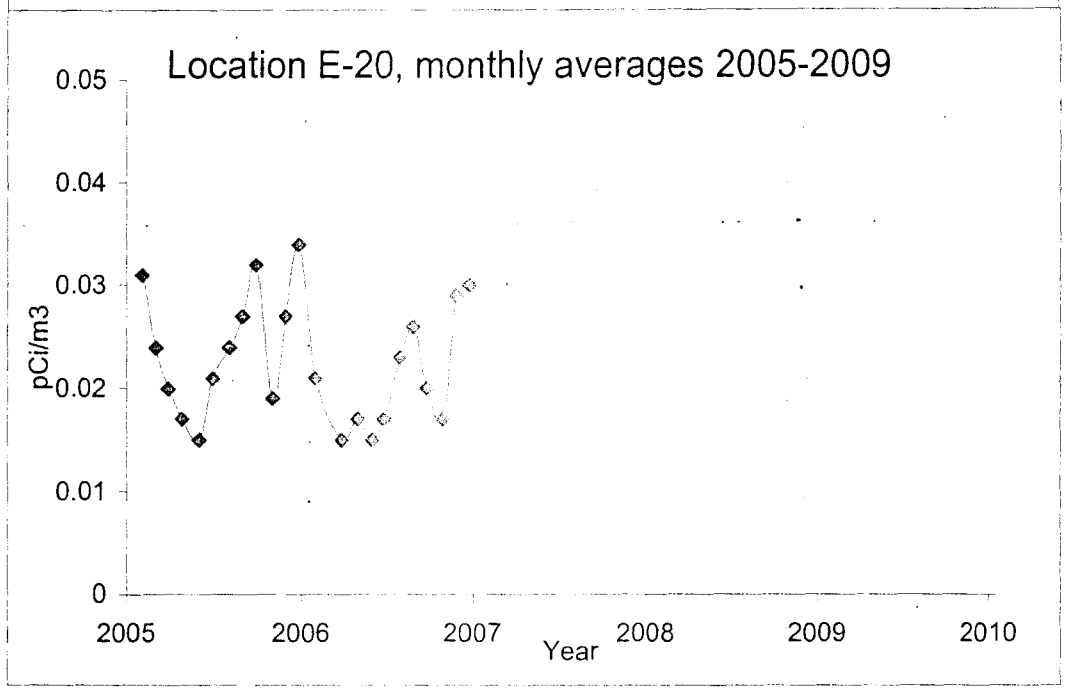
Air Particulates - Gross Beta





Air Particulates - Gross Beta





APPENDIX 2

Environmental, Inc. Midwest Laboratory
Groundwater Monitoring Results for the Point Beach Nuclear Plant
January – December 2006

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

Ms. Mary Benson
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-715
DATE: 03-09-06
SAMPLES RECEIVED: ----------

Dear Ms. Benson:

Below are the results of the analyses for tritium in five water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-01	01-25-06	ESW-402	87 ± 99	< 182
East Creek	01-25-06	ESW-403	138 ± 101	< 182
West Creek	01-25-06	ESW-404	24 ± 97	< 182
E-40 (EIC WELL)	01-25-06	ESW-405	-20 ± 95	< 182
Well #10 PLANT WELL REMP SITE E-40	01-18-06	ESW-418	46 ± 98	< 182

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

SAMPLES RETAINED THIRTY DAYS AFTER ANALYSIS

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Ms. Mary Benson
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-719
DATE: 05-04-06
SAMPLES RECEIVED: 04-03-06

Dear Ms. Benson:

Below are the results of the analyses for tritium in five water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-01	03-30-06	ESW-1933	168 ± 96	< 181
East Creek	03-30-06	ESW-1934	195 ± 97	-
Duplicate of 1934	03-30-06	ESW-1935	264 ± 99	-
West Creek	03-30-06	ESW-1936	140 ± 95	< 181
E-40 EIC	03-30-06	EWW-1937	46 ± 91	< 181
Warehouse 6	03-30-06	EWW-1938	19 ± 90	< 181

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

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Mr. Donald Schuelke
Point Beach Nuclear Plant
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LABORATORY REPORT NO.: 8006-100-722
DATE: 05-30-06
SAMPLES RECEIVED: 04-28-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in six water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	04-26-06	ESW-2839	24 ± 67	< 133
East Creek	04-26-06	ESW-2840	131 ± 73	<133
West Creek	04-26-06	ESW-2841	63 ± 69	< 133
EIC	04-26-06	EWW-2842	-30 ± 651	< 133
Duplicate of 2842	04-26-06	EWW-2843	15 ± 67	< 133
EIC Bog	04-26-06	ESW-2844	355 ± 83	-
Northside Bog	04-26-06	ESW-2845	163 ± 74	-

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

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Mr. Donald Schuelke
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-723
DATE: 06-06-06
SAMPLES RECEIVED: 05-30-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in six water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
U-1 Facade	05-17-06	EWW-3532	421 ± 88	-
U-2 Facade	05-17-06	EWW-3533	50 ± 71	< 130
E-001	05-24-06	ESW-3543	93 ± 73	< 130
East Creek	05-24-06	ESW-3544	233 ± 80	-
West Creek	05-24-06	ESW-3545	64 ± 72	< 130
EIC	05-25-06	ESW-3546	39 ± 70	< 130

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

SA Coorlim
Quality Assurance

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

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Mr. Donald Schuelke
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-729
DATE: 08-03-06
SAMPLES RECEIVED: 07-05-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in five water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	06-28-06	ESW-4334	185 ± 78	-
East Creek	06-28-06	ESW-4335	209 ± 79	-
West Creek	06-28-06	ESW-4336	138 ± 76	< 139
EIC	06-28-06	EWW-4337	61 ± 77	< 142
E-WHSE 6	06-29-06	EWW-4338	1 ± 74	<142

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

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Mr. Donald Schuelke
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-731
DATE: 09-05-06
SAMPLES RECEIVED: 07-31-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	07-26-06	ESW-5236	169 ± 80	-
East Creek	07-26-06	ESW-5237	123 ± 87	<155
West Creek	07-26-06	ESW-5238	113 ± 77	< 137
EIC	07-26-06	EWW-5239	94 ± 86	< 155

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

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Mr. Donald Schuelke
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-734
DATE: 10-05-06
SAMPLES RECEIVED: 09-05-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	08-30-06	ESW-6101	11 ± 106	<175
East Creek	08-30-06	ESW-6102	176 ± 112	-
West Creek	08-30-06	ESW-6103	133 ± 111	< 175
EIC	08-30-06	EWW-6104	71 ± 83	< 151

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
For Bronia Grob, M.S.
Laboratory Manager

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Mr. Donald Schuelke
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-738
DATE: 11-06-06
SAMPLES RECEIVED: 09-29-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	09-27-06	ESW-6627	60 ± 85	<157
East Creek	09-27-06	ESW-6628	0 ± 83	<157
West Creek	09-27-06	ESW-6629	124 ± 88	< 157
EIC	09-27-06	EWW-6630	126 ± 88	< 157

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

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Mr. Donald Schuelke
Point Beach Nuclear Plant
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-744
DATE: 12-07-06
SAMPLES RECEIVED: 10-30-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	10-26-06	ESW-7923	13 ± 95	<191
East Creek	10-26-06	ESW-7924	-74 ± 92	<191
Duplicate of 7924	10-26-06	ESW-7925	20 ± 95	<191
West Creek	10-26-06	ESW-7926	-100 ± 91	<191
EIC	10-26-06	EWW-7927	-76 ± 92	<191

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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ph. (847) 564-0700 • fax (847) 564-4517

Mr. Donald Schuelke
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-745
DATE: 12-28-06
SAMPLES RECEIVED: 12-04-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001	11-29-06	ESW-8812	60 ± 89	<176
Duplicate of 8812	11-29-06	ESW-8813	152 ± 93	<176
East Creek	11-29-06	ESW-8814	203 ± 95	-
West Creek	11-29-06	ESW-8815	64 ± 90	<176
EIC	11-29-06	EWW-8816	38 ± 89	<176

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
for Bronia Grob, M.S.
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Mr. Gary Correll
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-749
DATE: 02-05-07
SAMPLES RECEIVED: 12-29-06

Dear Mr. Schuelke:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
CREEK @ E-001 (MET TOWER)	12-27-06	ESW-9389	-33 ± 109	<181
Duplicate of 9389	12-27-06	ESW-9390	-49 ± 108	<181
East Creek	12-27-06	ESW-9391	-7 ± 81	<154
West Creek	12-27-06	ESW-9392	5 ± 81	<154
EC EIC WELL	12-27-06	EWW-9393	-35 ± 79	<154

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
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Mr. Kjell Johansen
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO. 8006-100-733
DATE: 10-02-2006
SAMPLES RECEIVED: 09-26-2006
PURCHASE ORDER NO.:

Below are results of analyses for tritium on twenty-five ground water samples collected September 25, 2006.

Sample Description	Lab Code	Concentration, H-3 (pCi/L)
SSD E-10	EWW-6525	422 ± 95
SSD F-05	EWW-6526	470 ± 97
SSD E-22	EWW-6527	550 ± 100
SSD F-14	EWW-6528	506 ± 98
SSD B-14	EWW-6529	1043 ± 116
SSD E-13	EWW-6530	467 ± 97
MH-01	EWW-6531	280 ± 90
MH-02	EWW-6532	296 ± 90
MH-03	EWW-6533	252 ± 88
MH-05	EWW-6534	350 ± 92
MH-05 (Duplicate)	EWW-6535	271 ± 89
MH-09	EWW-6536	167 ± 85
MH-14	EWW-6537	255 ± 89
MH-16	EWW-6538	181 ± 86
MH-19	EWW-6539	277 ± 89
MH-20	EWW-6540	< 157
GW-01 (Creeks by EIC)	EWW-6541	190 ± 86
GW-02 (East Creek)	EWW-6542	< 157
GW-03 (West Creek)	EWW-6543	< 157
GW-04 (EIC Well)	EWW-6544	< 157
GW-05 (Warehouse 6)	EWW-6545	< 157
GW-06 (SBCC Well)	EWW-6546	< 157
GW-07 (North Side Bog)	EWW-6547	< 157
S-01 (Beach Drains)	EWW-6548	181 ± 86
S-06 (Beach Drains)	EWW-6549	328 ± 91
S-07 (Beach Drains)	EWW-6550	172 ± 85

The error given is the probable counting error at 95 % confidence level. The less than, (<), value is based on 4.66 sigma counting error for background sample.

Sincerely,

Bronia Grob

Bronia Grob,
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

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an Allegheny Technologies Co.

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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.:	8006-100-752
DATE:	03-08-2007
SAMPLES RECEIVED:	02-22-2007
PURCHASE ORDER NO.:	

Below are the results of the analyses for tritium in one water sample.

Sample Description	Subsurface Drainage SSD-A15
Collection Date	09-28-06
Lab Code	EXW-1013

Isotope	Concentration / LLD (pCi/L)	
H-3	881 ± 130	< 193

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

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Quality Assurance

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Mr. Gene F. LeClair
Radiation Protection Supervisor
Point Beach Nuclear Plant
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LABORATORY REPORT NO. 8006-100-741
DATE: 12-04-2006
SAMPLES RECEIVED: 10-23-2006
PURCHASE ORDER NO.:

Below is the result of the analysis for tritium on one precipitation sample collected October 19, 2006.

Sample Description	Lab Code	Concentration, H-3 (pCi/L)	
			MDA
Site Boundary Control Center E-02	EP-7633	-100 ± 68	< 147

The error given is the probable counting error at 95 % confidence level. The less than, (<), value is based on 4.66 sigma counting error for background sample.

Cc: K. Johansen

Sincerely,

Bronia Grob,
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance