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Technical Specification 6.9.1.e

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

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Annual Radiological Environmental Operating Report – 2011

Enclosed is a copy of the Annual Radiological Environmental Operating Report for calendar year 2011 for Oyster Creek Nuclear Generating Station. This submittal is made in accordance with Oyster Creek Nuclear Generating Station Technical Specification 6.9.1.e, "Annual Radiological Environmental Operating Report."

If any further information or assistance is needed, please contact Mike Ford at 609-971-2432.

Sincerely,



Michael J. Massaro
Vice President, Oyster Creek Nuclear Generating Station

Enclosure

cc: Administrator, USNRC Region I
USNRC Senior Project Manager, Oyster Creek
USNRC Senior Resident Inspector, Oyster Creek
Craig Stewart, American Nuclear Insurers

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NRK

Docket No: 50-219

OYSTER CREEK GENERATING STATION UNIT 1

**Annual Radiological
Environmental Operating Report**

1 January Through 31 December 2011

**Prepared By
Teledyne Brown Engineering
Environmental Services**

ExelonSM

Nuclear

**Oyster Creek Generating Station
Forked River, NJ 08731**

April 2012

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program (REMP) conducted for the Oyster Creek Generating Station (OCGS) by Exelon Nuclear covers the period 01 January 2011 through 31 December 2011. During that time period, 1622 analyses were performed on 1244 samples. In assessing all the data gathered for this report and comparing these results with historical data, it was concluded that the operation of OCGS had no adverse radiological impact on the environment.

On March 11, 2011 an earthquake off the Japanese islands produced a massive tsunami that caused a nuclear accident at four of the six Fukushima Daiichi reactors. In planning for the potential radioactive plume reaching the United States, Exelon Nuclear increased the sampling frequency and added additional analyses of select media from pathways that were expected to be the most sensitive to any increase in ambient radiation levels. Low level I-131 analyses and gamma spectroscopy analyses were performed on air particulates, air iodine, and milk, as appropriate.

The resulting radioactive plume was first detected in the environs of Oyster Creek Generating Station on March 16, 2011. The final date of positive detection was April 13, 2011. The radionuclide identified was Iodine-131. Maximum activity levels found by media were 64 E-3 pCi/m^3 for air iodine. Samples collected were compared to offsite control locations to verify that these positive detections were not attributable to licensed activities. All other radionuclides analyzed for were below MDC (Minimum Detectable Concentration).

The radioactive half-life of I-131 is about 8 days. This short half-life allowed the affects of this radioactive plume to subside over about 4 weeks. As of April 14, 2011 no further impacts from the Fukushima Daiichi accident was evident.

REMP designated surface water samples were analyzed for concentrations of tritium and gamma emitting nuclides. No tritium and no fission or activation products were detected in any of the surface water samples collected as part of the Radiological Environmental Monitoring Program during 2011.

REMP designated drinking water samples were analyzed for concentrations of gross beta, tritium, I-131, and gamma emitting nuclides. The preoperational environmental monitoring program did not include analysis of drinking water for gross beta. No tritium, I-131, or fission or activation products were detected in any of the drinking water samples collected.

REMP designated groundwater samples were analyzed for concentrations of tritium and gamma emitting nuclides. No tritium and no fission or activation products were detected in REMP groundwater samples.

Fish (predator and bottom feeder), clams, crabs, and sediment samples were analyzed for concentrations of gamma emitting nuclides. No OCGS-produced

fission or activation products were detected in fish, clams and crabs. Cesium-137 was not detected in any sediment samples.

Air particulate samples were analyzed for concentrations of gross beta, gamma emitting nuclides, Strontium-89, and Strontium-90. Gross beta and cosmogenic Be-7 was detected at levels consistent with those detected in previous years. No fission or activation products were detected. Strontium-89 and Strontium-90 analyses were performed on quarterly composites of air particulate samples. All Strontium-89 and Strontium-90 results were below the minimum detectable activity.

High sensitivity I-131 analyses were performed on weekly air samples. All results were less than the minimum detectable concentration with the exception of 24 samples which were positive for I-131. These positive results are directly attributed to the Fukushima event in March of 2011.

Vegetation samples were analyzed for gamma emitting nuclides, Strontium-89, and Strontium-90. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. All Strontium-89 results were below the minimum detectable activity. Strontium-90 activity was detected at levels consistent with those detected in previous years at both control and indicator stations, and can be attributed to historical nuclear weapons testing and the Chernobyl accident.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. The maximum dose to any member of the public attributable to radioactive effluents and direct radiation from the OCGS was less than the 25 mrem/year limit established by the United States Environmental Protection Agency (EPA).

II. Introduction

The Oyster Creek Generating Station (OCGS), consisting of one boiling water reactor owned and operated by Exelon, is located on the Atlantic Coastal Plain Physiographic Province in Ocean County, New Jersey, about 60 miles south of Newark, 9 miles south of Toms River, and 35 miles north of Atlantic City. It lies approximately 2 miles inland from Barnegat Bay. The site, covering approximately 781 acres, is situated partly in Lacey Township and, to a lesser extent, in Ocean Township. Access is provided by U.S. Route 9, passing through the site and separating a 637-acre eastern portion from the balance of the property west of the highway. The station is about ¼ mile west of the highway and 1¼ miles east of the Garden State Parkway. The site property extends about 2½ miles inland from the bay; the maximum width in the north-south direction is almost 1 mile. The site location is part of the New Jersey shore area with its relatively flat topography and extensive freshwater and saltwater marshlands. The South Branch of Forked River runs across the northern side of the site and Oyster Creek partly borders the southern side.

A preoperational Radiological Environmental Monitoring Program (REMP) for OCGS was established in 1966, and continued for two years prior to the plant becoming operational in 1969. This report covers those analyses performed by Teledyne Brown Engineering (TBE), Mirion Technologies, and Environmental Inc. (Midwest Labs) on samples collected during the period 01 January 2011 through 31 December 2011.

A. Objectives of the REMP

The objectives of the REMP are to:

1. Determine whether any significant increase occurs in the concentration of radionuclides in major pathways.
2. Identify and evaluate the buildup, if any, of radionuclides in the local environment, or any changes in normal background radiation levels.
3. Verify the adequacy of the plant's controls for the release of radioactive materials.
4. Fulfill the obligations of the radiological surveillance sections of Oyster Creek's Offsite Dose Calculation Manual (ODCM).

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

- 1. Identifying significant exposure pathways.**
- 2. Establishing baseline radiological data for media within those pathways.**
- 3. Continuously monitoring those media before and during Station operation to assess Station radiological effects (if any) on man and the environment.**

C. Discussion

1. General Program

The Radiological Environmental Monitoring Program (REMP) was established in 1966, three years before the plant became operational. This preoperational surveillance program was established to describe and quantify the radioactivity, and its variability, in the area prior to the operation of OCGS. After OCGS became operational in 1969, the operational surveillance program continued to measure radiation and radioactivity in the surrounding areas.

A variety of environmental samples are collected as part of the REMP at OCGS. The selection of sample types is based on the established pathways for the transfer of radionuclides through the environment to humans. The selection of sampling locations is based on sample availability, local meteorological and hydrological characteristics, local population characteristics, and land usage in the area of interest. The selection of sampling frequencies for the various environmental media is based on the radionuclides of interest, their respective half-lives, and their behavior in both the biological and physical environment.

2. Preoperational Surveillance Program

The federal government requires nuclear facilities to conduct radiological environmental monitoring prior to constructing the facility. This preoperational surveillance program is aimed at collecting the data needed to identify pathways, including selection of the radioisotope and sample media combinations to be included in the environmental surveillance program conducted after facility

operation begins. Radiochemical analyses performed on the environmental samples should include not only those nuclides expected to be released during facility operation, but should also include typical radionuclides from nuclear weapons testing and natural background radioactivity. All environmental media with a potential to be affected by facility operation as well as those media directly in the major pathways, should be sampled on at least an annual basis during the preoperational phase of the environmental surveillance program.

The preoperational surveillance design, including nuclide/media combinations, sampling frequencies and locations, collection techniques, and radioanalyses performed, should be carefully considered and incorporated in the design of the operational surveillance program. In this manner, data can be compared in a variety of ways (for example, from year to year, location to location, etc.) in order to detect any radiological impact the facility has on the surrounding environment. Data collection during the preoperational phase should be planned to provide a comprehensive database for evaluating any future changes in the environment surrounding the nuclear facility.

OCGS began its preoperational environmental surveillance program three years before the plant began operating in 1969. Data accumulated during those early years provide an extensive database from which environmental monitoring personnel are able to identify trends in the radiological characteristics of the local environment. The environmental surveillance program at OCGS will continue after the plant has reached the end of its economically useful life and decommissioning has begun.

3. Consideration of Plant Effluents

Effluents are strictly monitored to ensure that radioactivity released to the environment is as low as reasonably achievable and does not exceed regulatory limits. Effluent control includes the operation of monitoring systems, in-plant and environmental sampling and analyses programs, quality assurance programs for effluent and environmental programs, and procedures covering all aspects of effluent and environmental monitoring.

Both radiological environmental and effluent monitoring indicate that the operation of OCGS does not result in significant radiation exposure of the people or the environment surrounding OCGS and is well below the applicable levels set by the Nuclear Regulatory

Commission (NRC) and the EPA.

There were liquid radioactive effluent releases during 2011 of concentrations of tritium too low to detect at an LLD of 200 picocuries per liter (pCi/L) at the NJPDES permitted main condenser outfall. The releases were part of nearly continuous pumping of groundwater at approximately 70 gpm containing low levels of tritium and no detectable gamma. Exelon and the State of New Jersey Department of Environmental Protection (NJDEP) agreed to this remediation action after a period of natural attenuation to address concentrations of tritium in groundwater. Well 73 and supporting equipment and piping were installed to pump groundwater to the intake structure at the inlet of the main circulating water pumps. Provisions were established for both batch and continuous releases of groundwater. There was one batch release in August of 2011 and nearly continuous releases for the entire year of 2011. Nearly continuous releases occurred from January 1, 2011 through December 31, 2011 with a total of $3.28E+07$ gallons of groundwater pumped resulting in $9.63E-01$ Ci of tritium released to the discharge canal. The dose to the most limiting member of the public due to the release of groundwater was $4.59E-06$ mrem.

Utilizing gaseous effluent data, the maximum hypothetical dose to any individual in the southeast sector of the plant (sector of predominant wind direction) during 2011 was calculated using a mathematical model, which is based on the methods defined by the U.S. Nuclear Regulatory Commission. These methods accurately determine the types and quantities of radioactive materials being released to the environment.

The maximum hypothetical calculated organ dose (Bone) from iodines and particulates to any individual due to gaseous effluents was $4.42E-01$ mrem (0.442 mrem) which was approximately 3.14 percent of the annual limit. The maximum hypothetical calculated whole body dose to any individual due to noble gas effluents was $3.46E-03$ mrem (0.00346 mrem) which was $6.92E-04$ percent of the annual limit.

The total maximum hypothetical organ dose (Bone) due to all radiological effluents of $4.42E-01$ mrem (0.442 mrem) received by any individual from gaseous effluents from the Oyster Creek Generating Station for the reporting period is more than 678 times lower than the dose the average individual in the Oyster Creek area received from background radiation, including that from radon,

during the same time period. The background radiation dose averages approximately 300 mrem per year in the Central New Jersey area, which includes approximately 200 mrem/year from naturally occurring radon gas.

During 2011, the maximum direct radiation dose to the most likely exposed MEMBER OF THE PUBLIC potentially attributable to the operation of Oyster Creek beyond the site boundary in the southeast sector, as shown by offsite thermoluminescent dosimeter (TLD) readings at stations 66, 109 and 11, was less than the dose at the control locations.

Environmental sampling of airborne iodine and particulates showed no radioactivity attributable to the operation of OCGS.

III. Program Description

A. Sample Collection

Samples for the OCGS REMP were collected for Exelon by on-site personnel and Normandeau Associates, Incorporated. This section describes the general collection methods used to obtain environmental samples for the OCGS REMP in 2011. Sample locations and descriptions can be found in Tables B-1 and B-2, and Figures B-1, B-2, and B-3, Appendix B. The collection procedures are listed in Table B-3.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, drinking water, groundwater, fish, clams, crabs, and sediment. One gallon water samples were collected monthly from two surface locations (33 and 94), semiannually at two surface water locations (23 and 24), monthly from six drinking water wells (1N, 1S, 37, 38, 39, and 114) and quarterly from 2 groundwater stations (MW-24-3A and W-3C). Control locations were 94 and 37. All samples were collected in plastic bottles, which were rinsed at least twice with source water prior to collection. Fish samples comprising the flesh of two groups, bottom feeder and predator, were collected semiannually at three locations (33, 93 and 94 (control)). Clams were collected semiannually from three locations (23, 24, and 94 (control)). Two annual crab samples were collected from two locations (33 and 93). Sediment samples were collected at four locations semiannually (23, 24, 33, and 94 (control)).

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate and airborne iodine. Airborne iodine and particulate samples were collected and analyzed weekly at eight locations (C, 3, 20, 66, 71, 72, 73, and 111). The control location was C. Airborne iodine and particulate samples were obtained at each location, using a vacuum pump with charcoal and glass fiber filters attached. The pumps were run continuously and sampled air at the rate of approximately one cubic foot per minute. The filters were replaced weekly and sent to the laboratory for analysis.

Terrestrial Environment

The terrestrial environment was evaluated by performing radiological analyses on samples of garden vegetation. No commercial dairy operations and no dairy animals producing milk for human consumption are located within a 5 mile radius of the plant. Therefore, vegetation samples were collected in lieu of milk. Vegetation samples were collected, when available, at four locations (35, 36, 66, and 115). Station 36 was the control location. All samples were collected in 18" x 24" new unused plastic bags and shipped promptly to the laboratory.

Ambient Gamma Radiation

Direct radiation measurements were made using Panasonic Model 814 calcium sulfate (CaSO_4) thermoluminescent dosimeters (TLD). The TLDs were placed on and around the OCGS site and were categorized as follows:

A site boundary ring consisting of 19 locations (1, T1, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 112, and 113) near the site boundary.

An intermediate distance ring consisting of 31 locations (4, 5, 6, 8, 9, 22, 46, 47, 48, 68, 73, 74, 75, 78, 79, 82, 84, 85, 86, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, and 110) extending to approximately 5 miles from the site designed to measure possible exposures to close-in population.

Special interest stations consisting of 9 locations (3, 11, 71, 72, 81, 88, 89, 90, and 92) representing special interest areas such as population centers, state parks, etc.

Background (Control) stations consisting of two locations (C and 14) greater than 20 miles distant from the site.

Indicator TLDs were placed systematically, with at least one station in each of 16 meteorological compass sectors in the general area of the site boundary. TLDs were also placed in each meteorological sector in the 1 to 5 mile range, where reasonable highway access would permit, in areas of public interest and population centers. Background locations were located greater than twenty miles distant from the OCGS and generally in an upwind direction from the OCGS.

Two TLDs – each comprised of three CaSO_4 thermoluminescent phosphors enclosed in plastic – were placed at each location approximately three to eight feet above ground level. The TLDs were exchanged quarterly and sent to Mirion Technologies for analysis.

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and Environmental Inc. (Midwest Labs) to analyze the environmental samples for radioactivity for the OCGS REMP in 2011. The analytical procedures used by the laboratories are listed in Table B-3.

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

1. Concentrations of beta emitters in air particulates and drinking water.
2. Concentrations of gamma emitters in surface, drinking water, groundwater, fish, clams, crabs, sediment, air particulates, and vegetation.
3. Concentrations of tritium in REMP designated surface, drinking water and groundwater.
4. Concentrations of I-131 in air iodine cartridges and drinking water.
5. Concentrations of strontium in air particulates and vegetation.
6. Ambient gamma radiation levels at various locations around the OCGS.

C. Data Interpretation

For trending purposes, the radiological and direct radiation data collected during 2011 were compared with data from past years. The results of environmental sampling show that radioactivity levels have not increased from the background radioactivity detected prior to the operation of OCGS. The operation of OCGS continues to have no measurable radiological impact upon the environment.

Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criterion for the presence of activity. All analyses were designed to achieve the required OCGS detection capabilities for environmental sample analysis.

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

2. Net Activity Calculation and Reporting of Results

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

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

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

For fish eight nuclides: K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65,

Cs-134, and Cs-137 were reported.

For clams eight nuclides: K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Cs-134, and Cs-137 were reported.

For crabs eight nuclides: K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Cs-134, and Cs-137 were reported.

For sediment seven nuclides: Be-7, K-40, Mn-54, Co-58, Co-60, Cs-134, and Cs-137 were reported.

For air particulate six nuclides: Be-7, Mn-54, Co-58, Co-60, Cs-134, and Cs-137 were reported.

For air iodine cartridges one nuclide: I-131 was reported.

For vegetation seven nuclides: Be-7, K-40, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

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

D. Program Exceptions

For 2011 the OCGS REMP had a sample recovery rate in excess of 99%. Exceptions are listed below:

- 1. January 5, 2011, air particulate/air iodine stations 3 and 20 were analyzed as 14 days samples instead of normal weekly sampling due to a snow storm the previous week preventing filter change.**
- 2. Drinking water station 39 (Lacey Twp., MUA Pump Station) was not collected January 1, 2011 through April 6, 2011. The station was off line for this period of time.**
- 3. Week of April 24, 2011, One TLD from Station 63 was missing and one TLD from Station 99 was missing.**
- 4. Week of July 17, 2011, no samples were collected at vegetation station 66. Crops were too small and even a collection of the minimum amount required by the lab would have not allowed any crops for later in the season.**
- 5. Starting with the July 2011 drinking water composite sample, the**

station changed the LLD for I-131 from 15 pCi/l to 1 pCi/l for REMP drinking water samples. The July drinking water composites had been collected when the vendor lab was notified to make this change. The change in LLD for I-131 requires a different analysis to be performed which uses more sample to obtain the lower LLD. The vendor used the entire sample for two out of the five drinking water sample locations prior to performing gross beta analysis. This resulted in gross beta not being performed for sample locations 1N and 1S for the month of July.

6. Week of August 14, 2011, vegetation station 66, samples less than 1000 grams were collected because the plants were small and to collect the full amount would not have allowed samples for the next month. Enough mass was collected to complete the required analysis.
7. Week of August 28, 2011, air particulate/air iodine stations 71, 73, 66 and C all had shorter run times than usual. The stations are believed to have lost power for some time during hurricane Irene. All of the samples were valid and sent to the lab for analysis.
8. Week of August 28, 2011, drinking water station 39 (Lacey Twp., MUA Pump Station) was out of service due to hurricane Irene.
9. September 7, 2011, air particulate/air iodine station 20 vacuum pump was not running during the time of collection. Sample pump was replaced and verified to be functional. All of the samples were valid and sent to the lab for analysis.
10. Week of September 11, 2011, only one species of vegetation was collected at Station 66. There were no other samples collected at this garden due to crop failure, most likely due to too much rain. This was the last sample at this location for the year. Only two species were collected at Stations 35 and 115. The cabbage was done at both locations.
11. September 22, 2011, the pump at air particulate/air iodine station C was changed out because the vacuum gauge was reading low.
12. Drinking water station 38 (Ocean Township MUA Pumping Station) was not collected October 27, 2011 through December 31, 2011. The station was off line for this time period.
13. The December 2011 Drinking water composite for sample location 1N was only two weeks due to the 1N location being out of service

for upgrades between December 18, 2011 and December 31, 2011. Due to insufficient sample volume, the I-131 (Low Level) analysis was not performed.

***NOTE:** Per the Oyster Creek ODCM, if garden vegetation samples are unobtainable due to any legitimate reason, the missed sample will be documented in the annual report, with no further actions necessary.

Program exceptions are tracked and investigated to understand the causes of the program exception. Sampling and maintenance errors are reviewed with the personnel involved to prevent recurrence.

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

E. Program Changes

Starting in July, I-131 is now being analyzed in drinking water by the low level method to detect down to 1 pCi/L.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken via grab sample methodology at two locations (33 and 94) on a monthly schedule. In addition, grab samples were collected semi-annually at two locations (23 and 24). Of these locations 23, 24, and 33, located downstream, could be affected by Oyster Creek's effluent releases. The following analyses were performed:

Tritium

Samples from all locations were analyzed for tritium activity (Table C-1.1, Appendix C). No tritium activity was detected. Data from this year indicates that surface water tritium concentrations remain very low and not significantly different from recent previous years.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting

nuclides (Table C-1.2, Appendix C). All nuclides were less than the MDC.

Surface water sampling began in 1966, and the samples were analyzed for tritium as well as other radioactivity. During this preoperational program, tritium was detected at an average concentration of $1.05\text{E}+3$ pCi/liter. At that time, counting instrumentation was not as sensitive as it now, and the minimum detectable concentration was $1\text{E}+3$ pCi/liter versus $2\text{E}+2$ pCi/liter used today. By comparing the 2011 sampling results to the decay corrected average preoperational concentration reported in the 2007 Annual Radiological Environmental Operating Report ($1.11\text{E}+2$ pCi/liter), it can be seen that the inventory of tritium in the environment is due to fallout from past atmospheric nuclear weapons testing and Chernobyl, and is decreasing with time.

2. Drinking water

Monthly samples were composited from monthly grab samples from six drinking water wells (1N, 1S, 37, 38, 39, and 114). Station 1, because it is located on the OCGS site, could potentially be affected by radioactive releases from the plant. Station 1 was split into two separate locations, 1N and 1S. Station 38, the Ocean Township Municipal Utility Authority Well, could potentially be affected by effluent releases from the OCGS. Given its distance from the facility (1.6 miles) and depth (approximately 360 feet), however, the probability of any OCGS related impacts is very small. Stations 37 and 39, Lacey Township Municipal Utility Authority wells, are not likely to be impacted by effluents from the OCGS. These wells are located generally up-gradient of the regional groundwater flow direction (southeast). In addition, because of their depth (> 200 feet) and distance from the site (2.2 and 3.5 miles respectively), they are unlikely to be affected by OCGS operations. The following analyses were performed:

Tritium

Monthly samples from all locations were analyzed for tritium activity (Table C-II.1, Appendix C). No tritium activity was detected.

Drinking water was sampled during the preoperational program and throughout the 42 years of the plant's operational program. Tritium sampling results during the preoperational years, yielded results all less than the minimum detectable concentration of $1\text{E}+3$ pCi/liter. 2011 results are all less than the current MDC of 200 pCi/liter.

Gross Beta

Monthly samples from all locations were analyzed for concentrations of total gross beta activity (Tables C-II.2, Appendix C). Gross beta was detected in 34 of 65 samples, and is expected due to natural sources and fallout residual from previous bomb testing. The values ranged from 1.8 to 5.4 pCi/l. The investigation level for gross beta in water is 15 pCi/l. Gross beta was detected at about the same concentration in both control and sample locations.

Iodine

Starting in July, monthly samples from all locations were analyzed for I-131 by the low level method to detect down to 1 pCi/L (Table C-II.3, Appendix C). All results were less than the MDC.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C-II.3, Appendix C). All nuclides were less than the MDC.

3. Groundwater

The following analyses were performed:

Tritium

Samples from all locations were analyzed for tritium activity (Table C-III.1, Appendix C). No tritium activity was detected.

Gamma Spectrometry

Samples from both locations were analyzed for gamma emitting nuclides (Table C-III.2, Appendix C). All nuclides were less than the MDC.

4. Fish

Fish samples comprised of bottom feeder (winter flounder, summer flounder, and tautog) and predator (American eel, jack, sea trout, striped bass, sea bass, bluefish, trigger fish, and white perch) were collected at three locations (33, 93, and 94) semiannually. Locations 93 and 33 could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portions of fish samples from three locations were analyzed for gamma emitting nuclides (Table C-IV.1, Appendix C). Naturally occurring potassium-40 was found at all stations and ranged from 2,440 to 5,440 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

No fish were sampled during the preoperational sampling program for OCGS.

5. Clams and Crabs

Clams were collected at three locations (23, 24, and 94) semiannually. Crabs were collected at two locations (33 and 93) annually. Locations 23, 24, 33, and 93 could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portions of clam samples from all three locations were analyzed for gamma emitting nuclides (Table C-IV.2, Appendix C). Naturally occurring potassium-40 was found at all stations and ranged from 1,250 to 1,940 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found. Historical levels of Co-60 in clams are shown in Figure C-1, Appendix C.

Preoperational clam sample results for potassium-40 ranged from 600 to 9,800 pCi/kg wet, which are consistent with current sample results.

The edible portions of crab samples from two locations were analyzed for gamma emitting nuclides (Table C-IV.2, Appendix C). Naturally occurring potassium-40 was found at both stations and ranged from 2,270 to 3,220 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

Crabs were not sampled during the preoperational years of the OCGS environmental monitoring program.

6. Sediment

Aquatic sediment samples were collected at four locations (23, 24, 33, and 94) semiannually. Of these locations, stations 23, 24, and 33 located downstream, could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from all four locations were analyzed for gamma emitting nuclides (Table C-V.1, Appendix C).

Potassium-40 was found at all stations and ranged from 1,170 to 15,400 pCi/kg dry. Cesium-137 was not detected in any of the samples. No fission or activation products were found. Figure C-3, Appendix C graphs Cs-137 concentrations in sediment from 1984 through 2011 and figure C-2, Appendix C graphs Co-60 concentrations in sediment from 1984 through 2011.

The requirement for sampling sediment is a requirement of ODCM 3.12.1, Table 3.12.1-1.d. ODCM Table 3.12.1-2, Reporting Levels for Radioactive Concentrations in Environmental samples Reporting Levels does not include requirements for sediment. CY-AA-170-1000, Radiological Environmental Monitoring Program and Meteorological Program Implementation, Attachment 1, Analytical Results Investigation Levels, includes sediment investigation level for Cs-137 of 1000 pCi/kg, dry.

While aquatic sediment sampling was part of the preoperational program, samples were not analyzed for gamma emitting nuclides until 1981.

In conclusion, the 2011 aquatic monitoring results for surface water, drinking water, fish, clams and crabs showed only naturally occurring radioactivity and were consistent with levels measured prior to the operation of OCGS, and with levels measured in past years. No radioactivity attributable to activities at OCGS was detected in any aquatic samples during 2011 and no adverse long-term trends are shown in the aquatic monitoring data.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from eight locations on a weekly basis. The eight locations were separated into three groups: Group I represents locations near the OCGS site boundary (20, 66 and 111), Group II represents the locations at an intermediate distance from the OCGS site (71, 72, and 73), and Group III represents the control and locations at a remote distance from OCGS (C and 3). The following analyses were performed:

Gross Beta

Weekly samples were analyzed for concentrations of beta emitters (Table C-VI.1 and C-VI.2, Appendix C).

Detectable gross beta activity was observed at all locations. Comparison of results among the three groups aids in determining the effects, if any, resulting from the operation of OCGS. The results from the Site Boundary locations (Group I) ranged from 7 to 31 E-3 pCi/m³ with a mean of 16 E-3 pCi/m³. The results from the Intermediate Distance locations (Group II) ranged from 5 to 33 E-3 pCi/m³ with a mean of 16 E-3 pCi/m³. The results from the Distant locations (Group III) ranged from 6 to 30 E-3 pCi/m³ with a mean of 15 E-3 pCi/m³. The similarity of the results from the three groups indicates that there is no relationship between gross beta activity and distance from the OCGS. These results are consistent with data from previous years and indicate no effects from the operation of OCGS (Figures C-4 and C-5, Appendix C).

Air sample filters have been analyzed for gross beta activity since the inception of the preoperational environmental monitoring program in 1966. The preoperational data values ranged from 1.90E-2 to 2.77E-1 pCi/m³. 2011 gross beta activity values ranged from <6E-3 to 33E-3 pCi/m³. The 2011 results are consistent with historical operational data (Figure C-5, Appendix C) and fall within the range of results observed during the preoperational period.

Strontium-89 and Strontium-90

Weekly samples were composited quarterly and analyzed for strontium-89 and strontium-90 (Table C-VI.3, Appendix C). No strontium was detected in any of the samples. These results are consistent with historical operational data. The preoperational environmental monitoring program did not include analysis of air samples for strontium-89 and strontium-90.

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C-VI.4, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in all samples. The values ranged from 37 to 96 E-3 pCi/m³. All other nuclides were less than the MDC. These results are consistent with historical operational data. The preoperational environmental monitoring program did not include analysis of air samples for gamma emitting nuclides. Additional sampling occurred in the weeks immediately following the Fukushima event in 2011. All nuclides were less than the MDC.

b. Airborne Iodine

Continuous air samples were collected from eight (C, 3, 20, 66, 71, 72, 73, 111) locations and analyzed weekly for I-131 (Table C-VII.1, Appendix C). Consistent with historical operational data, all results were less than the MDC, with the exception of 24 samples which were positive for I-131. These positive results are directly attributed to the Fukushima event in March of 2011.

The preoperational environmental monitoring program for OCGS did not include analysis of air media for iodine-131.

In conclusion, the atmospheric monitoring data are consistent with preoperational and prior operational data and show no long-term trends in the environment attributable to the operation of OCGS.

2. Terrestrial

a. Vegetation

Samples were collected from four locations (35, 36, 66, and 115) when available. The following analyses were performed:

Strontium-89 and Strontium-90

Vegetation samples from all locations were analyzed for concentrations of strontium-89 and strontium-90 (Table C-VIII.1, Appendix C). All strontium-89 results were less than the MDC. Strontium-90 was detected in 15 of 36 samples. The values ranged from 2.7 to 12.0 pCi/kg wet, which is consistent with historical data.

Gamma Spectrometry

Vegetation samples from locations 35, 36, 66, and 115 were analyzed for concentrations of gamma emitting nuclides (Table C-VIII.1, Appendix C). Naturally occurring K-40 activity was found in all samples and ranged from 2,120 to 7,070 pCi/kg wet. Naturally occurring Be-7 was detected in 21 of 36 samples and ranged from 89 to 1,110 pCi/kg wet. These results are consistent with historical operational data.

All other nuclides were less than the MDC.

Preoperational vegetation sample analyses did not include strontium analyses, or gamma spectroscopy.

In conclusion, terrestrial monitoring results for vegetation samples during 2011 showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing and Chernobyl. The radioactivity levels detected were consistent with levels measured in past years, and no radioactivity attributable to activities at OCGS was detected in any terrestrial samples. The terrestrial monitoring data show no adverse long-term trends in the terrestrial environment.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic Model 814 (CaSO₄) thermoluminescent dosimeters. Sixty-one TLD locations were monitored around the site. Results of non-background

corrected TLD measurements are summarized in Tables C-IX.1 to C-IX.3 and Figures C-6 and C-7.

The non-background corrected TLD measurements ranged from 9.0 to 25.2 mR/standard quarter. In order to correct these results for background radiation, the mean of the dose rates measured at the background TLD stations (C and 14) was subtracted from the dose measured at each indicator station. The maximum annual background corrected dose was 18.2 mR/year at Station 55, located near the site boundary, 0.3 miles west of the OCGS. This TLD is located in an area where public access is restricted. All background corrected TLD measurements were less than the 40 CFR 190 limit of 25 mR/year.

Similar to previous years, there was no strong relationship between dose measured with TLDs and distance from the OCGS, and the mean background dose exceeded the mean indicator dose in one of the four quarterly monitoring periods during 2011.

The preoperational environmental monitoring program utilized film badges, the results of which are not comparable with the doses measured using thermoluminescent dosimeters during the operational REMP.

In conclusion, the 2011 TLD results are consistent with past operational measurements of direct radiation, and demonstrate that the OCGS continues to be in compliance with the 40 CFR 190 limit on maximum dose to the public.

D. Land Use Survey

A Land Use Survey, conducted in August 2011 around the Oyster Creek Generating Station (OCGS), was performed by Normandeau Associates, Inc. for Exelon Nuclear. The purpose of the survey is to identify within a distance of 5 miles the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence and the nearest garden of greater than 500 ft² producing broad leaf vegetation. The census shall also identify within a distance of 3 miles the location in each of the 16 meteorological sectors all milk animal and all gardens greater than 500 square feet producing broadleaf vegetation. For animals producing milk for human consumption in each of the sixteen meteorological sectors out to a distance of 5 miles from the OCGS, none were observed. The distance and direction of all locations from the OCGS Reactor Building were determined using Global Positioning System (GPS) technology. There were no changes required to the OCGS REMP, as a result of this survey. The results of this survey are summarized below.

Distance in Feet from the OCGS Reactor Building		
Sector	Residence (ft)	Garden* (ft)
1	N	5,655
2	NNE	3,263
3	NE	3,245
4	ENE	5,704
5	E	6,549
6	ESE	3,189
7	SE	3,073
8	SSE	4,666
9	S	7,971
10	SSW	8,344
11	SW	9,285
12	WSW	10,713
13	W	22,191
14	WNW	None
15	NW	27,985
16	NNW	7,506

*Greater than 500 ft² in size producing broad leaf vegetation

E. Summary of Results – Inter-laboratory Comparison Program

The primary and secondary laboratories analyzed Performance Evaluation (PE) samples of air particulate, air iodine, milk, soil, vegetation and water matrices (Appendix F). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

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

2. ERA Evaluation Criteria

ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, state specific PT program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance

limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

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

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

For the primary laboratory, 14 out of 18 analytes met the specified acceptance criteria. Four analytes did not meet the specified acceptance criteria for the following reason:

1. Teledyne Brown Engineering's Analytics March 2011 Cr-51 in milk result of 398 pCi/L was higher than the known value of 298 pCi/L, resulting in a found to known ratio of 1.34. NCR 11-13 was initiated to investigate this failure. There was a slightly high bias in all the gamma activities. The June gamma results in milk did not show a high bias. No further action was required.
2. Teledyne Brown Engineering's ERA May 2011 Gross Alpha in water result of 64.1 pCi/L was higher than the known value of 50.1 pCi/L, which exceeded the upper control limit of 62.9 pCi/L. NCR 11-08 was initiated to investigate this failure. The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve.

Teledyne Brown Engineering's MAPEP March 2011 Gross Alpha in air particulate result of 0.101 Bq/sample was lower than the known value of 0.659 Bq/sample, which exceeded the lower control limit of 0.198 Bq/sample. NCR 11-11 was initiated to investigate this failure. The air particulate filter was counted on the wrong side.

3. Teledyne Brown Engineering's ERA November 2011 Sr-89 in water result of 81.0 pCi/L was higher than the known value of 69.7 pCi/L, which exceeded the upper control limit of 77.9 pCi/L. NCR 11-16 was initiated to investigate this failure. The TBE reported value to

known ratio of 1.16 fell within the acceptable range of $\pm 20\%$, which TBE considers acceptable.

4. Teledyne Brown Engineering's MAPEP March 2011 Sr-90 in soil, air particulate and vegetation were non-reports that were evaluated as failed. NCR 11-11 was initiated to investigate these failures. MAPEP evaluated the non-reports as failed due to not reporting a previously reported analyte.

For the secondary laboratory, Environmental, Inc., 11 out of 14 analytes met the specified acceptance criteria.

1. Environmental Inc.'s ERA October 2011 Cs-134 in water result of 38.8 pCi/L was higher than the known value of 33.4 pCi/L, which exceeded the upper control limit of 36.7 pCi/L. The sample was reanalyzed. The reanalyzed result of 32.9 was acceptable.
2. Environmental Inc.'s MAPEP February 2011 Sr-90 in air particulate result of 1.89 Bq/sample was higher than the known value of 1.36 Bq/sample, which exceeded the upper control limit of 1.77 Bq/sample. No errors were found in the calculation or procedure. The reanalyzed result of 1.73 Bq/sample was acceptable.
3. Environmental Inc.'s MAPEP August 2011 Sr-90 in soil result of 219.4 Bq/kg, less than the known value of 320 Bq/kg, was below the lower control limit of 224 Bq/kg. The sample was reanalyzed in triplicate through a strontium column. The reanalyzed result of 304.2 Bq/kg was acceptable.

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

V. References

1. Exelon Nuclear. Offsite Dose Calculation Manual for Oyster Creek Generating Station, Procedure CY-OC-170-301.
2. United States Nuclear Regulatory Commission Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program, Revision 1, November 1979.
3. Pre-Operational Environmental Radiation Survey, Oyster Creek Nuclear Electric Generating Station, Jersey Central Power and Light Company, March 1968.

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCV/LITER)	H-3	28	200	<LLD	<LLD	-		0
	GAMMA MN-54	28	15	<LLD	<LLD	-		0
	CO-58		15	<LLD	<LLD	-		0
	FE-59		30	<LLD	<LLD	-		0
	CO-60		15	<LLD	<LLD	-		0
	ZN-65		30	<LLD	<LLD	-		0
	NB-95		15	<LLD	<LLD	-		0
	ZR-95		30	<LLD	<LLD	-		0

A-1

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION Location of Facility: OCEAN COUNTY NJ				DOCKET NUMBER: 50-219		REPORTING PERIOD: 2011			
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	REPORTING PERIOD:	CONTROL	LOCATION WITH HIGHEST ANNUAL MEAN (M)			
				LOCATIONS MEAN (M) (F) RANGE	LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS	
SURFACE WATER (PCI/LITER)	I-131		15	<LLD	<LLD	-			0
	CS-134		15	<LLD	<LLD	-			0
	CS-137		18	<LLD	<LLD	-			0
	BA-140		60	<LLD	<LLD	-			0
	LA-140		15	<LLD	<LLD	-			0
DRINKING WATER (PCI/LITER)	H-3	67	200	<LLD	<LLD	-			0
	GR-B	65	4	3.6 (26/53) (1.8/5.4)	2.6 (5/12) (2.1/3.1)	4.5 (11/12) (3.3/5.4)	114 INDICATOR WELL AT BLDG 25 ON FORKED RIVER SITE 0.8 MILES		0
	I-131	33	1	<LLD	<LLD	-			0

A-2

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
DRINKING WATER (PCV/LITER)	GAMMA MN-54	67	15	<LLD	<LLD	-		0
	CO-58		15	<LLD	<LLD	-		0
	FE-59		30	<LLD	<LLD	-		0
	CO-60		15	<LLD	<LLD	-		0
	ZN-65		30	<LLD	<LLD	-		0
	NB-95		15	<LLD	<LLD	-		0
	ZR-95		30	<LLD	<LLD	-		0
	I-131		15	<LLD	<LLD	-		0

A-3

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011				
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR	CONTROL	LOCATION WITH HIGHEST ANNUAL MEAN (M)		
				MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
DRINKING WATER (PCI/LITER)	CS-134		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0
	BA-140		60	<LLD	<LLD	-		0
	LA-140		15	<LLD	<LLD	-		0
GROUNDWATER (PCI/LITER)	H-3	8	200	<LLD	NA	-		0
	GAMMA MN-54	8	15	<LLD	NA	-		0
	CO-58		15	<LLD	NA	-		0
	FE-59		30	<LLD	NA	-		0

A-4

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011	LOCATION WITH HIGHEST ANNUAL MEAN (M)			
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUNDWATER (PC/LITER)	CO-60		15	<LLD	NA	-		0
	ZN-65		30	<LLD	NA	-		0
	NB-95		15	<LLD	NA	-		0
	ZR-95		30	<LLD	NA	-		0
	I-131		15	<LLD	NA	-		0
	CS-134		15	<LLD	NA	-		0
	CS-137		18	<LLD	NA	-		0
	BA-140		60	<LLD	NA	-		0

A-5

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION Location of Facility: OCEAN COUNTY NJ				DOCKET NUMBER: 50-219		REPORTING PERIOD: 2011			
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	REPORTING PERIOD:	CONTROL	LOCATION WITH HIGHEST ANNUAL MEAN (M)			
				LOCATIONS MEAN (M) (F) RANGE	LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS	
GROUNDWATER (PC/LITER)	LA-140		15	<LLD	NA	-			0
BOTTOM FEEDER (PC/KG WET)	GAMMA K-40	4	NA	3990 (1/1)	3767 (3/3) (3220/4200)	3990 (1/1)	93 INDICATOR OCGS DISCHARGE CANAL 0.1 MILES WSW OF SITE	0	
	MN-54		130	<LLD	<LLD	-		0	
	CO-58		130	<LLD	<LLD	-		0	
	FE-59		260	<LLD	<LLD	-		0	
	CO-60		130	<LLD	<LLD	-		0	
	ZN-65		260	<LLD	<LLD	-		0	
	CS-134		130	<LLD	<LLD	-		0	

A-6

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
BOTTOM FEEDER (PCI/KG WET)	CS-137		150	<LLD	<LLD	-		0
PREDATOR (PCI/KG WET)	GAMMA K-40	13	NA	4430 (7/7) (3500/5440)	3747 (6/6) (2440/5190)	4580 (3/3) (3500/5440)	93 INDICATOR OCGS DISCHARGE CANAL 0.1 MILES WSW OF SITE	0
	MN-54		130	<LLD	<LLD	-		0
	CO-58		130	<LLD	<LLD	-		0
	FE-59		260	<LLD	<LLD	-		0
	CO-60		130	<LLD	<LLD	-		0
	ZN-65		260	<LLD	<LLD	-		0
	CS-134		130	<LLD	<LLD	-		0

A-7

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	MEAN (M) (F) RANGE	CONTROL LOCATION (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
PREDATOR (PCI/KG WET)	CS-137		150	<LLD	<LLD	-		0
CLAMS (PCI/KG WET)	GAMMA K-40	6	NA	1510 (4/4) (1300/1620)	1595 (2/2) (1250/1940)	1595 (2/2) (1250/1940)	94 CONTROL GREAT BAY/LITTLE EGG HARBOR 20.0 MILES SSW OF SITE	0
	MN-54		130	<LLD	<LLD	-		0
	CO-58		130	<LLD	<LLD	-		0
	FE-59		260	<LLD	<LLD	-		0
	CO-60		130	<LLD	<LLD	-		0
	ZN-65		260	<LLD	<LLD	-		0
	CS-134		100	<LLD	<LLD	-		0

8-A

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
CLAMS (PCVKG WET)	CS-137		100	<LLD	<LLD	-		0
CRABS (PCVKG WET)	GAMMA K-40	2	NA	2745 (2/2) (2270/3220)	NA	3220 (1/1)	33 INDICATOR EAST OF RT 9 BRIDGE IN OCGS DISCHARGE 0.4 MILES ESE OF SITE	0
	MN-54		130	<LLD	NA	-		0
	CO-58		130	<LLD	NA	-		0
	FE-59		260	<LLD	NA	-		0
	CO-60		130	<LLD	NA	-		0
	ZN-65		260	<LLD	NA	-		0
	CS-134		100	<LLD	NA	-		0

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
CRABS (PCI/KG WET)	CS-137		100	<LLD	NA	-		0
SEDIMENT (PCI/KG DRY)	GAMMA BE-7	8	NA	<LLD	<LLD	-		0
	K-40		NA	3565 (6/6) (1170/8580)	13550 (2/2) (11700/15400)	13550 (2/2) (11700/15400)	94 CONTROL GREAT BAY/LITTLE EGG HARBOR 20.0 MILES SSW OF SITE	0
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	CS-134		150	<LLD	<LLD	-		0
	CS-137		180	<LLD	<LLD	-		0

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011		LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR MEAN (M) (F) RANGE	CONTROL MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
AIR PARTICULATE (E-3 PC/CU.METER)	GR-B	416	10	16 (301/312) (5/33)	15 (96/104) (6/30)	17 (49/52) (7/33)	72 INDICATOR LACEY RD AT KNIGHT OF COLUMBUS HALL 1.9 MILES NNE OF SITE	0
	SR-89	32	10	<LLD	<LLD	-		0
	SR-90	32	10	<LLD	<LLD	-		0
	GAMMA BE-7	32	NA	66 (24/24) (46/96)	61 (8/8) (37/96)	74 (4/4) (54/96)	20 INDICATOR FINNINGER FARM ON SOUTH SIDE ACCESS ROAD 0.7 MILES E OF SITE	0
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	CS-134		50	<LLD	<LLD	-		0

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

A-11

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION Location of Facility: OCEAN COUNTY NJ				DOCKET NUMBER: 50-219		REPORTING PERIOD: 2011			
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR	CONTROL	LOCATION WITH HIGHEST ANNUAL MEAN (M)			
				LOCATIONS MEAN (M) (F) RANGE	LOCATION MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS	
AIR PARTICULATE (E-3 PCI/CU.METER)	CS-137		60	<LLD	<LLD	-			0
AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	416	70	42 (19/312) (27/62)	53 (5/104) (23/72)	67 (2/52) (62/72)	C CONTROL JCP&L OFFICE - COOKSTOWN NJ 24.7 MILES NW OF SITE		0
A-12 VEGETATION (PCI/KG WET)	SR-89	36	25	<LLD	<LLD	-			0
	SR-90	36	5	6.6 (10/24) (2.8/12.0)	4.3 (5/12) (2.7/5.5)	7.2 (8/10) (2.8/12.0)	115 INDICATOR EAST OF SITE, ON FINNINGER FARM 0.3 MILES E OF SITE		0
	GAMMA BE-7	36	NA	524 (16/24) (190/1110)	400 (5/12) (89/638)	569 (5/10) (451/784)	115 INDICATOR EAST OF SITE, ON FINNINGER FARM 0.3 MILES E OF SITE		0
	K-40		NA	4106 (24/24) (2130/7070)	3493 (12/12) (2120/5200)	4738 (10/10) (3130/7070)	35 INDICATOR EAST OF RT 9 AND NORTH OF OCGS DISCHG 0.4 MILES ESE OF SITE		0
	I-131		60	<LLD	<LLD				0
	CS-134		60	<LLD	<LLD				0

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE OYSTER CREEK GENERATING STATION, 2011**

Name of Facility: OYSTER CREEK GENERATING STATION				DOCKET NUMBER: 50-219				
Location of Facility: OCEAN COUNTY NJ				REPORTING PERIOD: 2011				
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR	CONTROL	LOCATION WITH HIGHEST ANNUAL MEAN (M)		
				LOCATIONS	LOCATION	MEAN (M)	STATION #	NUMBER OF
				MEAN (M)	MEAN (M)	MEAN (M)	NAME	NONROUTINE
				(F)	(F)	(F)	DISTANCE AND DIRECTION	REPORTED
				RANGE	RANGE	RANGE		MEASUREMENTS
VEGETATION (PC/KG WET)	CS-137		80	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLI-ROENTGEN/STD.MO.)	TLD-QUARTERLY	244	NA	16.2 (236/236) (9.0/25.2)	16.8 (8/8) (14.7/21.0)	21.4 (4/4) (19.8/25.2)	55 INDICATOR SOUTHERN AREA STORES SECURITY FENCE 0.3 MILES W	0

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

APPENDIX B

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

TABLE B-1: Location Designation and Identification System for the Oyster Creek Generating Station

Sample Medium	-	APT = Air Particulate AIO = Air Iodine DW = Drinking Water VEG = Vegetation SWA = Surface Water AQS = Aquatic Sediment	Clam = Clam TLD = Thermoluminescent Dosimetry Fish = Fish Crab = Crab
Station Code	-	Station's Designation	
Distance	-	Distance from the OCGS in miles	
Azimuth	-	Azimuth with respect to the OCGS in degrees	
Description	-	Meteorological sector in which the station is located and a narrative description	

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2011

<u>Sample Medium</u>	<u>Station Code</u>	<u>Distance (miles)</u>	<u>Azimuth (degrees)</u>	<u>Description</u>
TLD	1	0.4	219	SW of site at OCGS Fire Pond, Forked River, NJ
DW	1S	0.1	209	On-site southern domestic well at OCGS, Forked River, NJ
DW	1N	0.2	349	On-site northern domestic well at OCGS, Forked River, NJ
APT, AIO, TLD	3	6.0	97	East of site, near old Coast Guard Station, Island Beach State Park
TLD	4	4.6	213	SSW of site, Route 554 and Garden State Parkway, Barnegat, NJ
TLD	5	4.2	353	North of site, at Garden State Parkway Rest Area, Forked River, NJ
TLD	6	2.1	13	NNE of site, Lane Place, behind St. Pius Church, Forked River, NJ
TLD	8	2.3	177	South of site, Route 9 at the Waretown Substation, Waretown, NJ
TLD	9	2.0	230	SW of site, where Route 532 and the Garden State Parkway meet, Waretown, NJ
APT, AIO, TLD	C	24.7	313	NW of site, JCP&L office in rear parking lot, Cookstown, NJ
TLD	11	8.2	152	SSE of site, 80 th and Anchor Streets, Harvey Cedars, NJ
TLD	14	20.8	2	North of site, Larrabee Substation on Randolph Road, Lakewood, NJ
APT, AIO	20	0.7	95	East of site, on Finninger Farm on south side of access road, Forked River, NJ
TLD	22	1.6	145	SE of site, on Long John Silver Way, Skippers Cove, Waretown, NJ
SWA, CLAM, AQS	23	3.6	64	ENE of site, Barnegat Bay off Stouts Creek, approximately 400 yards SE of "Flashing Light 1"
SWA, CLAM, AQS	24	2.1	101	East of site, Barnegat Bay, approximately 250 yards SE of "Flashing Light 3"
SWA, AQS, FISH, CRAB	33	0.4	123	ESE of site, east of Route 9 Bridge in OCGS Discharge Canal
VEG	35	0.4	111	ESE of site, east of Route 9 and north of the OCGS Discharge Canal, Forked River, NJ
VEG	36	23.1	319	NW of site, at "U-Pick" Farm, New Egypt, NJ

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TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2011

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description
DW	37	2.2	18	NNE of Site, off Boox Road at Lacey MUA Pumping Station, Forked River, NJ
DW	38	1.6	197	SSW of Site, on Route 532, at Ocean Township MUA Pumping Station, Waretown, NJ
DW	39	3.5	353	North of Site, Trenton Ave. off Lacey Rd, Lacey Twp. MUA Pump Station, Forked River, NJ
TLD	46	5.6	323	NW of site, on Lacey Road, adjacent to utility pole BT 259 65, Forked River, NJ
TLD	47	4.6	26	NNE of site, Route 9 and Harbor Inn Road, Bayville, NJ
TLD	48	4.5	189	South of site, at intersection of Brook and School Streets, Barnegat, NJ
TLD	51	0.4	358	North of site, on the access road to Forked River site, Forked River, NJ
TLD	52	0.3	333	NNW of site, on the access road to Forked River site, Forked River, NJ
TLD	53	0.3	309	NW of site, at sewage lift station on the access road to the Forked River site, Forked River, NJ
TLD	54	0.3	288	WNW of site, on the access road to Forked River site, Forked River, NJ
TLD	55	0.3	263	West of site, on Southern Area Stores security fence, west of OCGS Switchyard, Forked River, NJ
TLD	56	0.3	249	WSW of site, on utility pole east of Southern Area Stores, west of the OCGS Switchyard, Forked River, NJ
TLD	57	0.2	206	SSW of site, on Southern Area Stores access road, Forked River, NJ
TLD	58	0.2	188	South of site, on Southern Area Stores access road, Forked River, NJ
TLD	59	0.3	166	SSE of site, on Southern Area Stores access road, Waretown, NJ
TLD	61	0.3	104	ESE of site, on Route 9 south of OCGS Main Entrance, Forked River, NJ

B-3

**TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction,
Oyster Creek Generating Station, 2011**

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description
TLD	62	0.2	83	East of site, on Route 9 at access road to OCGS Main Gate, Forked River, NJ
TLD	63	0.2	70	ENE of site, on Route 9, between main gate and OCGS North Gate access road, Forked River, NJ
TLD	64	0.3	42	NE of site, on Route 9 North at entrance to Finninger Farm, Forked River, NJ
TLD	65	0.4	19	NNE of site, on Route 9 at Intake Canal Bridge, Forked River, NJ
APT, AIO, TLD, VEG	66	0.4	133	SE of site, east of Route 9 and south of the OCGS Discharge Canal, inside fence, Waretown, NJ
TLD	68	1.3	266	West of site, on Garden State Parkway North at mile marker 71.7, Lacey Township, NJ
APT, AIO, TLD	71	1.6	164	SSE of site, on Route 532 at the Waretown Municipal Building, Waretown, NJ
APT, AIO, TLD	72	1.9	25	NNE of site, on Lacey Road at Knights of Columbus Hall, Forked River, NJ
APT, AIO, TLD	73	1.8	108	ESE of site, on Bay Parkway, Sands Point Harbor, Waretown, NJ
TLD	74	1.8	88	East of site, Orlando Drive and Penguin Court, Forked River, NJ
TLD	75	2.0	71	ENE of site, Beach Blvd. and Maui Drive, Forked River, NJ
TLD	78	1.8	2	North of site, 1514 Arlent Road, Forked River, NJ
TLD	79	2.9	160	SSE of site, Hightide Drive and Bonita Drive, Waretown, NJ
TLD	81	3.5	201	SSW of site, on Rose Hill Road at intersection with Barnegat Boulevard, Barnegat, NJ
TLD	82	4.4	36	NE of site, Bay Way and Clairmore Avenue, Lanoka Harbor, NJ
TLD	84	4.4	332	NNW of site, on Lacey Road, 1.3 miles west of the Garden State Parkway on siren pole, Lacey Township, NJ
TLD	85	3.9	250	WSW of site, on Route 532, just east of Wells Mills Park, Waretown, NJ
TLD	86	5.0	224	SW of site, on Route 554, 1 mile west of the Garden State Parkway, Barnegat, NJ
TLD	88	6.6	125	SE of site, eastern end of 3 rd Street, Barnegat Light, NJ
TLD	89	6.1	108	ESE of site, Job Francis residence, Island Beach State Park

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TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction,
Oyster Creek Generating Station, 2011

<u>Sample Medium</u>	<u>Station Code</u>	<u>Distance (miles)</u>	<u>Azimuth (degrees)</u>	<u>Description</u>
TLD	90	6.3	75	ENE of site, parking lot A-5, Island Beach State Park
TLD	92	9.0	46	NE of site, at Guard Shack/Toil Booth, Island Beach State Park
FISH, CRAB	93	0.1	242	WSW of site, OCGS Discharge Canal between Pump Discharges and Route 9, Forked River, NJ
SWA, AQS, CLAM, FISH	94	20.0	198	SSW of site, in Great Bay/Little Egg Harbor
TLD	98	1.6	318	NW of site, on Garden State Parkway North at mile marker 73, Lacey Township, NJ
TLD	99	1.5	310	NW of site, on Garden State Parkway at mile marker 72.8, Lacey Township, NJ
TLD	100	1.4	43	NE of site, Yacht Basin Plaza South off Lakeside Dr., Lacey Township, NJ
TLD	101	1.7	49	NE of site, end of Lacey Rd. East, Lacey Township, NJ
TLD	102	1.6	344	NNW of site, end of Sheffield Dr., Barnegat Pines, Lacey Township, NJ
TLD	103	2.4	337	NNW of site, Llewellyn Pkwy., Barnegat Pines, Lacey Township, NJ
TLD	104	1.8	221	SW of site, Rt. 532 West, before Garden State Parkway, Ocean Township, NJ
TLD	105	2.8	222	SW of site, Garden State Parkway North beside mile marker 69.6, Ocean Township, NJ
TLD	106	1.2	288	NW of site, Garden State Parkway North beside mile marker 72.2, Lacey Township, NJ
TLD	107	1.3	301	NW of site, Garden State Parkway North beside mile marker 72.5, Lacey Township, NJ
TLD	109	1.2	141	SE of site, Lighthouse Dr., Waretown, Ocean Township, NJ
TLD	110	1.5	127	SE of site, Tiller Dr. and Admiral Way, Waretown, Ocean Township, NJ
APT, AIO	111	0.3	64	ENE of site, Finninger Farm property along access road, Lacey Township, NJ
TLD	112	0.2	178	S of site, along southern access road

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2011

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description
TLD	113	0.3	90	E of site, along Rt. 9, North
DW	114	0.8	267	Well at Bldg 25 on Forked River site
VEG	115	0.3	96	E of Site, on Finninger Farm
TLD	T1	0.4	219	SW of site, at OCGS Fire Pond, Forked River, NJ
GW	MW-24-3A	0.8	97	ESE of site, Finninger Farm on South side of access road, Lacey Township, NJ
GW	W-3C	0.4	112	ESE of site, Finninger Farm adjacent to Station 35, Lacey Township, NJ

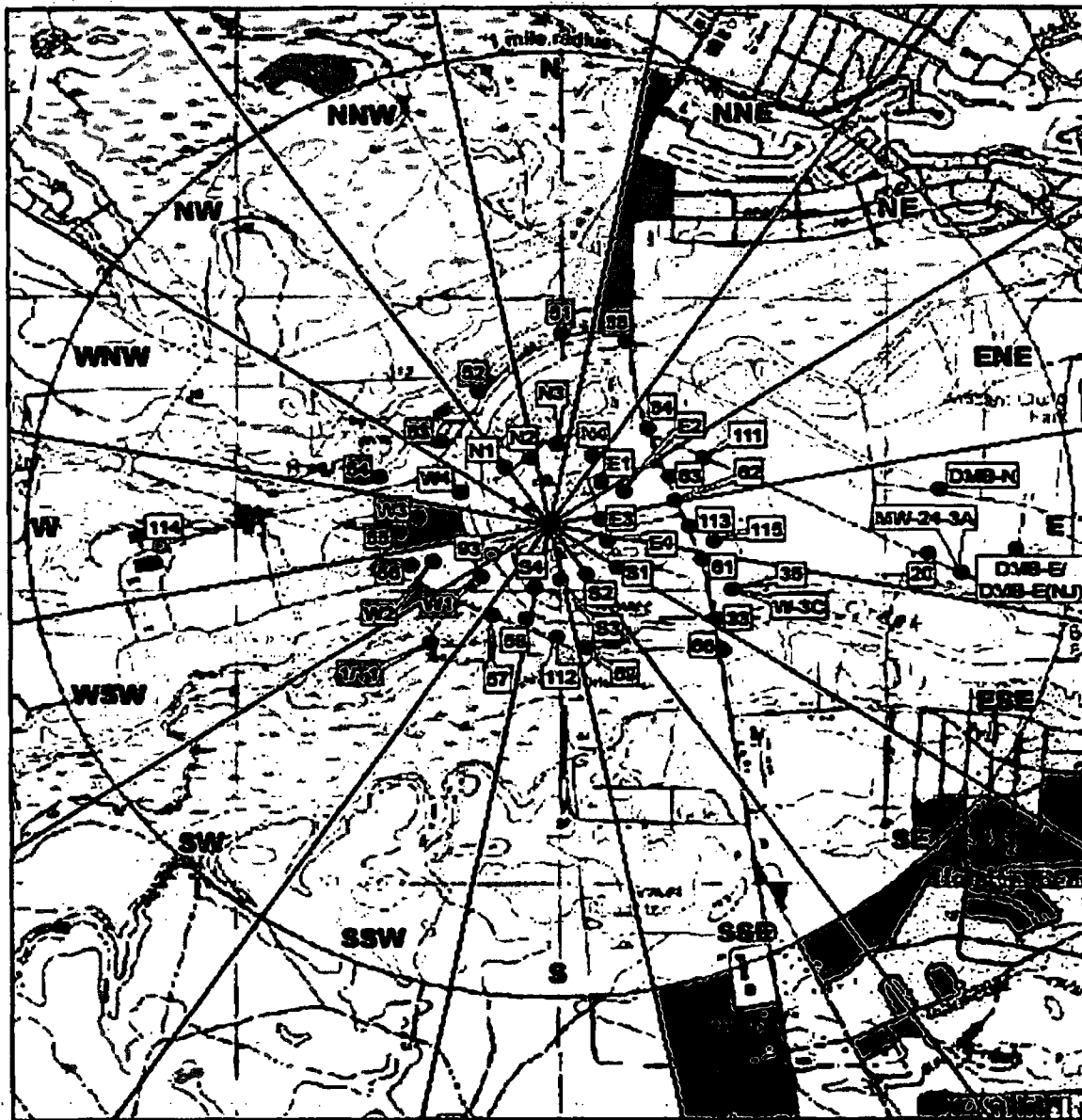
TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Oyster Creek Generating Station, 2011

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Drinking Water	Gamma Spectroscopy	Monthly samples	ER-OCS-10, Collection of well water samples for radiological analysis CY-OC-120-1200, REMP sample collection procedure – well water	1 gallon	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Drinking Water	Tritium	Monthly samples	ER-OCS-10, Collection of well water samples for radiological analysis CY-OC-120-1200, REMP sample collection procedure – well water	1 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Drinking water	Iodine	Monthly Samples	ER-OCS-10, Collection of well water samples for radiological analysis CY-OC-120-1200, REMP sample collection procedure – well water	1 gallon	TBE, TBE-2031 Radiiodine in drinking water Env. Inc., I-131-01 Determination of I-131 in water by an ion exchange
Surface Water	Gamma Spectroscopy	Grab Sample	ER-OCS-06, Collection of surface water samples for radiological analysis	1 gallon	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Surface Water	Tritium	Grab Sample	ER-OCS-06, Collection of surface water samples for radiological analysis	1 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Fish	Gamma Spectroscopy	Semi-annual samples collected via hook and line technique and traps	ER-OCS-14, Collection of fish samples for radiological analysis	250 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Clams and Crabs	Gamma Spectroscopy	Semi-annual and annual samples collected using clam long and traps.	ER-OCS-16, Collection of clam and crab samples for radiological analysis	300 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Sediment	Gamma Spectroscopy	Semi-annual grab samples	ER-OCS-03, Collection of aquatic sediment samples for radiological analysis	1000 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy

B-7

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Oyster Creek Generating Station, 2011

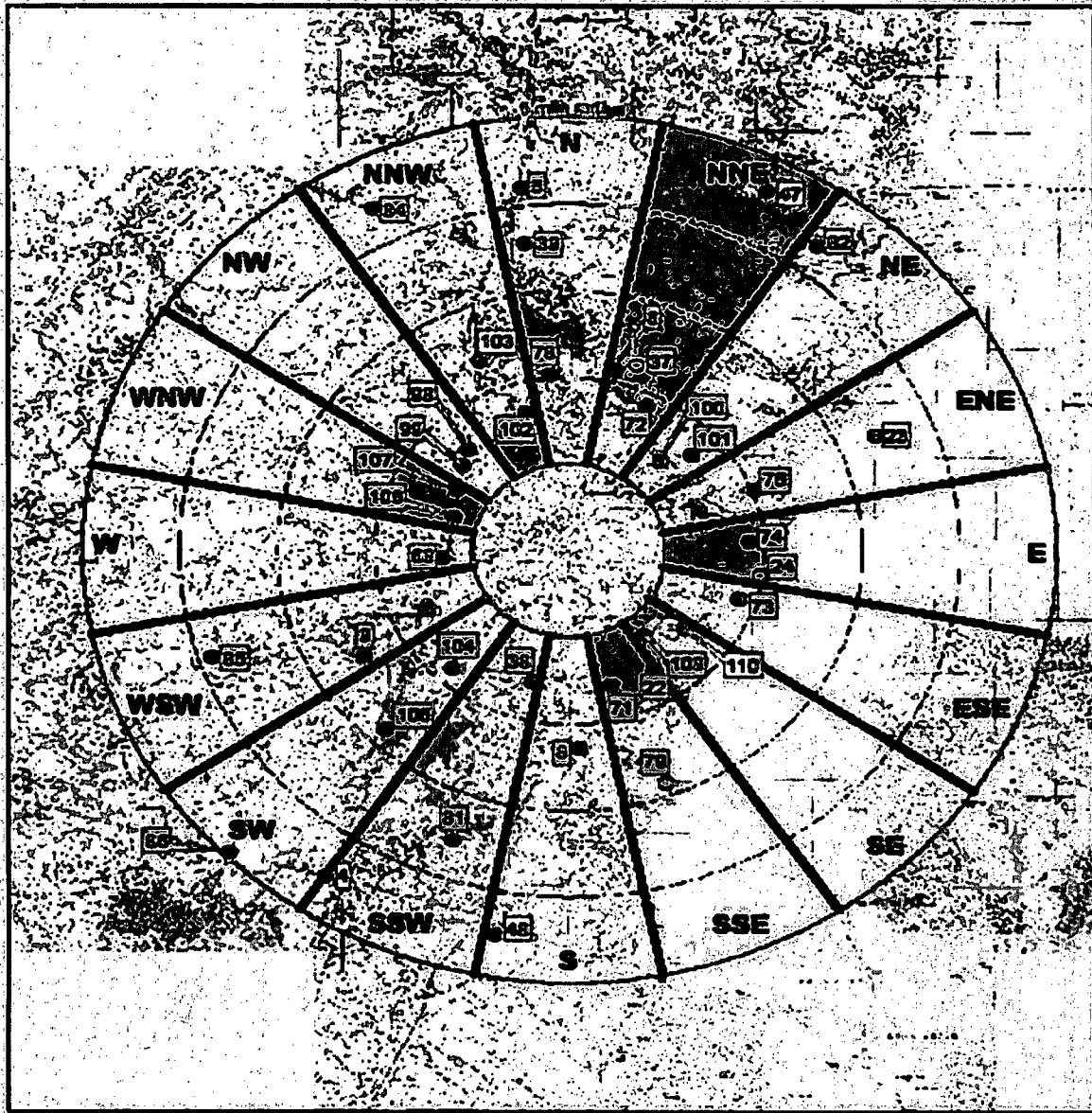
Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	1 filter (approximately 300 cubic meters weekly)	TBE, TBE-2006 Gross alpha and/or beta activity in various matrices Env. Inc., AP-02 Determination of gross alpha and/or gross beta in air particulate filters
Air Particulates	Gamma Spectroscopy	Quarterly composite of each station	TBE, TBE-2023 Compositing of samples Env. Inc., AP-03 Procedure for compositing air particulate filters for gamma spectroscopic analysis	13 filters (approximately 4000 cubic meters)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Particulates	Strontium-89/90	Quarterly composite of each station	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	13 filters (approximately 4000 cubic meters)	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Air Iodine	Gamma Spectroscopy	One-week composite of continuous air sampling through charcoal filter	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	1 filter (approximately 300 cubic meters weekly)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method)
Vegetation	Gamma Spectroscopy	Grab sample during growing season	ER-OCGS-04, Collection of food products and broadleaf vegetation samples for radiological analysis	1000 grams	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Strontium-89/90	Grab sample during growing season	ER-OCGS-04, Collection of food products and broadleaf vegetation samples for radiological analysis	1000 grams	TBE, TBE-2019 Radiostrontium analysis by ion exchange
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Panasonic 814 (containing 3 each CaSO ₄ elements)	ER OCGS-02, Collection of thermoluminescent dosimeters (TLDs) for radiological analysis	2 dosimeters	Mirion Technologies, Inc. TLD Processing Procedures



1,500 750 0 1,500 Feet

<p>Oyster Creek Generating Station REMP Stations within a 1 mile radius 2010</p>	<p>N</p>		<p>NORMANDEAU ASSOCIATES ENVIRONMENTAL CONSULTANTS 201 West Broadway, Suite 2000, A, New York, New York 10038</p>
		<p>DATE: 08/20/10 PREPARED BY: J. STEINMAN PROJECT: 20077</p>	<p>REV: 0001 DRAWN BY: J. STEINMAN FILE NAME: OIG_REMP_2010_0001.dwg</p>

Figure B-1
Locations of REMP Stations within a 1-mile radius
of the Oyster Creek Generating Station



7,300 3,650 0 7,300 Feet


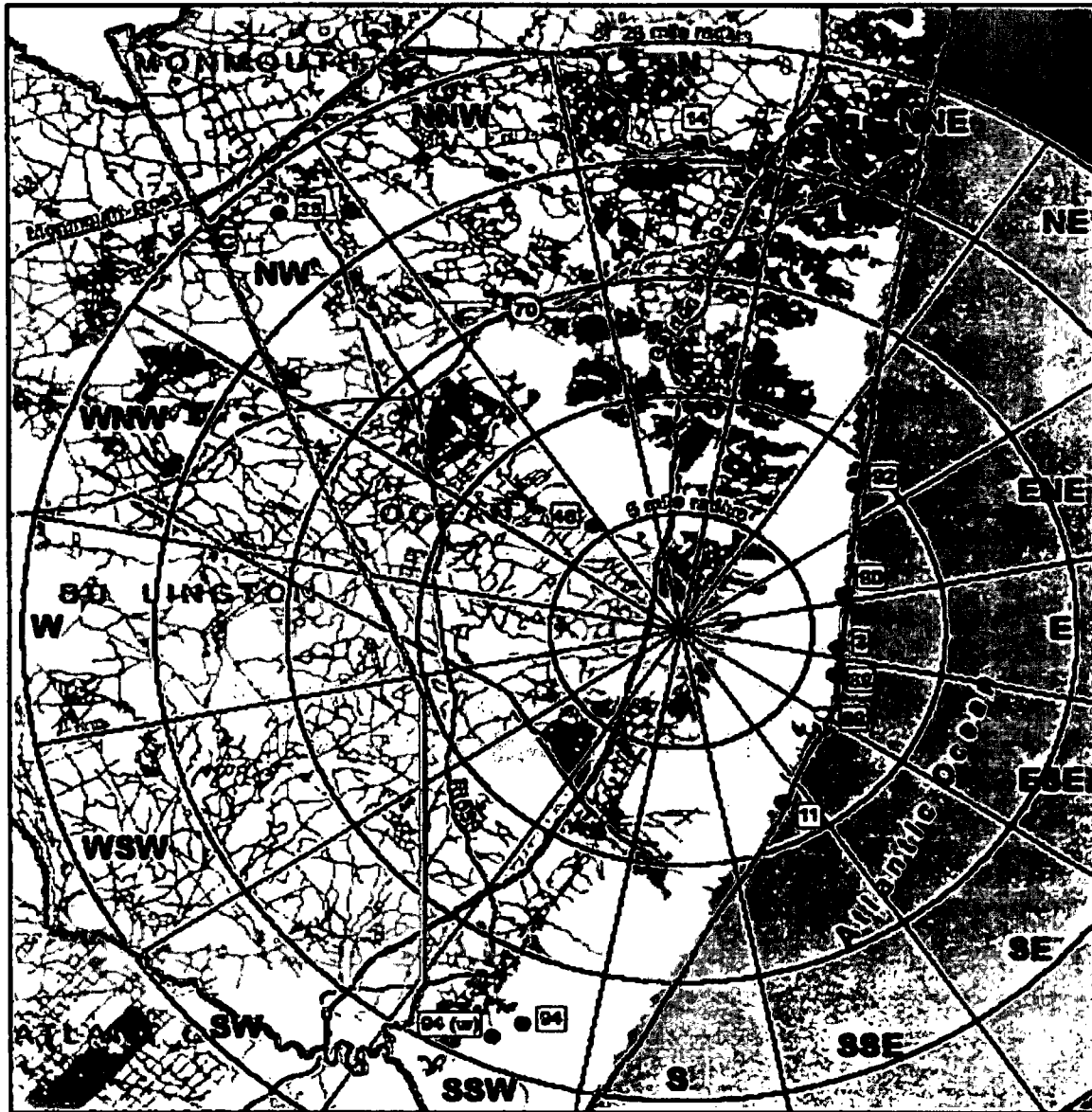
<p>Oyster Creek Generating Station REMP Stations within a 1 to 5 mile radius 2010</p>	<p>N</p> 	 <p>NORMANDEAU ASSOCIATES ENVIRONMENTAL CONSULTANTS 4800 Rockledge Blvd., Suite 200, Ft. Lauderdale, FL 33309 Tel: 754.561.1000 Fax: 754.561.1001 www.normandeau.com</p>
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Figure B-2
Locations of REMP Stations within a 1 to 5-mile radius
of the Oyster Creek Generating Station



<p>Oyster Creek Generating Station REMP Stations greater than 5 mile radius 2010</p>	<p>N</p>	<p>NORMANDEAU ASSOCIATES ENVIRONMENTAL CONSULTANTS 400-Columbia Pike, Ste. A, Suite 200, Silver Spring, MD 20910 tel: 301-583-1000 fax: 301-583-1001 www.normandeau.com</p>
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Figure B-3
Locations of REMP Stations greater than 5 miles
from the Oyster Creek Generating Station

APPENDIX C

**DATA TABLES AND FIGURES
PRIMARY LABORATORY**

TABLE C-1.1

**CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED
IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	23	24	33	94
01/08/11 - 01/25/11			< 179	< 181
02/04/11 - 02/24/11			< 173	< 174
03/02/11 - 03/31/11			< 144	< 142
04/07/11 - 04/26/11	< 173	< 174	< 173	< 174
05/05/11 - 05/26/11			< 165	< 166
06/02/11 - 06/30/11			< 175	< 177
07/06/11 - 07/28/11			< 168	< 168
08/04/11 - 08/25/11			< 164	< 168
09/01/11 - 09/27/11	< 191	< 194	< 178	< 184
10/08/11 - 10/25/11			< 180	< 169
11/02/11 - 11/22/11			< 159	< 157
12/01/11 - 12/28/11			< 189	< 189

MEAN

TABLE C-1.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF
OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
23	04/26/11 - 04/26/11	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 15	< 5
	09/26/11 - 09/26/11	< 4	< 5	< 11	< 4	< 8	< 4	< 7	< 15	< 4	< 4	< 33	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
24	04/25/11 - 04/25/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 17	< 5
	09/26/11 - 09/26/11	< 3	< 3	< 9	< 3	< 7	< 4	< 7	< 14	< 3	< 4	< 29	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
33	01/06/11 - 01/25/11	< 3	< 3	< 7	< 3	< 7	< 4	< 7	< 8	< 3	< 3	< 17	< 7
	02/04/11 - 02/23/11	< 4	< 4	< 8	< 4	< 7	< 5	< 7	< 13	< 3	< 3	< 32	< 11
	03/02/11 - 03/31/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 10	< 1	< 2	< 17	< 6
	04/06/11 - 04/25/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 18	< 5
	05/05/11 - 05/25/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 11	< 1	< 2	< 19	< 6
	06/02/11 - 06/30/11	< 4	< 4	< 8	< 3	< 7	< 4	< 7	< 9	< 4	< 4	< 23	< 8
	07/06/11 - 07/28/11	< 4	< 5	< 10	< 6	< 8	< 5	< 8	< 8	< 5	< 5	< 21	< 8
	08/04/11 - 08/25/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 14	< 4	< 4	< 31	< 8
	09/01/11 - 09/26/11	< 4	< 4	< 8	< 4	< 7	< 5	< 7	< 15	< 3	< 4	< 32	< 8
	10/06/11 - 10/25/11	< 5	< 5	< 11	< 4	< 11	< 6	< 9	< 10	< 5	< 5	< 26	< 9
	11/02/11 - 11/22/11	< 7	< 6	< 15	< 9	< 10	< 8	< 12	< 14	< 7	< 6	< 42	< 12
	11/30/11 - 12/28/11	< 7	< 7	< 14	< 9	< 17	< 9	< 14	< 14	< 7	< 6	< 38	< 15
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
94	01/06/11 - 01/25/11	< 5	< 5	< 11	< 6	< 10	< 5	< 9	< 11	< 5	< 5	< 28	< 11
	02/04/11 - 02/24/11	< 4	< 4	< 10	< 4	< 7	< 5	< 8	< 13	< 3	< 4	< 32	< 9
	03/02/11 - 03/31/11	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 14	< 4
	04/07/11 - 04/26/11	< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 13	< 1	< 1	< 18	< 5
	05/05/11 - 05/26/11	< 1	< 2	< 3	< 1	< 3	< 1	< 2	< 10	< 1	< 1	< 15	< 5
	06/02/11 - 06/30/11	< 5	< 5	< 10	< 7	< 10	< 6	< 8	< 13	< 5	< 5	< 31	< 8
	07/06/11 - 07/28/11	< 7	< 5	< 13	< 8	< 12	< 8	< 8	< 11	< 5	< 7	< 25	< 12
	08/04/11 - 08/25/11	< 4	< 4	< 11	< 4	< 8	< 4	< 8	< 13	< 3	< 4	< 31	< 11
	09/01/11 - 09/27/11	< 3	< 3	< 9	< 4	< 8	< 4	< 6	< 12	< 3	< 3	< 26	< 8
	10/06/11 - 10/25/11	< 5	< 4	< 10	< 5	< 10	< 5	< 7	< 9	< 4	< 5	< 22	< 5
	11/02/11 - 11/22/11	< 5	< 5	< 18	< 8	< 14	< 5	< 14	< 13	< 7	< 7	< 36	< 10
	12/01/11 - 12/28/11	< 6	< 6	< 16	< 8	< 13	< 7	< 11	< 13	< 6	< 7	< 39	< 14
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.1

**CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	114	1N	1S	37	38	39
01/04/11 - 01/26/11	< 181	< 183	< 177	< 181	< 183	(1)
02/01/11 - 02/24/11	< 176	< 175	< 173	< 174	< 177	(1)
03/01/11 - 03/31/11	< 188	< 189	< 185	< 190	< 185	(1)
04/05/11 - 04/27/11	< 175	< 175	< 174	< 171	< 174	< 175
05/03/11 - 05/26/11	< 178	< 165	< 168	< 174	< 177	< 174
05/31/11 - 06/30/11	< 179	< 178	< 178	< 180	< 178	< 175
07/05/11 - 07/28/11	< 172	< 168	< 170	< 169	< 169	< 172
08/02/11 - 08/25/11	< 169	< 168	< 166	< 168	< 169	< 171 (1)
08/31/11 - 09/29/11	< 187	< 184	< 185	< 180	< 183	< 185
10/04/11 - 10/26/11	< 183	< 179	< 178	< 182	< 187	< 184
11/01/11 - 11/22/11	< 157	< 155	< 188	< 155	(1)	< 156
11/30/11 - 12/28/11	< 178	< 168	< 166	< 190	(1)	< 188
MEAN	-	-	-	-	-	-

TABLE C-II.2

**CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	114	1N	1S	37	38	39
01/04/11 - 01/26/11	5.1 ± 2.0	< 2.9	< 2.7	< 2.6	< 2.6	(1)
02/01/11 - 02/24/11	< 3.4	< 1.8	1.8 ± 1.1	< 1.7	2.1 ± 1.2	(1)
03/01/11 - 03/31/11	3.9 ± 1.3	< 1.8	< 1.8	2.1 ± 1.1	1.9 ± 1.1	(1)
04/05/11 - 04/27/11	4.3 ± 1.7	3.6 ± 1.8	< 2.4	< 2.2	3.3 ± 1.6	< 2.2
05/03/11 - 05/26/11	4.2 ± 1.4	< 1.9	< 1.8	< 1.7	< 1.7	< 1.7
05/31/11 - 06/30/11	4.5 ± 1.9	< 2.5	< 2.4	2.4 ± 1.6	2.5 ± 1.6	< 2.3
07/05/11 - 07/28/11	5.1 ± 1.9	(1)	(1)	3.1 ± 1.6	3.6 ± 1.7	2.6 ± 1.5
08/02/11 - 08/25/11	4.6 ± 1.9	< 2.5	< 2.9	< 2.4	4.2 ± 1.7	< 2.3 (1)
08/31/11 - 09/29/11	5.4 ± 1.9	< 2.6	< 2.6	< 2.4	3.5 ± 1.6	< 2.2
10/04/11 - 10/26/11	4.3 ± 1.8	2.6 ± 1.6	3.0 ± 1.7	2.9 ± 1.5	< 2.2	< 2.2
11/01/11 - 11/22/11	5.1 ± 1.8	< 2.5	2.9 ± 1.7	2.6 ± 1.6	(1)	< 2.6
11/30/11 - 12/28/11	3.3 ± 1.3	3.7 ± 1.7	2.8 ± 1.6	< 1.6	(1)	< 1.6
MEAN	4.5 ± 1.2	3.3 ± 1.2	2.6 ± 1.1	2.6 ± 0.8	3.0 ± 1.7	-

* THE MEAN AND 2 STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-II.3**CONCENTRATIONS OF I-131 IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011****RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA**

COLLECTION PERIOD	114	1N	1S	37	38	39
07/05/11 - 07/28/11	< 0.8 (2)	< 0.9	< 0.6	< 0.8	< 0.8	< 0.8
08/02/11 - 08/25/11	< 0.7	< 0.6	< 0.6	< 0.8	< 0.7	< 0.8 (1)
08/31/11 - 09/29/11	< 0.6	< 0.6	< 0.7	< 0.6	< 0.7	< 0.7
10/04/11 - 10/28/11	< 0.7	< 0.6	< 0.7	< 0.7	< 0.7	< 0.7
11/01/11 - 11/22/11	< 0.7	< 0.7	< 0.7	< 0.7	(1)	< 0.7
11/30/11 - 12/28/11	< 0.5	(1)	< 0.4	< 0.4	(1)	< 0.5
MEAN	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

(2) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-II.4

**CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF
OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-85	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
114	01/08/11 - 01/26/11	< 5	< 5	< 10	< 5	< 10	< 5	< 9	< 10	< 5	< 4	< 23	< 7
	02/04/11 - 02/24/11	< 4	< 3	< 10	< 3	< 7	< 4	< 8	< 14	< 3	< 4	< 30	< 7
	03/02/11 - 03/30/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 13	< 1	< 2	< 21	< 7
	04/07/11 - 04/26/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 20	< 6
	05/05/11 - 05/28/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 17	< 5
	06/02/11 - 06/30/11	< 4	< 4	< 9	< 3	< 7	< 5	< 8	< 10	< 4	< 4	< 25	< 8
	07/08/11 - 07/28/11	< 4	< 6	< 10	< 6	< 11	< 5	< 10	< 9	< 5	< 6	< 25	< 7
	08/04/11 - 08/25/11	< 4	< 5	< 11	< 5	< 9	< 6	< 9	< 14	< 4	< 4	< 32	< 9
	09/01/11 - 09/29/11	< 4	< 5	< 9	< 4	< 10	< 5	< 8	< 15	< 5	< 5	< 31	< 8
	10/06/11 - 10/25/11	< 6	< 7	< 12	< 8	< 13	< 7	< 12	< 12	< 7	< 6	< 32	< 12
	11/02/11 - 11/22/11	< 7	< 6	< 13	< 8	< 16	< 6	< 12	< 14	< 7	< 9	< 39	< 13
	12/01/11 - 12/28/11	< 6	< 7	< 11	< 4	< 12	< 7	< 12	< 14	< 5	< 7	< 36	< 10
	MEAN		-	-	-	-	-	-	-	-	-	-	-
	1N	01/04/11 - 01/25/11	< 4	< 5	< 9	< 4	< 9	< 4	< 9	< 10	< 4	< 6	< 23
02/01/11 - 02/22/11		< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 15	< 3	< 4	< 30	< 13
03/01/11 - 03/29/11		< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 7
04/05/11 - 04/26/11		< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 19	< 6
05/03/11 - 05/24/11		< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 3
05/31/11 - 06/29/11		< 5	< 5	< 11	< 5	< 8	< 5	< 8	< 14	< 4	< 6	< 36	< 9
07/05/11 - 07/26/11		< 7	< 5	< 11	< 6	< 14	< 4	< 12	< 12	< 6	< 7	< 36	< 14
08/09/11 - 08/22/11		< 3	< 4	< 6	< 3	< 7	< 3	< 5	< 13	< 3	< 3	< 26	< 10
08/31/11 - 09/27/11		< 3	< 4	< 8	< 3	< 6	< 4	< 7	< 14	< 3	< 4	< 28	< 8
10/04/11 - 10/25/11		< 5	< 4	< 11	< 5	< 12	< 5	< 10	< 8	< 5	< 5	< 27	< 12
11/01/11 - 11/21/11		< 5	< 6	< 10	< 5	< 10	< 6	< 8	< 10	< 4	< 6	< 27	< 7
11/29/11 - 12/08/11 (1)		< 1	< 1	< 1	< 0	< 1	< 1	< 1	< 12	< 0	< 1	< 12	< 4
MEAN			-	-	-	-	-	-	-	-	-	-	-

C-5

TABLE C-II.4

CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
1S	01/04/11 - 01/25/11	< 5	< 5	< 11	< 5	< 10	< 6	< 9	< 10	< 5	< 5	< 28	< 8
	02/01/11 - 02/22/11	< 3	< 4	< 9	< 4	< 8	< 4	< 7	< 14	< 3	< 4	< 28	< 8
	03/01/11 - 03/29/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 14	< 2	< 2	< 20	< 6
	04/05/11 - 04/26/11	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 13	< 4
	05/03/11 - 05/24/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 15	< 4
	05/31/11 - 06/26/11	< 5	< 5	< 12	< 4	< 11	< 5	< 10	< 13	< 5	< 4	< 38	< 6
	07/05/11 - 07/19/11	< 1	< 1	< 3	< 2	< 3	< 2	< 3	< 6	< 1	< 1	< 11	< 4
	08/02/11 - 08/22/11	< 3	< 4	< 6	< 3	< 7	< 4	< 7	< 15	< 3	< 3	< 28	< 9
	09/06/11 - 09/26/11	< 3	< 4	< 9	< 4	< 9	< 5	< 7	< 14	< 4	< 4	< 30	< 8
	10/04/11 - 10/25/11	< 6	< 6	< 12	< 5	< 11	< 5	< 11	< 12	< 4	< 5	< 31	< 6
	11/01/11 - 11/21/11	< 6	< 6	< 11	< 3	< 11	< 7	< 11	< 12	< 6	< 6	< 30	< 9
	11/29/11 - 12/27/11	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 6	< 1	< 2	< 12	< 4
	MEAN		-	-	-	-	-	-	-	-	-	-	-
	37	01/06/11 - 01/25/11	< 6	< 5	< 15	< 5	< 12	< 6	< 12	< 11	< 5	< 6	< 32
02/04/11 - 02/23/11		< 3	< 4	< 10	< 4	< 7	< 4	< 7	< 15	< 4	< 4	< 30	< 11
03/02/11 - 03/31/11		< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 9	< 1	< 1	< 15	< 5
04/07/11 - 04/27/11		< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 12	< 1	< 1	< 18	< 6
05/05/11 - 05/26/11		< 1	< 1	< 3	< 1	< 2	< 1	< 3	< 8	< 1	< 1	< 13	< 4
06/02/11 - 06/29/11		< 5	< 6	< 10	< 6	< 12	< 5	< 7	< 12	< 4	< 7	< 34	< 12
07/06/11 - 07/27/11		< 5	< 5	< 13	< 4	< 11	< 6	< 11	< 11	< 6	< 7	< 33	< 6
08/04/11 - 08/25/11		< 5	< 4	< 9	< 5	< 10	< 5	< 7	< 15	< 4	< 4	< 34	< 10
09/01/11 - 09/29/11		< 4	< 5	< 10	< 5	< 9	< 5	< 9	< 13	< 4	< 5	< 29	< 9
10/06/11 - 10/25/11		< 5	< 5	< 11	< 5	< 13	< 5	< 7	< 9	< 4	< 5	< 25	< 8
11/02/11 - 11/22/11		< 7	< 7	< 14	< 7	< 14	< 6	< 10	< 10	< 5	< 5	< 34	< 11
12/01/11 - 12/28/11		< 5	< 5	< 12	< 5	< 14	< 6	< 11	< 13	< 5	< 6	< 30	< 8
MEAN			-	-	-	-	-	-	-	-	-	-	-

C-6

TABLE C-II.4

**CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF
OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Ce-134	Ce-137	Ba-140	La-140
38	01/08/11 - 01/25/11	< 5	< 4	< 10	< 4	< 9	< 4	< 8	< 10	< 5	< 5	< 29	< 6
	02/04/11 - 02/23/11	< 4	< 5	< 11	< 4	< 7	< 5	< 8	< 15	< 3	< 4	< 37	< 11
	03/02/11 - 03/30/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 15	< 2	< 2	< 23	< 7
	04/07/11 - 04/26/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 15	< 4
	05/05/11 - 05/25/11	< 3	< 3	< 7	< 3	< 5	< 3	< 6	< 14	< 3	< 3	< 27	< 7
	06/02/11 - 06/29/11	< 5	< 6	< 11	< 7	< 10	< 5	< 7	< 13	< 5	< 5	< 36	< 13
	07/06/11 - 07/27/11	< 6	< 4	< 10	< 6	< 11	< 5	< 12	< 14	< 6	< 6	< 35	< 11
	08/03/11 - 08/24/11	< 3	< 4	< 7	< 3	< 7	< 4	< 6	< 11	< 3	< 4	< 28	< 7
	08/31/11 - 09/28/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 13	< 3	< 4	< 28	< 8
	10/05/11 - 10/26/11	< 6	< 5	< 11	< 6	< 7	< 5	< 10	< 12	< 5	< 6	< 28	< 8
	11/02/11 - 11/22/11 (1)	-	-	-	-	-	-	-	-	-	-	-	-
	12/01/11 - 12/28/11 (1)	-	-	-	-	-	-	-	-	-	-	-	-
	MEAN		-	-	-	-	-	-	-	-	-	-	-
39	01/08/11 - 01/25/11 (1)	-	-	-	-	-	-	-	-	-	-	-	-
	02/04/11 - 02/23/11 (1)	-	-	-	-	-	-	-	-	-	-	-	-
	03/02/11 - 03/30/11 (1)	-	-	-	-	-	-	-	-	-	-	-	-
	04/07/11 - 04/27/11	< 1	< 2	< 3	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 16	< 4
	05/05/11 - 05/26/11	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 1	< 22	< 6
	06/02/11 - 06/29/11	< 5	< 5	< 10	< 4	< 9	< 5	< 9	< 14	< 5	< 5	< 33	< 9
	07/06/11 - 07/27/11	< 6	< 6	< 15	< 7	< 14	< 7	< 14	< 14	< 6	< 6	< 33	< 7
	08/04/11 - 08/25/11 (1)	< 4	< 4	< 10	< 4	< 9	< 5	< 7	< 15	< 4	< 4	< 27	< 10
	09/09/11 - 09/29/11	< 5	< 6	< 10	< 5	< 10	< 6	< 8	< 13	< 5	< 5	< 34	< 13
	10/06/11 - 10/26/11	< 5	< 7	< 16	< 6	< 12	< 8	< 12	< 14	< 7	< 6	< 36	< 12
	11/02/11 - 11/22/11	< 6	< 6	< 13	< 6	< 12	< 5	< 11	< 10	< 5	< 7	< 29	< 10
	12/01/11 - 12/28/11	< 6	< 7	< 13	< 7	< 12	< 8	< 12	< 15	< 6	< 7	< 39	< 11
	MEAN		-	-	-	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-III.1**CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED
IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011****RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA**

COLLECTION PERIOD	MW-24-3A	W-3C
01/11/11 - 01/11/11	< 186	< 183
05/11/11 - 05/11/11	< 187	< 188
07/14/11 - 07/14/11	< 185	< 185
10/12/11 - 10/12/11	< 181	< 183
MEAN	-	-

TABLE C-III.2

CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MW-24-3A	01/11/11 - 01/11/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 14	< 3	< 3	< 25	< 8
	05/11/11 - 05/11/11	< 6	< 6	< 13	< 5	< 13	< 6	< 10	< 13	< 6	< 5	< 37	< 8
	07/14/11 - 07/14/11	< 5	< 7	< 12	< 6	< 11	< 7	< 11	< 12	< 6	< 6	< 30	< 10
	10/12/11 - 10/12/11	< 8	< 7	< 11	< 7	< 16	< 7	< 12	< 11	< 7	< 8	< 28	< 13
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
W-3C	01/11/11 - 01/11/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 26	< 7
	05/11/11 - 05/11/11	< 4	< 4	< 7	< 4	< 7	< 4	< 7	< 12	< 3	< 4	< 28	< 9
	07/14/11 - 07/14/11	< 5	< 6	< 14	< 5	< 12	< 6	< 11	< 11	< 5	< 6	< 27	< 9
	10/12/11 - 10/12/11	< 7	< 6	< 16	< 8	< 12	< 8	< 9	< 9	< 6	< 6	< 29	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IV.1 CONCENTRATIONS OF GAMMA EMITTERS IN PREDATOR AND BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
33	PREDATOR								
	04/25/11	4660 ± 997	< 57	< 49	< 193	< 53	< 131	< 54	< 61
	04/25/11	4250 ± 858	< 49	< 64	< 140	< 59	< 124	< 50	< 57
	04/27/11	4700 ± 969	< 66	< 76	< 172	< 81	< 133	< 63	< 70
	09/26/11	3660 ± 611	< 36	< 32	< 60	< 47	< 76	< 36	< 33
	MEAN	4318 ± 966	-	-	-	-	-	-	-
93	PREDATOR								
	04/26/11	3500 ± 861	< 37	< 54	< 120	< 49	< 76	< 43	< 45
	09/27/11	4800 ± 1230	< 78	< 84	< 199	< 76	< 192	< 94	< 89
	11/07/11	3990 ± 952	< 59	< 69	< 146	< 75	< 129	< 66	< 70
	11/07/11	5440 ± 1100	< 51	< 58	< 112	< 59	< 138	< 60	< 72
	MEAN	4433 ± 1719	-	-	-	-	-	-	-
94	PREDATOR								
	04/26/11	3820 ± 886	< 62	< 71	< 161	< 61	< 141	< 56	< 57
	04/26/11	3390 ± 1120	< 67	< 73	< 208	< 63	< 180	< 65	< 67
	04/26/11	3230 ± 708	< 43	< 53	< 139	< 47	< 98	< 47	< 48
	09/27/11	5190 ± 976	< 64	< 62	< 120	< 67	< 116	< 58	< 67
	09/27/11	4410 ± 962	< 58	< 51	< 98	< 55	< 132	< 51	< 64
	09/27/11	2440 ± 705	< 39	< 33	< 75	< 46	< 96	< 38	< 35
	MEAN	3747 ± 1925	-	-	-	-	-	-	-
94	BOTTOM FEEDER								
	04/26/11	3220 ± 748	< 45	< 60	< 147	< 50	< 101	< 52	< 43
	09/27/11	3880 ± 969	< 59	< 56	< 114	< 61	< 122	< 53	< 63
	09/27/11	4200 ± 715	< 38	< 40	< 74	< 49	< 107	< 41	< 45
	MEAN	3767 ± 999	-	-	-	-	-	-	-

TABLE C-IV.2 CONCENTRATIONS OF GAMMA EMITTERS IN CLAM AND CRAB SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
23	CLAMS								
	04/26/11	1600 ± 688	< 47	< 57	< 100	< 50	< 119	< 47	< 44
	09/26/11	1300 ± 630	< 58	< 50	< 93	< 52	< 104	< 61	< 51
	MEAN	1450 ± 424	-	-	-	-	-	-	-
24	CLAMS								
	04/25/11	1520 ± 696	< 58	< 69	< 150	< 51	< 123	< 50	< 57
	09/26/11	1620 ± 724	< 75	< 66	< 133	< 68	< 140	< 82	< 66
	MEAN	1570 ± 141	-	-	-	-	-	-	-
33	CRABS								
	09/26/11	3220 ± 961	< 71	< 62	< 158	< 72	< 117	< 57	< 68
	MEAN	-	-	-	-	-	-	-	-
93	CRABS								
	09/22/11	2270 ± 662	< 51	< 53	< 93	< 53	< 87	< 52	< 61
	MEAN	-	-	-	-	-	-	-	-
94	CLAMS								
	04/26/11	1940 ± 683	< 52	< 53	< 129	< 56	< 100	< 41	< 51
	09/27/11	1250 ± 585	< 33	< 29	< 93	< 38	< 96	< 40	< 42
	MEAN	1595 ± 976	-	-	-	-	-	-	-

TABLE C-V.1

**CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED
IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

SITE	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Co-60	Cs-134	Cs-137
23	04/26/11	< 257	3490 ± 584	< 20	< 15	< 19	< 19	< 17
	09/26/11	< 421	1650 ± 476	< 42	< 41	< 43	< 36	< 43
	MEAN	-	2570 ± 2602	-	-	-	-	-
24	04/25/11	< 143	1170 ± 543	< 16	< 15	< 17	< 16	< 18
	09/26/11	< 663	8580 ± 1380	< 74	< 81	< 90	< 82	< 81
	MEAN	-	4875 ± 10479	-	-	-	-	-
33	04/25/11	< 418	2790 ± 629	< 24	< 36	< 22	< 21	< 30
	09/26/11	< 321	3710 ± 666	< 31	< 32	< 28	< 32	< 42
	MEAN	-	3250 ± 1301	-	-	-	-	-
94	04/26/11	< 394	11700 ± 1050	< 42	< 46	< 47	< 37	< 38
	09/27/11	< 387	15400 ± 1320	< 49	< 49	< 60	< 48	< 53
	MEAN	-	13550 ± 5233	-	-	-	-	-

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TABLE C-VI.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

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

COLLECTION PERIOD	GROUP I			GROUP II			GROUP III	
	20	65	111	71	72	73	3	C
12/28/10 - 01/05/11	15 ± 3	(1) 24 ± 5	26 ± 5	17 ± 5	22 ± 5	29 ± 5	19 ± 3	(1) 27 ± 5
01/05/11 - 01/11/11	31 ± 5	25 ± 5	31 ± 5	32 ± 5	28 ± 5	31 ± 5	30 ± 5	25 ± 5
01/11/11 - 01/19/11	20 ± 4	19 ± 4	15 ± 4	5 ± 3	20 ± 4	16 ± 4	14 ± 4	15 ± 4
01/19/11 - 01/25/11	26 ± 6	25 ± 6	22 ± 6	26 ± 6	21 ± 6	28 ± 7	20 ± 6	24 ± 6
01/25/11 - 02/01/11	17 ± 6	10 ± 5	22 ± 6	12 ± 5	11 ± 5	16 ± 6	16 ± 6	20 ± 6
02/01/11 - 02/09/11	17 ± 5	12 ± 4	14 ± 4	14 ± 4	12 ± 4	13 ± 4	10 ± 4	13 ± 4
02/09/11 - 02/16/11	16 ± 5	14 ± 5	16 ± 5	14 ± 5	16 ± 5	15 ± 5	21 ± 6	14 ± 5
02/16/11 - 02/23/11	16 ± 5	10 ± 5	11 ± 5	10 ± 5	11 ± 5	13 ± 5	17 ± 5	18 ± 5
02/23/11 - 03/02/11	19 ± 6	17 ± 6	16 ± 6	17 ± 6	16 ± 6	16 ± 6	16 ± 6	18 ± 6
03/02/11 - 03/09/11	11 ± 5	11 ± 5	11 ± 5	18 ± 5	7 ± 5	12 ± 5	9 ± 5	12 ± 5
03/09/11 - 03/16/11	11 ± 5	< 8	10 ± 5	8 ± 5	< 8	< 8	< 8	12 ± 6
03/16/11 - 03/23/11	18 ± 5	26 ± 6	23 ± 5	24 ± 5	24 ± 5	21 ± 5	18 ± 5	22 ± 5
03/23/11 - 03/30/11	26 ± 6	26 ± 6	28 ± 6	23 ± 6	31 ± 7	26 ± 6	22 ± 6	26 ± 6
03/30/11 - 04/06/11	18 ± 5	20 ± 5	17 ± 5	17 ± 5	20 ± 5	18 ± 5	14 ± 5	22 ± 5
04/06/11 - 04/13/11	20 ± 5	20 ± 5	18 ± 5	15 ± 5	16 ± 5	18 ± 5	17 ± 5	16 ± 5
04/13/11 - 04/20/11	13 ± 6	11 ± 6	14 ± 6	15 ± 6	13 ± 6	16 ± 6	13 ± 6	12 ± 6
04/20/11 - 04/27/11	11 ± 5	13 ± 6	11 ± 5	10 ± 6	10 ± 6	12 ± 6	< 8	11 ± 5
04/27/11 - 05/04/11	8 ± 4	7 ± 4	9 ± 4	7 ± 4	9 ± 5	9 ± 4	< 6	7 ± 4
05/04/11 - 05/11/11	12 ± 4	13 ± 5	12 ± 4	12 ± 4	13 ± 5	15 ± 5	11 ± 4	11 ± 4
05/11/11 - 05/18/11	11 ± 4	7 ± 4	8 ± 4	12 ± 4	12 ± 5	9 ± 4	< 6	6 ± 4
05/18/11 - 05/25/11	11 ± 5	< 7	10 ± 5	10 ± 5	10 ± 5	12 ± 5	< 7	10 ± 5
05/25/11 - 06/01/11	17 ± 5	18 ± 5	10 ± 4	21 ± 5	13 ± 5	16 ± 5	17 ± 5	21 ± 5
06/01/11 - 06/08/11	18 ± 5	12 ± 5	11 ± 5	16 ± 5	19 ± 5	16 ± 5	14 ± 5	20 ± 5
06/08/11 - 06/15/11	12 ± 5	16 ± 5	19 ± 5	14 ± 5	16 ± 5	14 ± 5	12 ± 5	15 ± 5
06/15/11 - 06/22/11	19 ± 5	18 ± 6	18 ± 5	14 ± 5	19 ± 6	15 ± 5	13 ± 5	16 ± 5
06/22/11 - 06/29/11	10 ± 5	7 ± 5	10 ± 5	14 ± 5	8 ± 5	7 ± 5	13 ± 5	13 ± 5
06/29/11 - 07/06/11	12 ± 5	< 7	< 7	13 ± 5	8 ± 5	< 7	10 ± 5	9 ± 5
07/06/11 - 07/13/11	24 ± 5	18 ± 5	20 ± 5	21 ± 5	22 ± 5	19 ± 5	19 ± 5	19 ± 5
07/13/11 - 07/20/11	10 ± 5	12 ± 5	13 ± 5	10 ± 5	12 ± 5	11 ± 5	8 ± 5	9 ± 5
07/20/11 - 07/27/11	28 ± 5	23 ± 5	22 ± 5	28 ± 6	27 ± 6	26 ± 6	24 ± 5	28 ± 6
07/27/11 - 08/03/11	12 ± 5	13 ± 5	14 ± 5	11 ± 5	13 ± 5	12 ± 5	9 ± 5	12 ± 5
08/03/11 - 08/10/11	22 ± 5	15 ± 5	19 ± 5	17 ± 5	18 ± 5	12 ± 5	12 ± 5	21 ± 5
08/10/11 - 08/17/11	9 ± 4	11 ± 5	11 ± 3	13 ± 3	12 ± 5	11 ± 5	11 ± 3	10 ± 5
08/17/11 - 08/24/11	16 ± 5	15 ± 5	15 ± 5	18 ± 5	16 ± 5	17 ± 5	13 ± 5	13 ± 5
08/24/11 - 08/31/11	10 ± 5	9 ± 5	(1) 13 ± 5	13 ± 5	(1) < 7	10 ± 5	(1) < 7	13 ± 8 (1)
08/31/11 - 09/07/11	12 ± 5	(1) 17 ± 5	13 ± 5	13 ± 5	15 ± 5	15 ± 5	9 ± 5	18 ± 5
09/07/11 - 09/14/11	19 ± 5	15 ± 5	18 ± 5	15 ± 5	21 ± 6	18 ± 6	15 ± 5	18 ± 6
09/14/11 - 09/21/11	14 ± 5	12 ± 5	11 ± 5	12 ± 5	12 ± 5	10 ± 5	7 ± 5	13 ± 5
09/21/11 - 09/28/11	9 ± 5	7 ± 5	< 7	9 ± 5	< 7	< 7	< 7	13 ± 5 (1)
09/28/11 - 10/05/11	15 ± 5	14 ± 5	10 ± 5	15 ± 5	14 ± 5	16 ± 6	< 7	13 ± 5
10/05/11 - 10/12/11	26 ± 6	29 ± 6	30 ± 6	26 ± 6	33 ± 7	25 ± 6	17 ± 6	27 ± 6
10/12/11 - 10/19/11	11 ± 5	11 ± 5	15 ± 6	17 ± 6	15 ± 6	11 ± 5	10 ± 5	12 ± 5
10/19/11 - 10/26/11	8 ± 4	11 ± 5	12 ± 5	10 ± 5	15 ± 5	8 ± 5	11 ± 5	15 ± 5
10/26/11 - 11/02/11	15 ± 5	17 ± 6	16 ± 5	15 ± 5	16 ± 6	14 ± 5	18 ± 6	19 ± 6
11/02/11 - 11/09/11	19 ± 5	24 ± 5	25 ± 5	22 ± 5	19 ± 5	21 ± 5	11 ± 4	20 ± 5
11/09/11 - 11/16/11	20 ± 6	20 ± 6	26 ± 6	23 ± 6	25 ± 6	21 ± 6	17 ± 6	23 ± 6
11/16/11 - 11/22/11	19 ± 6	21 ± 6	25 ± 6	19 ± 6	23 ± 7	20 ± 6	19 ± 6	20 ± 6
11/22/11 - 11/30/11	10 ± 4	8 ± 4	13 ± 5	11 ± 4	16 ± 5	13 ± 5	9 ± 4	11 ± 5
11/30/11 - 12/07/11	10 ± 5	11 ± 5	10 ± 5	7 ± 4	9 ± 5	10 ± 5	8 ± 5	11 ± 5
12/07/11 - 12/14/11	18 ± 5	16 ± 5	22 ± 5	20 ± 5	17 ± 5	20 ± 5	16 ± 5	18 ± 5
12/14/11 - 12/20/11	25 ± 6	25 ± 6	28 ± 6	24 ± 6	26 ± 6	22 ± 6	19 ± 6	26 ± 6
12/20/11 - 12/28/11	14 ± 4	13 ± 4	9 ± 4	13 ± 4	13 ± 4	14 ± 4	10 ± 4	14 ± 4
MEAN	16 ± 11	16 ± 12	16 ± 12	16 ± 12	17 ± 12	16 ± 11	14 ± 10	16 ± 11

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR FURTHER EXPLANATION

TABLE C-VI.2

MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

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

GROUP I - ON-SITE LOCATIONS				GROUP II - INTERMEDIATE DISTANCE LOCATIONS				GROUP III - CONTROL LOCATIONS			
COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD
12/28/10 - 02/01/11	10	31	22 ± 12	12/28/10 - 02/01/11	5	32	21 ± 16	12/28/10 - 02/01/11	14	30	21 ± 11
02/01/11 - 03/02/11	10	19	15 ± 6	02/01/11 - 03/02/11	10	18	14 ± 5	02/01/11 - 03/02/11	10	21	16 ± 7
03/02/11 - 03/30/11	10	26	18 ± 15	03/02/11 - 03/30/11	7	31	19 ± 16	03/02/11 - 03/30/11	9	26	17 ± 12
03/30/11 - 04/27/11	11	20	15 ± 7	03/30/11 - 04/27/11	10	20	15 ± 6	03/30/11 - 04/27/11	11	22	15 ± 8
04/27/11 - 06/01/11	7	18	11 ± 6	04/27/11 - 06/01/11	7	21	12 ± 7	04/27/11 - 06/01/11	6	21	12 ± 10
06/01/11 - 06/29/11	7	19	14 ± 9	06/01/11 - 06/29/11	7	19	14 ± 7	06/01/11 - 06/29/11	12	20	14 ± 5
06/29/11 - 08/03/11	10	28	17 ± 12	06/29/11 - 08/03/11	8	28	17 ± 14	06/29/11 - 08/03/11	8	28	15 ± 14
08/03/11 - 08/31/11	9	22	14 ± 8	08/03/11 - 08/31/11	10	18	14 ± 6	08/03/11 - 08/31/11	10	21	13 ± 7
08/31/11 - 09/28/11	7	19	13 ± 7	08/31/11 - 09/28/11	9	21	14 ± 7	08/31/11 - 09/28/11	7	18	13 ± 8
09/28/11 - 11/02/11	8	30	16 ± 14	09/28/11 - 11/02/11	8	33	17 ± 13	09/28/11 - 11/02/11	10	27	16 ± 11
11/02/11 - 11/30/11	8	26	19 ± 12	11/02/11 - 11/30/11	11	25	19 ± 9	11/02/11 - 11/30/11	9	23	16 ± 10
11/30/11 - 12/28/11	9	26	17 ± 13	11/30/11 - 12/28/11	7	26	16 ± 13	11/30/11 - 12/28/11	8	26	15 ± 11
12/28/10 - 12/28/11	7	31	16 ± 12	12/28/10 - 12/28/11	5	33	16 ± 12	12/28/10 - 12/28/11	6	30	15 ± 11

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

TABLE C-VI.3

**CONCENTRATIONS OF STRONTIUM IN AIR PARTICULATE SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

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

SITE	COLLECTION PERIOD	SR-89	SR-90	SITE	COLLECTION PERIOD	SR-89	SR-90
3	12/21/10 - 03/30/11	< 8	< 1	72	12/28/10 - 03/30/11	< 9	< 1
	03/30/11 - 06/29/11	< 5	< 3		03/30/11 - 06/29/11	< 5	< 3
	06/29/11 - 09/28/11	< 5	< 3		06/29/11 - 09/28/11	< 6	< 3
	09/28/11 - 12/28/11	< 5	< 2		09/28/11 - 12/28/11	< 5	< 3
	MEAN	-	-		MEAN	-	-
20	12/21/10 - 03/30/11	< 8	< 1	73	12/28/10 - 03/30/11	< 8	< 2
	03/30/11 - 06/29/11	< 5	< 2		03/30/11 - 06/29/11	< 6	< 3
	06/29/11 - 09/28/11	< 5	< 3		06/29/11 - 09/28/11	< 5	< 2
	09/28/11 - 12/28/11	< 5	< 3		09/28/11 - 12/28/11	< 5	< 2
	MEAN	-	-		MEAN	-	-
68	12/28/10 - 03/30/11	< 8	< 2	111	12/28/10 - 03/30/11	< 9	< 2
	03/30/11 - 06/29/11	< 5	< 3		03/30/11 - 06/29/11	< 5	< 2
	06/29/11 - 09/28/11	< 5	< 3		06/29/11 - 09/28/11	< 5	< 3
	09/28/11 - 12/28/11	< 5	< 2		09/28/11 - 12/28/11	< 5	< 3
	MEAN	-	-		MEAN	-	-
71	12/28/10 - 03/30/11	< 10	< 2	C	12/28/10 - 03/30/11	< 8	< 1
	03/30/11 - 06/29/11	< 5	< 2		03/30/11 - 06/29/11	< 4	< 4
	06/29/11 - 09/28/11	< 5	< 3		06/29/11 - 09/28/11	< 5	< 2
	09/28/11 - 12/28/11	< 5	< 3		09/28/11 - 12/28/11	< 5	< 3
	MEAN	-	-		MEAN	-	-

TABLE C-VI.4

**CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

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

SITE	COLLECTION PERIOD	Ba-7	Mn-54	Co-58	Co-60	Cs-134	Cs-137
3	12/21/10 - 03/30/11	37 ± 28	< 2	< 3	< 2	< 2	< 2
	03/30/11 - 06/29/11	47 ± 32	< 4	< 5	< 3	< 3	< 3
	06/29/11 - 09/28/11	54 ± 23	< 3	< 4	< 3	< 3	< 2
	09/28/11 - 12/28/11	71 ± 23	< 3	< 3	< 3	< 4	< 3
	MEAN	57 ± 24	-	-	-	-	-
20	12/21/10 - 03/30/11	96 ± 29	< 3	< 3	< 2	< 3	< 3
	03/30/11 - 06/29/11	70 ± 26	< 2	< 3	< 3	< 2	< 2
	06/29/11 - 09/28/11	54 ± 22	< 2	< 4	< 3	< 3	< 2
	09/28/11 - 12/28/11	74 ± 17	< 3	< 3	< 3	< 2	< 2
	MEAN	66 ± 21	-	-	-	-	-
66	12/28/10 - 03/30/11	68 ± 25	< 3	< 4	< 2	< 2	< 2
	03/30/11 - 06/29/11	60 ± 31	< 4	< 5	< 4	< 4	< 4
	06/29/11 - 09/28/11	57 ± 29	< 2	< 3	< 2	< 3	< 2
	09/28/11 - 12/28/11	80 ± 23	< 2	< 3	< 4	< 3	< 3
	MEAN	66 ± 20	-	-	-	-	-
71	12/28/10 - 03/30/11	52 ± 29	< 2	< 3	< 2	< 2	< 2
	03/30/11 - 06/29/11	50 ± 25	< 3	< 4	< 3	< 3	< 2
	06/29/11 - 09/28/11	68 ± 26	< 3	< 3	< 3	< 3	< 3
	09/28/11 - 12/28/11	66 ± 25	< 3	< 3	< 3	< 4	< 4
	MEAN	59 ± 19	-	-	-	-	-
72	12/28/10 - 03/30/11	62 ± 28	< 3	< 5	< 4	< 4	< 4
	03/30/11 - 06/29/11	56 ± 38	< 2	< 3	< 3	< 3	< 3
	06/29/11 - 09/28/11	56 ± 26	< 3	< 3	< 4	< 3	< 3
	09/28/11 - 12/28/11	67 ± 29	< 4	< 4	< 3	< 4	< 4
	MEAN	61 ± 10	-	-	-	-	-
73	12/28/10 - 03/30/11	70 ± 26	< 3	< 5	< 3	< 3	< 3
	03/30/11 - 06/29/11	73 ± 33	< 2	< 3	< 1	< 3	< 3
	06/29/11 - 09/28/11	56 ± 23	< 3	< 3	< 3	< 3	< 2
	09/28/11 - 12/28/11	86 ± 24	< 4	< 3	< 3	< 4	< 3
	MEAN	72 ± 23	-	-	-	-	-
111	12/28/10 - 03/30/11	85 ± 21	< 2	< 3	< 3	< 2	< 2
	03/30/11 - 06/29/11	60 ± 19	< 2	< 3	< 2	< 2	< 2
	06/29/11 - 09/28/11	46 ± 22	< 2	< 3	< 2	< 2	< 2
	09/28/11 - 12/28/11	66 ± 19	< 3	< 3	< 3	< 3	< 3
	MEAN	65 ± 32	-	-	-	-	-

TABLE C-VI.4

**CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

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

SITE	COLLECTION PERIOD	Ba-7	Mn-54	Co-58	Co-60	Cs-134	Cs-137
C	03/09/11 - 03/16/11	< 245	< 25	< 32	< 28	< 23	< 27
	03/16/11 - 03/23/11	< 318	< 29	< 35	< 25	< 35	< 38
	03/23/11 - 03/30/11	< 308	< 38	< 29	< 40	< 43	< 37
	03/30/11 - 04/06/11	< 238	< 38	< 29	< 29	< 29	< 27
	04/06/11 - 04/13/11	< 243	< 33	< 32	< 32	< 31	< 38
	12/28/10 - 03/30/11	96 ± 31	< 2	< 5	< 3	< 3	< 3
	03/30/11 - 06/29/11	78 ± 25	< 2	< 3	< 3	< 3	< 3
	06/29/11 - 09/28/11	62 ± 28	< 2	< 2	< 3	< 2	< 2
	09/28/11 - 12/28/11	47 ± 17	< 2	< 2	< 3	< 3	< 2
	MEAN		71 ± 42	-	-	-	-

* THE MEAN AND TWO STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

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

COLLECTION PERIOD	GROUP I			GROUP II			GROUP III	
	20	66	111	71	72	73	3	C
12/28/10 - 01/05/11	< 33	< 36	< 37	< 36	< 62	< 38	< 32	< 62
01/05/11 - 01/11/11	< 49	< 18	< 33	< 33	< 50	< 33	< 48	< 48
01/11/11 - 01/19/11	< 38	< 39	< 39	< 39	< 39	< 39	< 38	< 24
01/19/11 - 01/25/11	< 50	< 61	< 33	< 60	< 51	< 61	< 50	< 50
01/25/11 - 02/01/11	< 65	< 53	< 53	< 53	< 67	< 54	< 64	< 64
02/01/11 - 02/09/11	< 15	< 17	< 17	< 17	< 35	< 17	< 34	< 34
02/09/11 - 02/18/11	< 21	< 23	< 23	< 23	< 22	< 23	< 21	< 21
02/18/11 - 02/23/11	< 40	< 40	< 41	< 40	< 17	< 40	< 40	< 40
02/23/11 - 03/02/11	< 18	< 31	< 31	< 31	< 19	< 31	< 18	< 18
03/02/11 - 03/09/11	< 45	< 54	< 48	< 53	< 48	< 56	< 24	< 55
03/09/11 - 03/16/11	< 28	< 32	< 31	< 31	< 29	< 32	< 29	< 29
03/16/11 - 03/23/11	58 ± 21	< 33	31 ± 24	36 ± 22	39 ± 23	52 ± 23	47 ± 33	< 35
03/23/11 - 03/30/11	< 29	33 ± 20	< 33	37 ± 24	50 ± 22	33 ± 28	< 28	62 ± 24
03/30/11 - 04/06/11	28 ± 18	58 ± 19	61 ± 20	41 ± 21	60 ± 29	62 ± 22	64 ± 24	72 ± 21
04/06/11 - 04/13/11	< 26	29 ± 19	27 ± 19	32 ± 17	39 ± 23	< 28	23 ± 20	< 38
04/13/11 - 04/20/11	< 49	< 42	< 50	< 41	< 51	< 42	< 64	< 63
04/20/11 - 04/27/11	< 66	< 64	< 63	< 64	< 69	< 65	< 66	< 63
04/27/11 - 05/04/11	< 65	< 67	< 66	< 28	< 61	< 67	< 62	< 63
05/04/11 - 05/11/11	< 37	< 39	< 38	< 21	< 55	< 39	< 52	< 51
05/11/11 - 05/18/11	< 36	< 59	< 59	< 58	< 38	< 60	< 38	< 38
05/18/11 - 05/25/11	< 62	< 68	< 67	< 67	< 68	< 69	< 64	< 64
05/25/11 - 06/01/11	< 12	< 20	< 47	< 47	< 12	< 48	< 12	< 33
06/01/11 - 06/08/11	< 56	< 59	< 58	< 57	< 60	< 59	< 58	< 58
06/08/11 - 06/15/11	< 44	< 63	< 62	< 62	< 46	< 63	< 45	< 45
06/15/11 - 06/22/11	< 57	< 55	< 54	< 54	< 60	< 56	< 59	< 58
06/22/11 - 06/29/11	< 26	< 66	< 47	< 68	< 48	< 67	< 48	< 49
06/29/11 - 07/06/11	< 37	< 47	< 46	< 46	< 40	< 47	< 39	< 38
07/06/11 - 07/13/11	< 64	< 67	< 65	< 65	< 38	< 68	< 64	< 68
07/13/11 - 07/20/11	< 50	< 34	< 33	< 34	< 51	< 34	< 51	< 51
07/20/11 - 07/27/11	< 55	< 48	< 48	< 47	< 58	< 48	< 25	< 59
07/27/11 - 08/03/11	< 42	< 25	< 24	< 24	< 45	< 25	< 44	< 44
08/03/11 - 08/10/11	< 35	< 47	< 46	< 46	< 37	< 48	< 38	< 21
08/10/11 - 08/17/11	< 44	< 60	< 45	< 59	< 47	< 61	< 46	< 67
08/17/11 - 08/24/11	< 43	< 46	< 45	< 45	< 46	< 46	< 45	< 52
08/24/11 - 08/31/11	< 41	< 63 (1)	< 58	< 61 (1)	< 44	< 64 (1)	< 43	< 68 (1)
08/31/11 - 09/07/11	< 24 (1)	< 23	< 23	< 23	< 25	< 23	< 25	< 26
09/07/11 - 09/14/11	< 35	< 36	< 35	< 35	< 38	< 36	< 37	< 37
09/14/11 - 09/21/11	< 42	< 57	< 56	< 17	< 44	< 58	< 43	< 39
09/21/11 - 09/28/11	< 36	< 38	< 38	< 38	< 38	< 39	< 37	< 37 (1)
09/28/11 - 10/05/11	< 40	< 42	< 37	< 41	< 42	< 23	< 38	< 38
10/05/11 - 10/12/11	< 12	< 10	< 10	< 10	< 13	< 10	< 13	< 13
10/12/11 - 10/19/11	< 26	< 62	< 26	< 61	< 46	< 63	< 45	< 45
10/19/11 - 10/26/11	< 45	< 38	< 37	< 38	< 46	< 39	< 45	< 43
10/26/11 - 11/02/11	< 45	< 46	< 25	< 45	< 33	< 46	< 33	< 33
11/02/11 - 11/09/11	< 57	< 59	< 58	< 32	< 51	< 60	< 50	< 49
11/09/11 - 11/16/11	< 5	< 10	< 10	< 10	< 41	< 10	< 40	< 40
11/16/11 - 11/22/11	< 49	< 57	< 56	< 56	< 51	< 58	< 50	< 50
11/22/11 - 11/30/11	< 39	< 42	< 41	< 41	< 23	< 42	< 41	< 41
11/30/11 - 12/07/11	< 41	< 42	< 42	< 18	< 22	< 43	< 40	< 40
12/07/11 - 12/14/11	< 17	< 33	< 32	< 32	< 28	< 33	< 15	< 27
12/14/11 - 12/20/11	< 46	< 37	< 36	< 36	< 49	< 37	< 48	< 48
12/20/11 - 12/28/11	< 40	< 40	< 39	< 39	< 42	< 40	< 41	< 14
MEAN	43 ± 44	39 ± 29	40 ± 38	36 ± 7	47 ± 21	49 ± 29	44 ± 41	67 ± 14

* THE MEAN AND 2 STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
 (1) SEE PROGRAM EXCEPTIONS SECTION FOR FURTHER EXPLANATION

TABLE C-VIII.1

CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	SR-89	SR-90	Ba-7	K-40	I-131	Ca-134	Ca-137	Ba-140	La-140	
115	07/19/11 Cabbage	< 14	4.3 ± 2.4	< 436	2960 ± 687	< 41	< 39	< 38	< 286	< 62	
	07/19/11 Collards	< 13	5.5 ± 1.5	507 ± 226	3650 ± 714	< 30	< 28	< 45	< 206	< 68	
	07/19/11 Kale	< 13	< 2.8	< 756	6240 ± 1230	< 46	< 55	< 74	< 542	< 109	
	08/16/11 Cabbage	< 14	< 2.4	451 ± 252	2130 ± 405	< 51	< 23	< 31	< 135	< 32	
	08/16/11 Collards	< 18	12.0 ± 2.0	< 310	3160 ± 673	< 59	< 28	< 50	< 111	< 29	
	08/16/11 Kale	< 13	7.0 ± 1.5	< 370	4880 ± 909	< 60	< 30	< 42	< 155	< 39	
	09/13/11 Collards	< 17	6.7 ± 1.8	< 302	3140 ± 518	< 58	< 23	< 36	< 132	< 32	
	09/13/11 Kale	< 13	2.8 ± 1.1	537 ± 286	3660 ± 407	< 25	< 29	< 39	< 451	< 109	
	09/13/11 Cabbage	(1)	-	-	-	-	-	-	-	-	-
	10/25/11 Collards	< 19	10.6 ± 2.1	784 ± 234	2580 ± 416	< 56	< 18	< 28	< 545	< 193	
	10/25/11 Kale	< 17	8.8 ± 2.5	564 ± 172	4010 ± 389	< 56	< 16	< 18	< 103	< 31	
	MEAN			7.2 ± 6.2	569 ± 255	3641 ± 2383					
	35	07/19/11 Cabbage	< 15	< 4.1	744 ± 382	7070 ± 438	< 45	< 12	< 15	< 108	< 26
07/19/11 Collards		< 19	< 2.3	190 ± 125	5040 ± 293	< 40	< 12	< 14	< 87	< 24	
07/19/11 Kale		< 17	< 1.9	197 ± 113	5690 ± 314	< 48	< 15	< 15	< 105	< 32	
08/16/11 Cabbage		< 18	< 3.7	768 ± 236	3410 ± 657	< 54	< 26	< 30	< 113	< 49	
08/16/11 Collards		< 16	< 2.5	366 ± 165	4550 ± 449	< 31	< 16	< 16	< 76	< 21	
08/16/11 Kale		< 19	< 3.0	< 182	5290 ± 522	< 35	< 19	< 22	< 87	< 27	
09/13/11 Collards		< 15	5.2 ± 1.5	596 ± 178	3160 ± 429	< 48	< 22	< 21	< 107	< 29	
09/13/11 Kale		< 17	2.9 ± 1.5	385 ± 178	4660 ± 566	< 58	< 20	< 25	< 122	< 26	
09/13/11 Cabbage		(1)	-	-	-	-	-	-	-	-	-
10/25/11 Collards		< 18	< 3.5	1110 ± 194	3130 ± 378	< 59	< 17	< 21	< 123	< 37	
10/25/11 Kale		< 18	< 3.8	408 ± 154	5180 ± 436	< 58	< 14	< 17	< 125	< 40	
MEAN				4.0 ± 3.3	529 ± 605	4736 ± 2515					

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

TABLE C-VIII.1

CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD		SR-89	SR-90	Ba-7	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140	
36	07/19/11	Cabbage	< 10	< 2.2	< 155	2120 ± 323	< 60	< 14	< 17	< 106	< 27	
	07/19/11	Collards	< 13	2.7 ± 1.5	< 48	3300 ± 134	< 18	< 5	< 5	< 39	< 10	
	07/19/11	Kale	< 12	4.4 ± 1.8	89 ± 45	3450 ± 147	< 12	< 3	< 4	< 28	< 8	
	08/16/11	Cabbage	< 18	< 3.2	212 ± 148	3080 ± 400	< 34	< 19	< 19	< 89	< 24	
	08/16/11	Collards	< 18	< 4.8	638 ± 195	3580 ± 429	< 23	< 10	< 16	< 51	< 10	
	08/16/11	Kale	< 17	< 4.8	549 ± 205	2980 ± 469	< 40	< 18	< 22	< 103	< 39	
	09/13/11	Cabbage	< 19	< 2.5	< 122	2180 ± 304	< 30	< 13	< 15	< 70	< 17	
	09/13/11	Collards	< 22	4.1 ± 1.9	< 207	4300 ± 513	< 10	< 10	< 9	< 51	< 17	
	09/13/11	Kale	< 13	5.5 ± 1.8	511 ± 186	4280 ± 562	< 49	< 24	< 24	< 126	< 34	
	10/25/11	Cabbage	< 14	< 3.2	< 158	2780 ± 342	< 53	< 16	< 16	< 102	< 36	
	10/25/11	Collards	< 19	< 3.4	< 150	4720 ± 456	< 59	< 15	< 16	< 110	< 35	
	10/25/11	Kale	< 17	4.9 ± 2.4	< 200	5200 ± 474	< 60	< 17	< 17	< 126	< 36	
		MEAN			4.3 ± 2.1	400 ± 473	3493 ± 1936	-	-	-	-	-
	66	07/17/11	Cabbage	(1)	-	-	-	-	-	-	-	-
07/17/11		Collards	(1)	-	-	-	-	-	-	-	-	
07/17/11		Kale	(1)	-	-	-	-	-	-	-	-	
08/16/11		Cabbage	(1)	< 12	< 4.8	< 351	2720 ± 634	< 38	< 29	< 26	< 112	< 32
08/16/11		Collards	(1)	< 15	< 4.2	< 324	4200 ± 539	< 55	< 32	< 32	< 155	< 47
08/16/11		Kale	(1)	< 14	< 4.6	283 ± 109	4700 ± 298	< 33	< 16	< 17	< 84	< 25
09/13/11		Cabbage	(1)	< 11	< 2.7	510 ± 228	3140 ± 481	< 57	< 27	< 27	< 143	< 30
09/14/11		Collards	(1)	-	-	-	-	-	-	-	-	-
09/15/11		Kale	(1)	-	-	-	-	-	-	-	-	-
		MEAN		-	-	387 ± 349	3690 ± 1834	-	-	-	-	-

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR FURTHER EXPLANATION

C-20

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2011

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

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
1	17.7 ± 4.0	17.7 ± 3.0	17.1 ± 2.1	15.6 ± 1.5	20.4 ± 1.5
3	15.6 ± 4.4	14.4 ± 1.5	14.4 ± 1.2	14.7 ± 1.8	18.9 ± 1.2
4	15.5 ± 4.8	14.1 ± 2.4	15.6 ± 0.6	13.5 ± 2.4	18.9 ± 2.1
5	20.3 ± 3.8	19.2 ± 1.5	19.5 ± 1.5	19.2 ± 2.1	23.1 ± 3.9
6	16.4 ± 3.2	14.7 ± 1.2	16.2 ± 2.7	16.2 ± 1.8	18.6 ± 0.6
8	15.5 ± 4.7	14.7 ± 1.2	14.7 ± 1.8	13.5 ± 2.1	18.9 ± 2.7
9	15.3 ± 4.4	14.1 ± 1.2	14.4 ± 1.5	14.1 ± 2.4	18.6 ± 2.4
C	16.2 ± 4.8	15.3 ± 2.1	14.7 ± 1.8	15.0 ± 1.2	19.8 ± 2.1
11	16.3 ± 4.1	15.0 ± 1.2	16.2 ± 1.8	14.7 ± 1.5	19.2 ± 0.6
14	17.5 ± 4.7	16.5 ± 1.8	16.5 ± 2.1	15.9 ± 1.8	21.0 ± 2.7
22	15.5 ± 4.8	14.1 ± 1.2	17.1 ± 5.1	12.9 ± 0.9	18.0 ± 2.1
46	14.7 ± 4.8	13.5 ± 1.5	13.8 ± 3.0	13.2 ± 1.5	18.3 ± 5.1
47	15.5 ± 3.2	15.3 ± 2.4	14.1 ± 2.4	14.7 ± 1.2	17.7 ± 1.2
48	16.1 ± 4.8	15.6 ± 2.4	15.0 ± 0.9	14.1 ± 0.9	19.5 ± 1.8
51	18.2 ± 4.9	18.9 ± 2.4	16.2 ± 1.8	16.2 ± 2.4	21.3 ± 1.2
52	18.8 ± 5.2	18.9 ± 1.2	16.8 ± 0.9	17.1 ± 0.6	22.5 ± 3.0
53	18.4 ± 3.6	17.4 ± 2.1	18.0 ± 1.8	17.1 ± 2.4	21.0 ± 1.5
54	16.4 ± 4.3	15.3 ± 1.5	17.4 ± 2.1	14.1 ± 0.6	18.9 ± 2.1
55	21.4 ± 5.2	20.7 ± 2.1	19.8 ± 3.9	19.8 ± 2.1	25.2 ± 2.1
56	20.1 ± 5.3	18.0 ± 2.7	20.4 ± 6.0	18.3 ± 1.2	23.7 ± 2.1
57	17.0 ± 3.4	15.9 ± 1.5	15.9 ± 1.2	16.8 ± 2.1	19.5 ± 0.9
58	17.0 ± 4.5	15.9 ± 0.6	15.9 ± 2.1	15.9 ± 1.2	20.4 ± 1.8
59	17.0 ± 5.0	15.3 ± 1.8	15.9 ± 1.2	16.2 ± 1.5	20.7 ± 2.7
61	15.7 ± 3.6	15.0 ± 1.5	15.3 ± 2.1	14.1 ± 1.2	18.3 ± 1.8
62	16.9 ± 2.5	16.8 ± 1.8	17.1 ± 1.2	15.3 ± 0.9	18.3 ± 1.5
63	15.1 ± 7.9	9.6 ± 0.6 (1)	15.3 ± 1.5	16.5 ± 0.9	18.9 ± 1.2
64	16.7 ± 3.0	15.6 ± 1.5	16.2 ± 1.2	15.9 ± 1.8	18.9 ± 2.4
65	15.9 ± 4.0	15.3 ± 1.5	14.7 ± 1.8	14.7 ± 1.2	18.9 ± 0.9
66	15.3 ± 4.1	14.4 ± 1.8	14.7 ± 2.1	13.8 ± 2.1	18.3 ± 2.1
68	14.9 ± 3.8	13.8 ± 1.2	15.9 ± 0.9	12.9 ± 1.5	17.1 ± 2.1
71	16.7 ± 3.7	15.3 ± 0.9	16.8 ± 2.7	15.3 ± 1.2	19.2 ± 1.8
72	15.8 ± 2.5	14.7 ± 1.5	16.5 ± 1.5	14.7 ± 1.8	17.1 ± 1.8
73	14.9 ± 3.9	13.8 ± 1.8	16.5 ± 5.7	12.6 ± 0.9	16.5 ± 2.4
74	15.3 ± 3.5	14.1 ± 1.2	16.5 ± 2.4	13.5 ± 0.6	17.1 ± 2.1
75	16.0 ± 3.6	15.3 ± 1.2	15.6 ± 1.5	14.4 ± 1.5	18.6 ± 2.4
78	16.4 ± 6.2	15.0 ± 2.1	16.2 ± 0.6	13.5 ± 1.2	20.7 ± 1.5
79	16.3 ± 4.0	15.0 ± 1.2	15.9 ± 2.1	15.0 ± 1.2	19.2 ± 2.1
81	16.4 ± 5.4	14.7 ± 0.9	17.4 ± 2.7	13.8 ± 2.4	19.8 ± 3.0
82	16.3 ± 5.7	14.7 ± 1.5	15.9 ± 1.8	14.1 ± 0.3	20.4 ± 1.5
84	16.7 ± 4.7	14.7 ± 1.5	18.3 ± 1.8	14.7 ± 1.2	19.2 ± 0.9
85	14.9 ± 3.8	14.7 ± 2.4	13.8 ± 0.6	13.5 ± 0.6	17.7 ± 1.2
86	16.4 ± 4.6	15.3 ± 2.1	15.3 ± 0.9	15.0 ± 2.1	19.8 ± 5.7
88	14.5 ± 3.3	13.2 ± 2.1	14.4 ± 0.9	13.5 ± 0.9	16.8 ± 1.2
89	14.6 ± 4.1	14.1 ± 0.9	14.1 ± 2.7	12.6 ± 1.2	17.4 ± 1.8
90	14.0 ± 3.2	13.2 ± 1.5	13.8 ± 2.7	12.6 ± 1.2	16.2 ± 1.5
92	15.6 ± 4.1	14.4 ± 0.6	15.3 ± 0.6	14.1 ± 1.2	18.6 ± 1.5
98	13.7 ± 7.8	9.0 ± 1.2	13.5 ± 0.9	13.8 ± 1.2	18.6 ± 1.2
99	14.4 ± 2.9	14.1 ± 0.6 (1)	13.5 ± 2.1	13.5 ± 2.1	16.5 ± 1.2
T1	17.7 ± 4.0	17.1 ± 1.8	16.5 ± 1.8	16.5 ± 1.8	20.7 ± 2.4

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IX-1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2011

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

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
100	15.8 ± 2.9	15.9 ± 2.4	14.4 ± 2.1	15.0 ± 2.7	17.7 ± 1.5
101	15.2 ± 4.5	14.4 ± 1.5	13.8 ± 1.2	14.1 ± 1.5	18.6 ± 1.5
102	16.5 ± 3.7	16.2 ± 2.1	15.6 ± 2.1	15.0 ± 2.1	19.2 ± 1.5
103	16.1 ± 3.7	15.9 ± 1.8	15.6 ± 3.9	14.1 ± 2.4	18.6 ± 1.8
104	15.9 ± 3.6	15.0 ± 1.5	15.3 ± 1.5	14.7 ± 2.7	18.6 ± 1.5
105	14.1 ± 3.4	13.5 ± 1.2	13.8 ± 3.3	12.6 ± 2.1	16.5 ± 1.8
106	14.9 ± 3.4	15.3 ± 1.8	13.5 ± 1.2	13.5 ± 1.2	17.1 ± 1.5
107	15.2 ± 3.7	15.9 ± 2.1	13.8 ± 0.9	13.5 ± 1.5	17.4 ± 2.4
109	16.4 ± 2.7	16.5 ± 0.9	15.6 ± 1.5	15.3 ± 1.2	18.3 ± 1.8
110	15.5 ± 2.7	15.0 ± 1.5	15.0 ± 1.8	14.4 ± 2.1	17.4 ± 1.2
112	18.4 ± 4.4	17.7 ± 0.6	17.4 ± 2.1	16.8 ± 1.5	21.6 ± 2.4
113	16.5 ± 4.0	16.8 ± 3.6	15.3 ± 2.7	14.7 ± 0.9	19.2 ± 3.6

TABLE C-IX.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, INTERMEDIATE, SPECIAL INTEREST AND CONTROL LOCATIONS FOR OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF MILLI-ROENTGEN PER STD. QUARTER ± 2 STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	SITE BOUNDARY ± 2 S.D.	INTERMEDIATE	SPECIAL INTEREST	CONTROL
JAN-MAR	16.4 ± 4.6	14.8 ± 3.1	14.3 ± 1.5	15.9 ± 1.7
APR-JUN	16.6 ± 3.1	15.3 ± 2.8	15.4 ± 2.7	15.6 ± 2.5
JUL-SEP	16.1 ± 3.0	14.2 ± 2.5	14.0 ± 1.9	15.5 ± 1.3
OCT-DEC	20.4 ± 3.8	18.5 ± 2.7	18.1 ± 2.5	20.4 ± 1.7

TABLE C-IX.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
SITE BOUNDARY	76	9.6	25.2	17.4 ± 5.0
INTERMEDIATE	124	9.0	23.1	15.7 ± 4.3
SPECIAL INTEREST	36	12.6	19.8	15.5 ± 3.9
CONTROL	8	14.7	21.0	16.8 ± 4.6

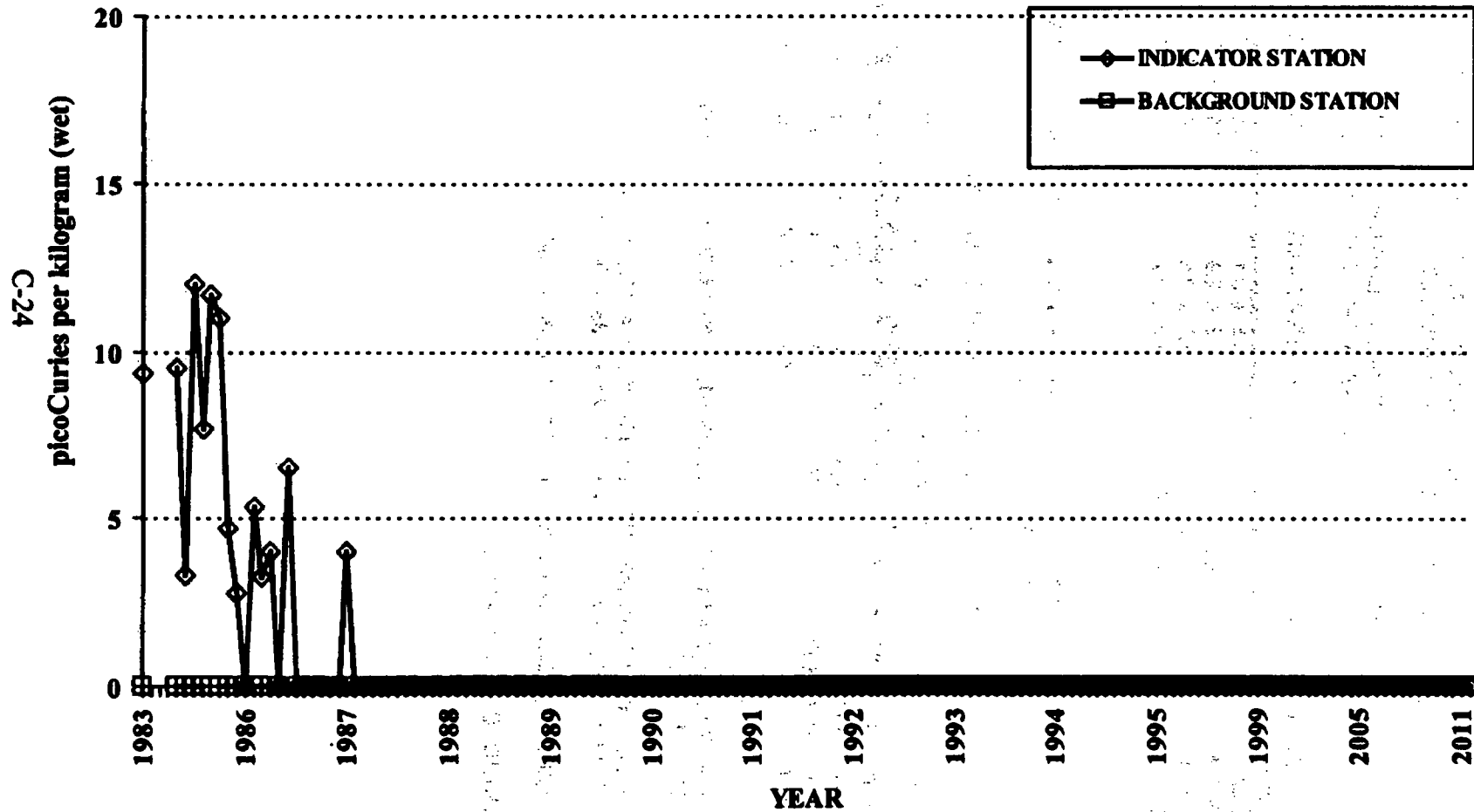
SITE BOUNDARY STATIONS - 1, 112, 113, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, T1

INTERMEDIATE STATIONS - 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 22, 4, 46, 47, 48, 5, 6, 68, 73, 74, 75, 78, 79, 8, 82, 84, 85, 86, 9, 98, 99

SPECIAL INTEREST STATIONS - 11, 3, 71, 72, 81, 88, 89, 90, 92

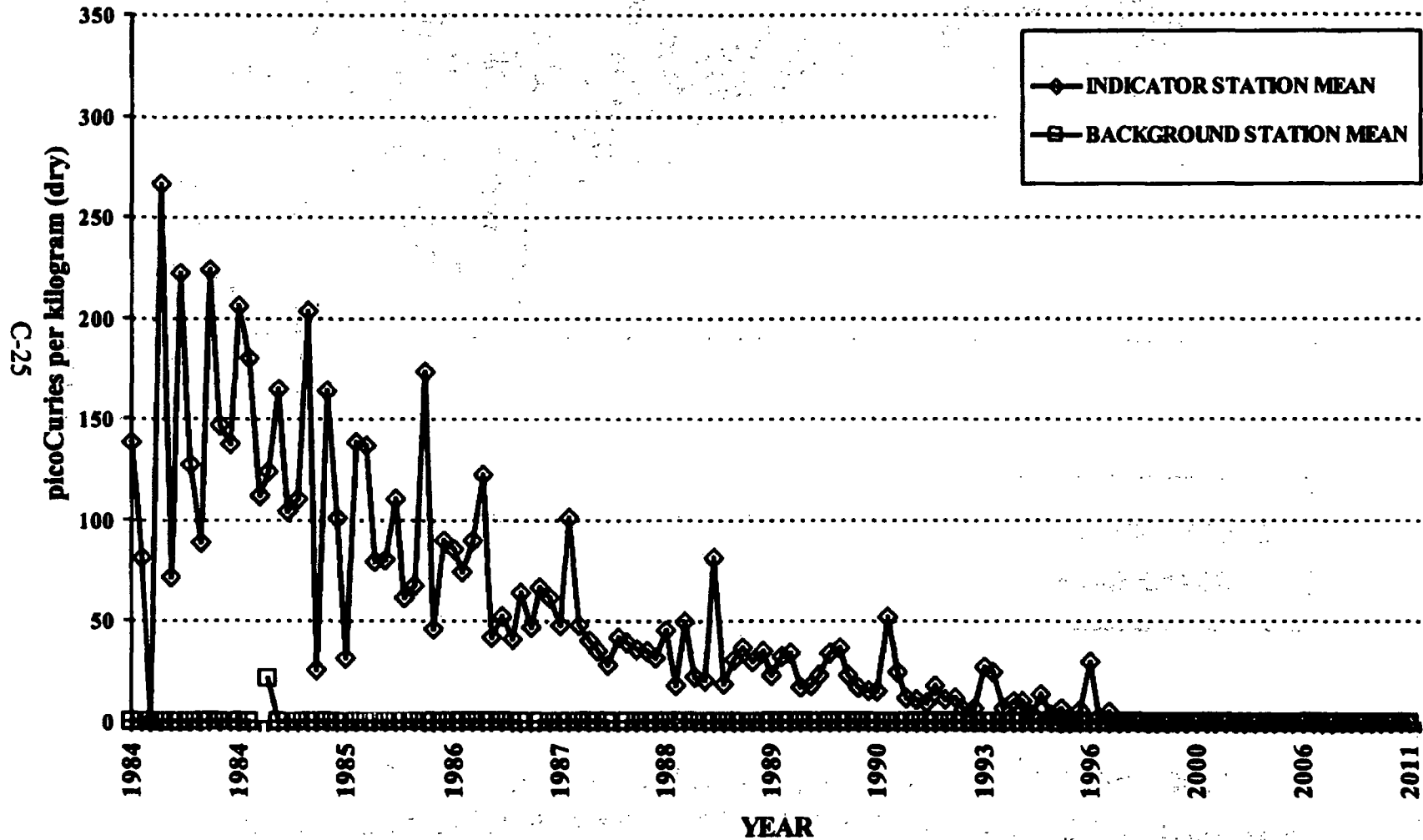
CONTROL STATIONS - 14, C

**FIGURE C-1
MEAN COBALT-60 CONCENTRATION IN CLAMS
OYSTER CREEK GENERATING STATION, 1983 - 2011**



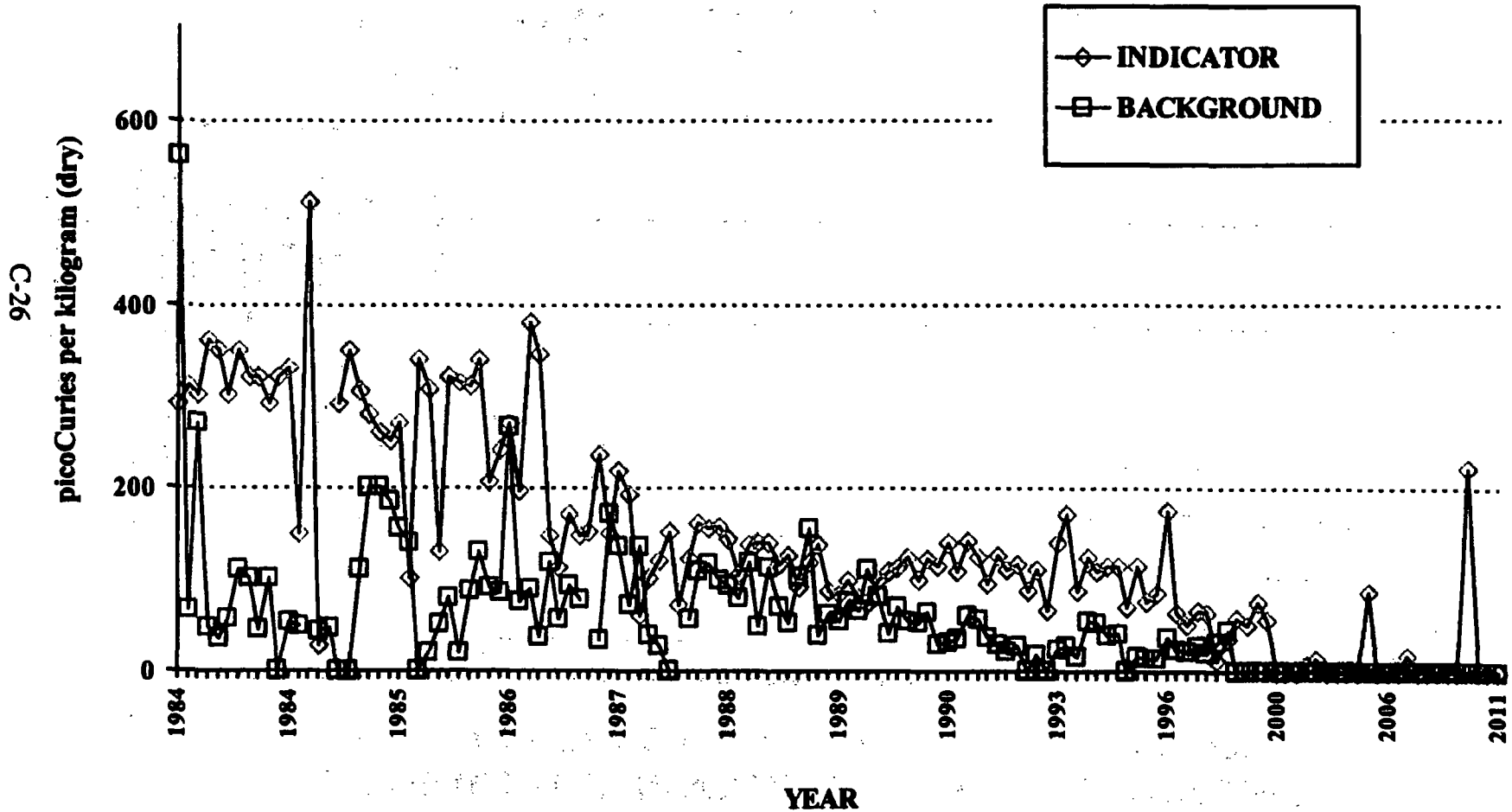
* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-2
MEAN COBALT-60 CONCENTRATION IN AQUATIC SEDIMENT
OYSTER CREEK GENERATING STATION, 1984 - 2011



* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-3
MEAN CESIUM-137 CONCENTRATION IN AQUATIC SEDIMENT
OYSTER CREEK GENERATING STATION, 1984 - 2011



* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-4
MEAN WEEKLY GROSS BETA CONCENTRATIONS
IN AIR PARTICULATES
OYSTER CREEK GENERATING STATION, 2011

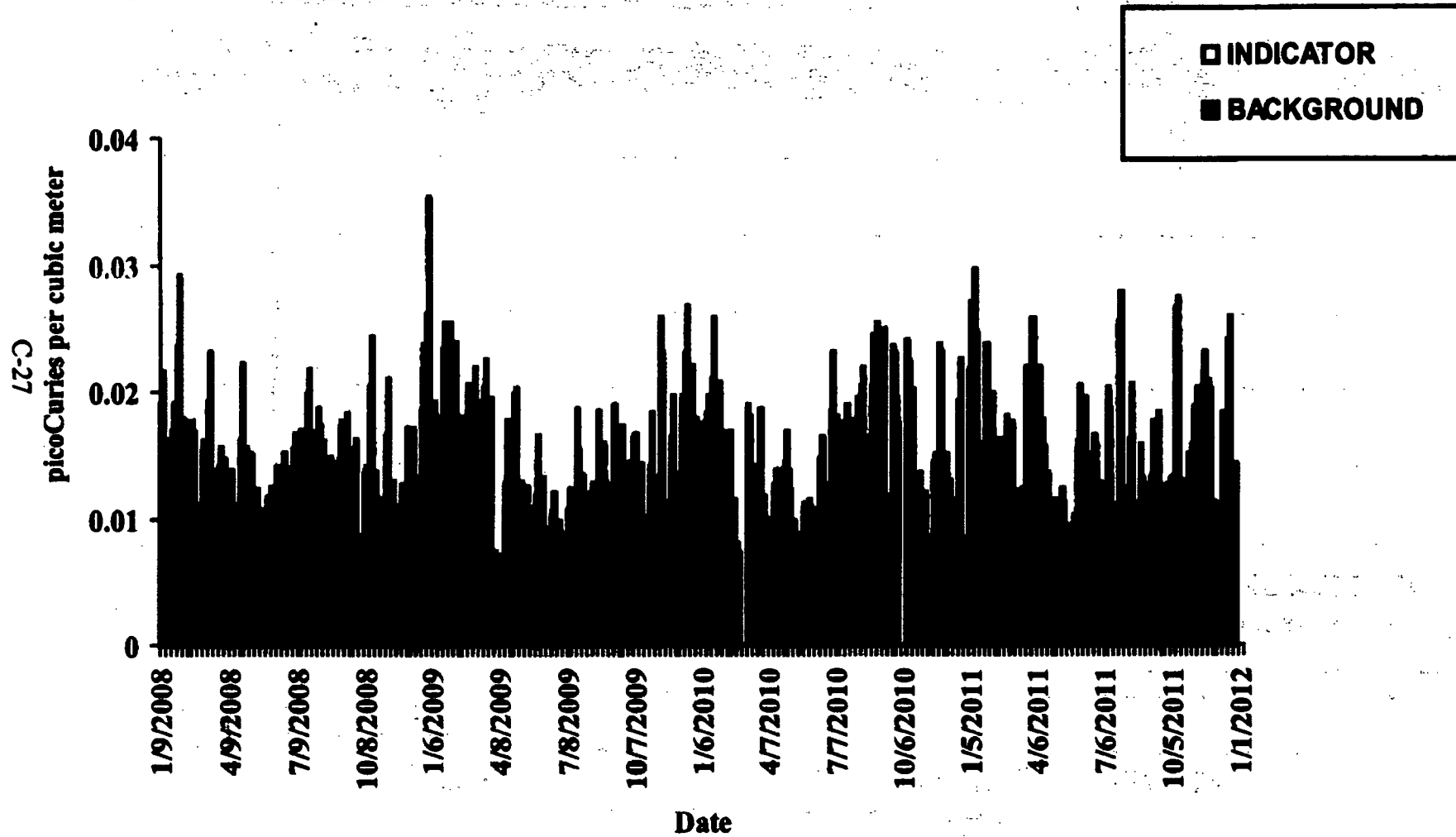
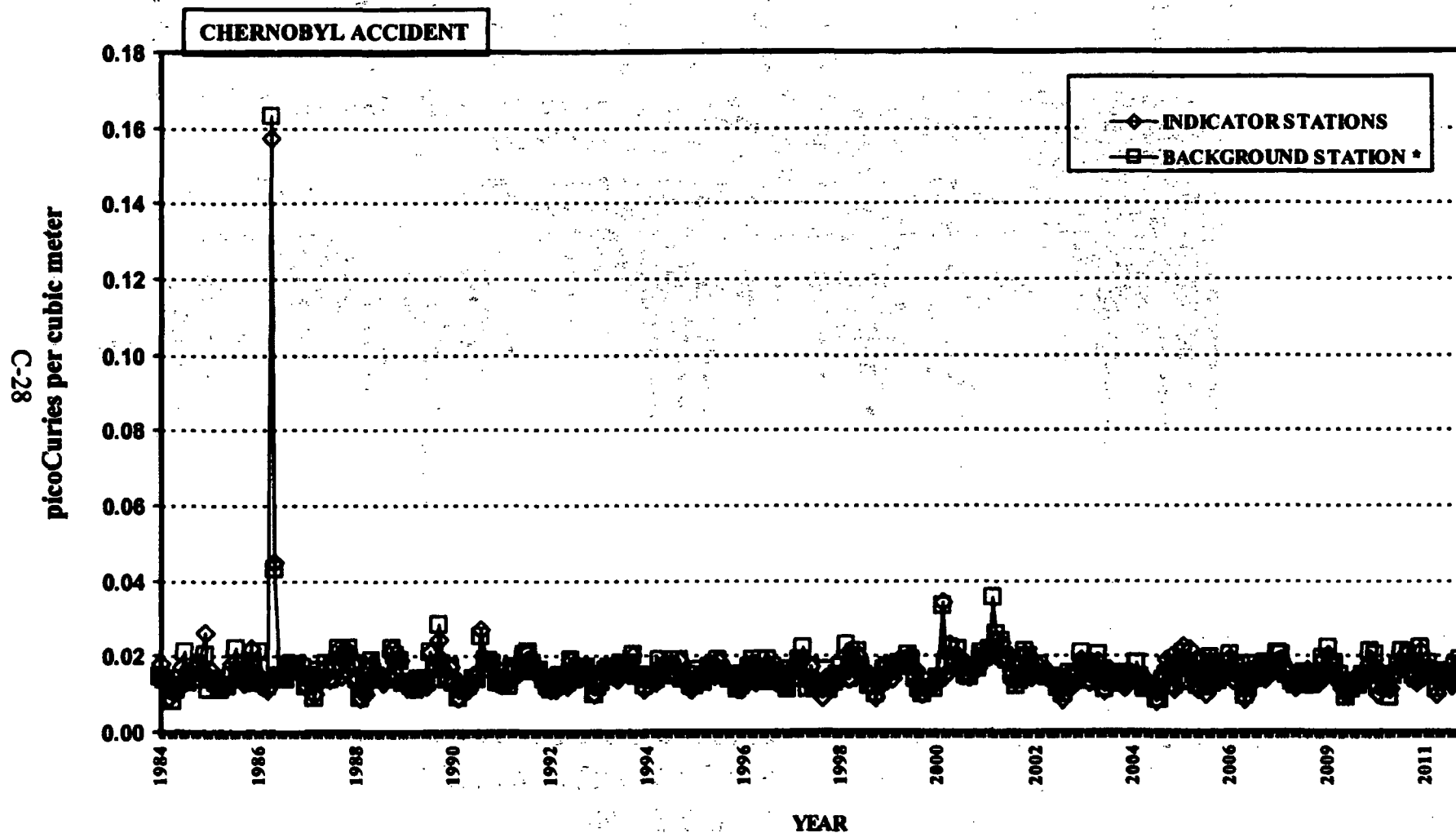


FIGURE C-5
MEAN MONTHLY GROSS BETA CONCENTRATIONS
IN AIR PARTICULATES
OYSTER CREEK GENERATING STATION, 1984 - 2011



* Data from Cookstown station ONLY after December 1996

FIGURE C-6
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 2011

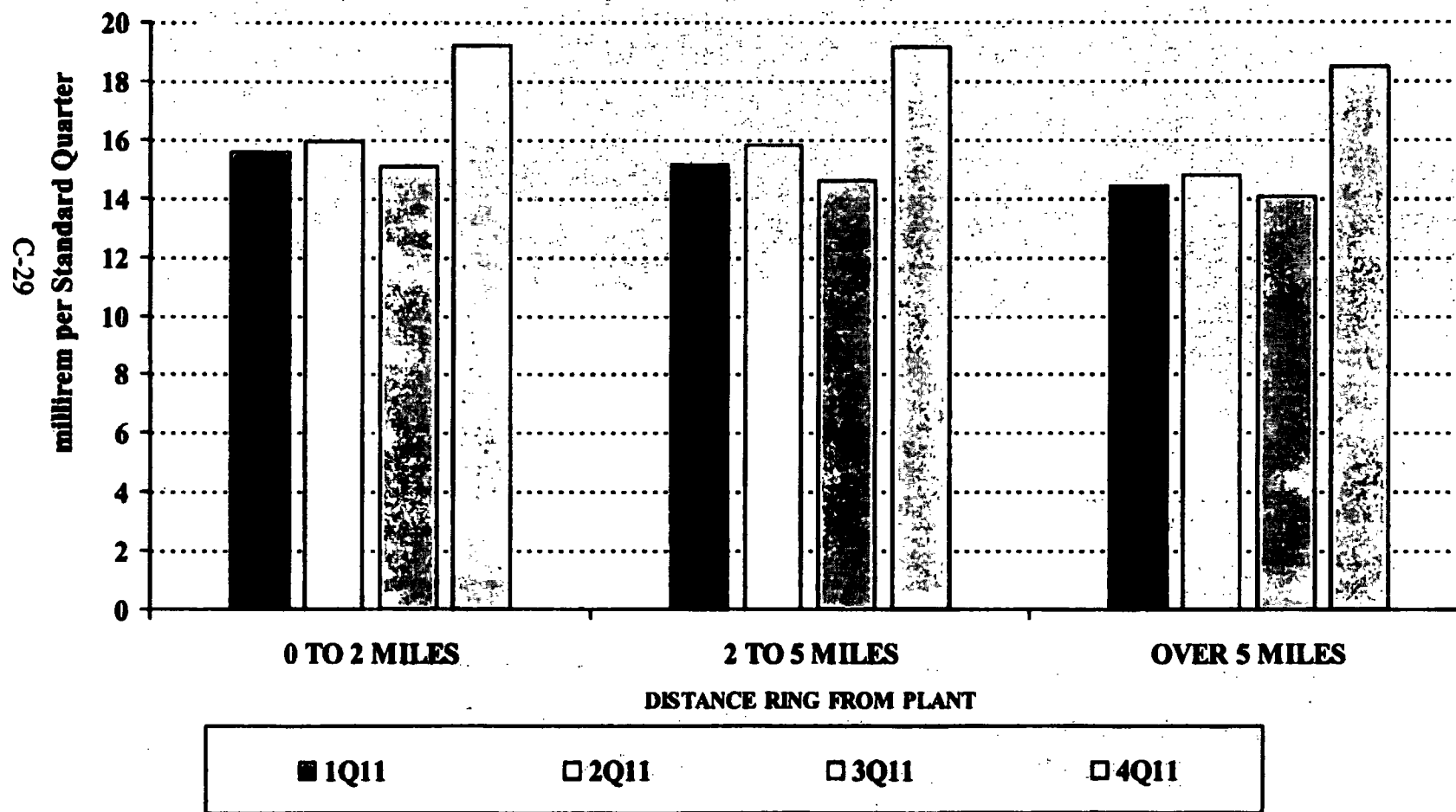
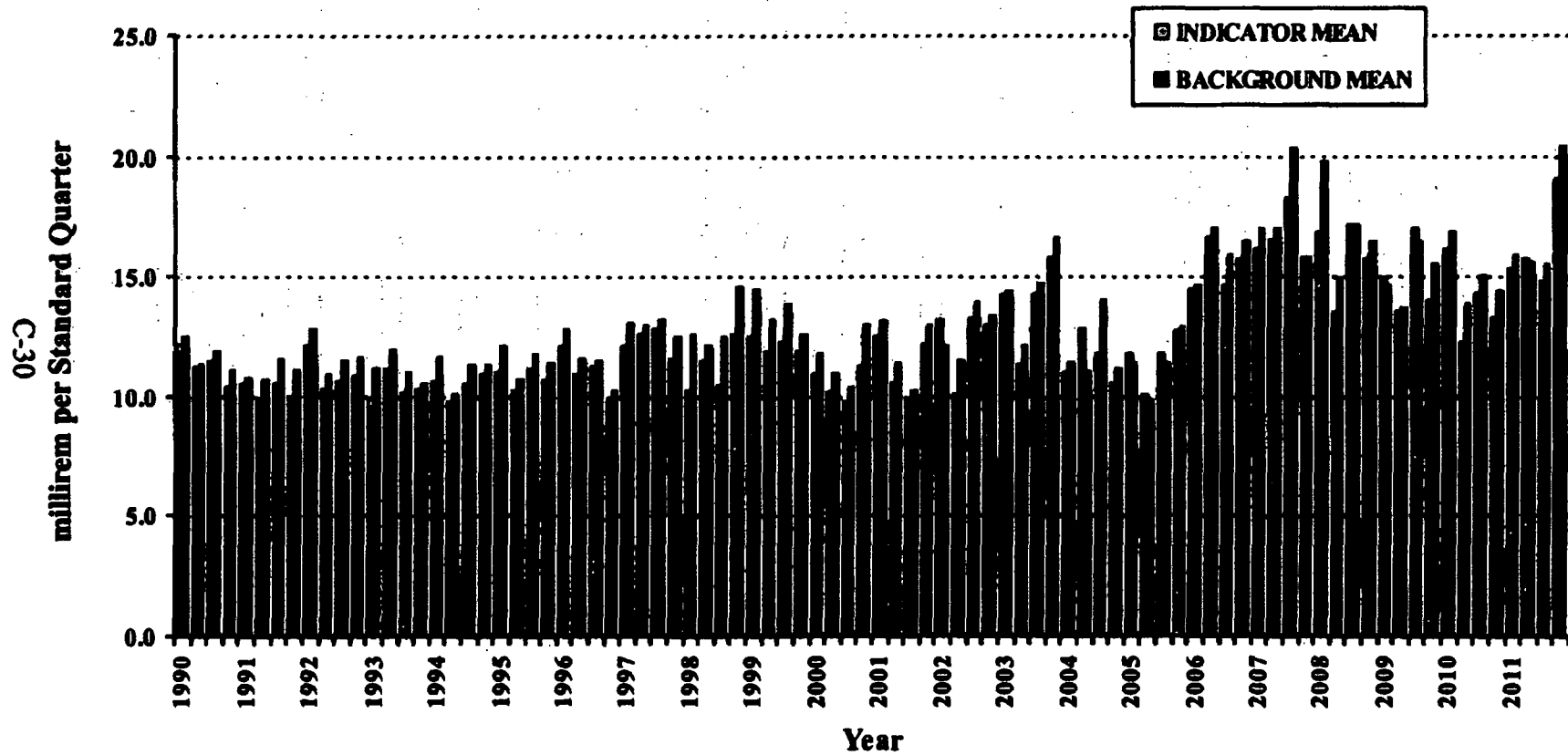


FIGURE C-7
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 1990 – 2011*



* Harshaw Model 110 TLDs were used during the first quarter of 2001. Panasonic Model 814 TLDs were used in the second, third, and fourth quarters of 2001.

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APPENDIX D

DATA TABLES AND FIGURES COMPARISON LABORATORY

The following section presents the results of data analysis performed by the QC laboratory, Environmental Inc. Duplicate samples were obtained from several locations and media and split between the primary laboratory, Teledyne Brown Engineering (TBE) and the QC laboratory. Comparisons of the results for all media were within expected ranges.

TABLE 1

TABLE 1
COMPARISON OF ANALYTICAL RESULTS
OBTAINED FROM TBE AND QC LABORATORIES

**TABLE D-1.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

COLLECTION PERIOD	24	QCA	QCB
04/25/11	< 174	< 172	< 162
08/26/11	< 194	< 197	< 144

TABLE D-1.2 CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Ce-134	Ce-137	Ba-140	La-140
24	04/25/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 17	< 5
	09/28/11	< 3	< 3	< 9	< 3	< 7	< 4	< 7	< 3	< 4	< 29	< 8
QCA	04/25/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 17	< 5
	09/28/11	< 4	< 4	< 8	< 4	< 7	< 4	< 8	< 4	< 4	< 33	< 10
QCB	04/25/11	< 2	< 3	< 3	< 3	< 6	< 3	< 2	< 4	< 2	< 10	< 2
	09/28/11	< 3	< 2	< 2	< 3	< 6	< 4	< 4	< 3	< 3	< 16	< 3

**TABLE D-II.1 CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	1N	1S	QCB 1N	QCB 1S
01/08/11 - 01/25/11	< 183	< 177	< 168	< 166
02/04/11 - 02/23/11	< 175	< 173	< 148	< 148
03/02/11 - 03/30/11	< 189	< 185	< 185	< 165
04/07/11 - 04/27/11	< 175	< 174	< 162	< 162
05/05/11 - 05/26/11	< 165	< 168	< 141	< 141
06/02/11 - 06/29/11	< 176	< 178	< 147	< 147
07/08/11 - 07/27/11	< 168	< 170	< 171	< 171
08/09/11 - 08/22/11	< 168	< 166	< 146	< 146
09/09/11 - 09/29/11	< 184	< 185	< 168	< 168
10/08/11 - 10/25/11	< 179	< 178	< 148	< 148
11/01/11 - 11/22/11	< 155	< 188	< 142	< 142
12/01/11 - 12/28/11	< 168	< 168	< 146	< 146

TABLE D-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Ce-134	Ce-137	Ba-140	La-140
1N	01/08/11 - 01/25/11	< 5	< 5	< 10	< 5	< 10	< 5	< 9	< 5	< 4	< 23	< 7
	02/04/11 - 02/23/11	< 4	< 3	< 10	< 3	< 7	< 4	< 8	< 3	< 4	< 30	< 7
	03/02/11 - 03/30/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 1	< 2	< 21	< 7
	04/07/11 - 04/27/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 20	< 6
	05/05/11 - 05/26/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 1	< 17	< 5
	06/02/11 - 06/29/11	< 4	< 4	< 9	< 3	< 7	< 5	< 8	< 4	< 4	< 25	< 8
	07/06/11 - 07/27/11	< 4	< 6	< 10	< 6	< 11	< 5	< 10	< 5	< 6	< 25	< 7
	08/09/11 - 08/22/11	< 4	< 5	< 11	< 5	< 9	< 6	< 9	< 4	< 4	< 32	< 9
	09/09/11 - 09/29/11	< 4	< 5	< 9	< 4	< 10	< 5	< 8	< 5	< 5	< 31	< 8
	10/06/11 - 10/25/11	< 6	< 7	< 12	< 8	< 13	< 7	< 12	< 7	< 6	< 32	< 12
	11/01/11 - 11/22/11	< 7	< 6	< 13	< 8	< 16	< 6	< 12	< 7	< 9	< 39	< 13
	12/01/11 - 12/28/11	< 6	< 7	< 11	< 4	< 12	< 7	< 12	< 5	< 7	< 36	< 10
	MEAN											
1S	01/08/11 - 01/25/11	< 4	< 5	< 9	< 4	< 9	< 4	< 9	< 4	< 6	< 23	< 9
	02/04/11 - 02/23/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 3	< 4	< 30	< 13
	03/02/11 - 03/30/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 22	< 7
	04/07/11 - 04/27/11	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 19	< 6
	05/05/11 - 05/26/11	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 1	< 1	< 18	< 3
	06/02/11 - 06/29/11	< 5	< 5	< 11	< 5	< 8	< 5	< 8	< 4	< 6	< 36	< 9
	07/06/11 - 07/27/11	< 7	< 5	< 11	< 6	< 14	< 4	< 12	< 6	< 7	< 36	< 14
	08/09/11 - 08/22/11	< 3	< 4	< 8	< 3	< 7	< 3	< 5	< 3	< 3	< 26	< 10
	09/09/11 - 09/29/11	< 3	< 4	< 8	< 3	< 6	< 4	< 7	< 3	< 4	< 28	< 8
	10/06/11 - 10/25/11	< 5	< 4	< 11	< 5	< 12	< 5	< 10	< 5	< 5	< 27	< 12
	11/01/11 - 11/22/11	< 5	< 6	< 10	< 5	< 10	< 6	< 9	< 4	< 6	< 27	< 7
	12/01/11 - 12/28/11	< 1	< 1	< 1	< 0	< 1	< 1	< 1	< 0	< 1	< 12	< 4

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TABLE D-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
QCB 1N	01/08/11 - 01/25/11	< 3	< 3	< 6	< 2	< 5	< 3	< 4	< 2	< 3	< 19	< 3
	02/04/11 - 02/23/11	< 3	< 2	< 4	< 2	< 4	< 3	< 5	< 2	< 3	< 15	< 2
	03/02/11 - 03/30/11	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 3	< 3	< 10	< 4
	04/07/11 - 04/27/11	< 2	< 2	< 5	< 2	< 4	< 3	< 3	< 2	< 3	< 12	< 2
	05/05/11 - 05/26/11	< 2	< 3	< 4	< 2	< 7	< 2	< 4	< 3	< 2	< 16	< 3
	06/02/11 - 06/29/11	< 3	< 2	< 5	< 2	< 4	< 3	< 4	< 5	< 4	< 22	< 3
	07/06/11 - 07/27/11	< 1	< 3	< 5	< 2	< 5	< 4	< 6	< 2	< 2	< 12	< 3
	08/09/11 - 08/22/11	< 2	< 2	< 4	< 3	< 4	< 3	< 3	< 3	< 2	< 12	< 3
	08/31/11 - 09/29/11	< 2	< 2	< 2	< 1	< 5	< 3	< 4	< 3	< 2	< 12	< 3
	10/06/11 - 10/25/11	< 3	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 3	< 15	< 3
	11/01/11 - 11/22/11	< 3	< 4	< 6	< 2	< 2	< 4	< 6	< 3	< 4	< 10	< 12
	12/01/11 - 12/28/11	< 1	< 1	< 2	< 1	< 2	< 2	< 3	< 1	< 1	< 26	< 4
MEAN												
QCB 1S	01/08/11 - 01/25/11	< 3	< 2	< 4	< 2	< 4	< 4	< 4	< 3	< 2	< 15	< 3
	02/04/11 - 02/23/11	< 2	< 2	< 2	< 1	< 4	< 3	< 4	< 2	< 3	< 11	< 2
	03/02/11 - 03/30/11	< 2	< 2	< 6	< 2	< 3	< 3	< 2	< 2	< 3	< 15	< 2
	04/07/11 - 04/27/11	< 4	< 2	< 10	< 3	< 7	< 2	< 4	< 3	< 4	< 18	< 5
	05/05/11 - 05/26/11	< 3	< 3	< 6	< 3	< 5	< 3	< 2	< 3	< 2	< 11	< 2
	06/02/11 - 06/29/11	< 3	< 4	< 7	< 2	< 5	< 3	< 6	< 2	< 3	< 25	< 4
	07/06/11 - 07/27/11	< 1	< 1	< 3	< 1	< 2	< 1	< 1	< 1	< 1	< 9	< 2
	08/09/11 - 08/22/11	< 2	< 2	< 3	< 2	< 4	< 2	< 3	< 2	< 2	< 13	< 3
	08/31/11 - 09/29/11	< 3	< 2	< 2	< 2	< 3	< 3	< 4	< 3	< 3	< 12	< 4
	10/06/11 - 10/25/11	< 2	< 2	< 2	< 2	< 4	< 4	< 6	< 3	< 2	< 11	< 1
	11/01/11 - 11/22/11	< 2	< 2	< 6	< 1	< 5	< 2	< 6	< 2	< 3	< 9	< 2
	12/01/11 - 12/28/11	< 2	< 2	< 5	< 1	< 2	< 3	< 4	< 3	< 3	< 12	< 3
MEAN												

TABLE D-III.1 CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

COLLECTION PERIOD	W-3C	QC8
01/11/11	< 163	< 142
05/11/11	< 188	< 141
07/14/11	< 165	< 150
10/12/11	< 163	< 144

TABLE D-III.2 CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Ce-134	Ce-137	Ba-140	La-140
W-3C	01/11/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 26	< 7
	05/11/11	< 4	< 4	< 7	< 4	< 7	< 4	< 7	< 12	< 3	< 4	< 26	< 9
	07/14/11	< 5	< 6	< 14	< 5	< 12	< 6	< 11	< 11	< 5	< 6	< 27	< 9
	10/12/11	< 7	< 6	< 16	< 8	< 12	< 8	< 9	< 9	< 6	< 6	< 29	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
QCB	01/11/11	< 2	< 1	< 3	< 1	< 6	< 1	< 3	< 3	< 3	< 3	< 6	< 2
	05/11/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 4	< 2	< 2	< 10	< 2
	07/14/11	< 3	< 3	< 5	< 3	< 3	< 4	< 5	< 13	< 2	< 2	< 20	< 5
	10/12/11	< 5	< 6	< 13	< 4	< 11	< 5	< 6	< 10	< 5	< 4	< 38	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

**TABLE D-IV.1 CONCENTRATIONS OF GAMMA EMITTERS IN CLAM SAMPLES
COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
24	04/25/11	1520 ± 696	< 58	< 69	< 150	< 51	< 123	< 50	< 57
	09/26/11	1620 ± 724	< 75	< 66	< 133	< 68	< 140	< 82	< 66
QCA	04/25/11	2160 ± 525	< 37	< 46	< 139	< 45	< 87	< 37	< 44
QCB	04/25/11	1284 ± 268	< 12	< 16	< 39	< 13	< 18	< 14	< 11
	MEAN*	1646 ± 741	-	-	-	-	-	-	-

TABLE D-V.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

SITE	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Co-60	Cs-134	Cs-137	Ra-226	Th-228
24	04/25/11	< 143	1170 ± 543	< 16	< 15	< 17	< 16	< 18	< 404	192 ± 48
	09/26/11	< 663	8580 ± 1380	< 74	< 81	< 90	< 82	< 81	1513 ± 129	403 ± 111
	MEAN*	-	4875 ± 10479	-	-	-	-	-	-	298 ± 299
QCA	04/25/11	< 312	935 ± 454	< 27	< 26	< 24	< 21	< 22	< 430	150 ± 60
	09/26/11	< 728	10500 ± 1250	< 72	< 69	< 81	< 88	< 86	2490 ± 1690	784 ± 174
	MEAN*	-	5718 ± 1128	-	-	-	-	-	-	467 ± 897
QCB	04/25/11	< 92	344 ± 344	< 8	< 6	< 7	< 7	< 8	< 233	< 819
	09/26/11	< 218	5942 ± 5942	< 15	< 19	< 16	< 24	< 20	1539 ± 674	< 1791
	MEAN*	-	3143 ± 7817	-	-	-	-	-	-	-

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

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TABLE D-VI.1 CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	COLLECTION PERIOD	Sr-89	Sr-90	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140	
36	Cabbage	07/19/11	< 10	< 2.2	2120 ± 323	< 60	< 14	< 17	< 106	< 27
	Collards	07/19/11	< 13	2.7 ± 1.5	3300 ± 134	< 18	< 5	< 5	< 39	< 10
	Kale	07/19/11	< 12	4.4 ± 1.6	3450 ± 147	< 12	< 3	< 4	< 26	< 8
	Cabbage	08/16/11	< 18	< 3.2	3060 ± 400	< 34	< 19	< 19	< 89	< 24
	Collards	08/16/11	< 18	< 4.9	3580 ± 429	< 23	< 10	< 16	< 51	< 10
	Kale	08/16/11	< 17	< 4.6	2980 ± 469	< 40	< 18	< 22	< 103	< 39
	Cabbage	09/13/11	< 19	< 2.5	2180 ± 304	< 30	< 13	< 15	< 70	< 17
	Collards	09/13/11	< 22	4.1 ± 1.9	4300 ± 513	< 10	< 10	< 9	< 51	< 17
	Kale	09/13/11	< 13	5.5 ± 1.6	4260 ± 562	< 49	< 24	< 24	< 126	< 34
	Cabbage	10/25/11	< 14	< 3.2	2760 ± 342	< 53	< 16	< 16	< 102	< 36
	Collards	10/25/11	< 19	< 3.4	4720 ± 456	< 59	< 15	< 18	< 110	< 35
	Kale	10/25/11	< 17	4.9 ± 2.4	5200 ± 474	< 60	< 17	< 17	< 126	< 36
		MEAN*		4.3 ± 2.1	3493 ± 1936	-	-	-	-	-
QCA	Cabbage	07/19/11	< 11	< 2.3	2420 ± 319	< 56	< 14	< 13	< 105	< 21
	Collards	07/19/11	< 13	3.1 ± 1.7	4590 ± 174	< 26	< 7	< 7	< 56	< 67
	Kale	07/19/11	< 13	3.6 ± 1.7	3690 ± 142	< 15	< 4	< 5	< 35	< 9
		MEAN*		3.3 ± 0.7	3567 ± 2180	-	-	-	-	-
QCB	Cabbage	07/19/11	< 2	4.0 ± 1.0	1723 ± 226	< 25	< 10	< 8	< 38	< 13
	Collards	07/19/11	< 5	7.0 ± 2.0	4784 ± 368	< 26	< 15	< 13	< 38	< 9
	Kale	07/19/11	< 7	< 4.0	4801 ± 374	< 17	< 13	< 9	< 54	< 5
		MEAN*		5.5 ± 4.2	3769 ± 3544	-	-	-	-	-

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

APPENDIX E

INTER-LABORATORY COMPARISON PROGRAM

TABLE E-1

ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)			
March 2011	E7460-396	Milk	Sr-89	pCi/L	98.8	97.4	1.01	A			
			Sr-90	pCi/L	15.2	15.8	0.96	A			
March 2011	E7461-396	Milk	I-131	pCi/L	92.9	96.9	0.96	A			
			Ce-141	pCi/L	not provided by Analytics for this study						
			Cr-51	pCi/L	398	298	1.34	N (1)			
			Cs-134	pCi/L	130	130	1.00	A			
			Cs-137	pCi/L	232	205	1.13	A			
			Co-58	pCi/L	121	113	1.07	A			
			Mn-54	pCi/L	289	266	1.09	A			
			Fe-59	pCi/L	201	175	1.15	A			
			Zn-65	pCi/L	287	261	1.10	A			
			Co-60	pCi/L	188	172	1.08	A			
			March 2011	E7463-396	AP	Ce-141	pCi	not provided by Analytics for this study			
						Cr-51	pCi	243	215	1.13	A
						Cs-134	pCi	85.0	94.2	0.90	A
						Cs-137	pCi	168	148	1.14	A
Co-58	pCi	89.2				81.8	1.09	A			
Mn-54	pCi	171				192	0.89	A			
Fe-59	pCi	129				126	1.02	A			
Zn-65	pCi	159				189	0.84	A			
Co-60	pCi	132				124	1.06	A			
March 2011	E7462-396	Charcoal				I-131	pCi	96.5	96.3	1.00	A
June 2011	E7851-396	Milk	Sr-89	pCi/L	96.7	103	0.94	A			
			Sr-90	pCi/L	13.8	15.6	0.88	A			
June 2011	E7852-396	Milk	I-131	pCi/L	110	103.0	1.07	A			
			Ce-141	pCi/L	68.1	79.9	0.85	A			
			Cr-51	pCi/L	188	206	0.90	A			
			Cs-134	pCi/L	164	190	0.86	A			
			Cs-137	pCi/L	140	138	1.01	A			
			Co-58	pCi/L	141	152	0.93	A			
			Mn-54	pCi/L	136	138	0.99	A			
			Fe-59	pCi/L	128	123	1.04	A			
			Zn-65	pCi/L	263	261	1.01	A			
			Co-60	pCi/L	189	195	0.97	A			
			June 2011	E7854-396	AP	Ce-141	pCi	49.9	42.9	1.16	A
						Cr-51	pCi	95.6	110	0.87	A
						Cs-134	pCi	104	102	1.02	A
						Cs-137	pCi	83.8	74.0	1.13	A
Co-58	pCi	90.7				81.3	1.12	A			
Mn-54	pCi	74.5				73.9	1.01	A			
Fe-59	pCi	62.0				66.1	0.94	A			
Zn-65	pCi	140				140	1.00	A			
Co-60	pCi	119				104	1.14	A			
June 2011	E7853-396	Charcoal	I-131	pCi	76.2	86.1	0.89	A			

TABLE E-1

ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)		
September 2011	E8070-396	Milk	Sr-89	pCi/L	102	90.8	1.12	A		
			Sr-90	pCi/L	13.2	14.7	0.90	A		
	E8071-396	Milk	I-131	pCi/L	74.2	89.2	0.83	A		
			Ce-141	pCi/L	66.9	66.7	1.00	A		
			Cr-51	pCi/L	249	226	1.10	A		
			Cs-134	pCi/L	116	128	0.91	A		
			Cs-137	pCi/L	106	114	0.93	A		
			Co-58	pCi/L	95.4	97.5	0.98	A		
			Mn-54	pCi/L	147	151	0.97	A		
			Fe-59	pCi/L	53.1	54.8	0.97	A		
			Zn-65	pCi/L	175	180	0.97	A		
			Co-60	pCi/L	150	157	0.96	A		
			E8073-396	AP	Ce-141	pCi	66.6	67.5	0.99	A
					Cr-51	pCi	263	229	1.15	A
					Cs-134	pCi	139	130	1.07	A
Cs-137	pCi	110			115	0.96	A			
Co-58	pCi	108			98.6	1.10	A			
Mn-54	pCi	152			153	0.99	A			
Fe-59	pCi	57.5			55.5	1.04	A			
Zn-65	pCi	190			183	1.04	A			
E8072-396	Charcoal	I-131	pCi	77.6	80.6	0.96	A			
December, 2011	E8230-396	Milk	Sr-89	pCi/L	93.3	93.1	1.00	A		
			Sr-90	pCi/L	12.7	15.4	0.82	A		
	E8231-396	Milk	I-131	pCi/L	82.5	90.2	0.91	A		
			Ce-141	pCi/L	not provided by Analytics for this study					
			Cr-51	pCi/L	465	566	0.82	A		
			Cs-134	pCi/L	142	171	0.83	A		
			Cs-137	pCi/L	185	210	0.88	A		
			Co-58	pCi/L	177	221	0.80	A		
			Mn-54	pCi/L	208	241	0.86	A		
			Fe-59	pCi/L	164	183	0.90	A		
			Zn-65	pCi/L	259	291	0.89	A		
			Co-60	pCi/L	224	270	0.83	A		
E8233-396	AP	Ce-141	pCi	not provided by Analytics for this study						
		Cr-51	pCi	344	368	0.93	A			
		Cs-134	pCi	105	111	0.95	A			
		Cs-137	pCi	129	137	0.94	A			
		Co-58	pCi	145	144	1.01	A			
		Mn-54	pCi	137	157	0.87	A			
		Fe-59	pCi	119	119	1.00	A			
		Zn-65	pCi	145	190	0.76	W			
Co-60	pCi	168	176	0.95	A					

TABLE E-1

**ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 3 OF 3)**

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2011	E8232-396	Charcoal	I-131	pCi	100	89.5	1.12	A

(1) Sample appears to be biased high. Corrective Action evaluated after the 2nd Quarter Analytics PE sample; no action required. NCR 11-13

(a) Teledyne Brown Engineering reported result.

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

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

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

TABLE E-2

ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)			
May 2011	RAD-85	Water	Sr-89	pCi/L	59.8	63.2	51.1 - 71.2	A			
			Sr-90	pCi/L	42.5	42.5	31.3 - 48.8	A			
			Ba-133	pCi/L	73.3	75.3	63.0 - 82.8	A			
			Cs-134	pCi/L	64.9	72.9	59.5 - 80.2	A			
			Cs-137	pCi/L	74.6	77.0	69.3 - 87.4	A			
			Co-60	pCi/L	87.8	88.8	79.9 - 100	A			
			Zn-65	pCi/L	103	98.9	89.0 - 118	A			
			Gr-A	pCi/L	64.1	50.1	28.1 - 62.9	N (1)			
			Gr-B	pCi/L	51.8	49.8	33.8 - 58.9	A			
			I-131	pCi/L	27.4	27.5	22.9 - 32.3	A			
			U-Nat	pCi/L	38.5	39.8	32.2 - 44.4	A			
			H-3	pCi/L	10057	10200	8870 - 11200	A			
				MRAD-14	Filter	Gr-A	pCi/filter	79.7	74.3	38.5 - 112	A
			November 2011	RAD-87	Water	Sr-89	pCi/L	81.0	69.7	58.9 - 77.9	N (2)
Sr-90	pCi/L	35.5				41.4	30.2 - 47.2	A			
Ba-133	pCi/L	90.7				96.9	81.8 - 106	A			
Cs-134	pCi/L	36.6				33.4	28.3 - 38.7	A			
Cs-137	pCi/L	44.7				44.3	39.4 - 51.7	A			
Co-60	pCi/L	118.7				119	107 - 133	A			
Zn-65	pCi/L	80.2				76.8	68.9 - 92.5	A			
Gr-A	pCi/L	34.2				53.2	27.8 - 68.6	A			
Gr-B	pCi/L	39.3				45.9	30.9 - 53.1	A			
I-131	pCi/L	22.9				27.5	22.9 - 32.3	A			
U-Nat	pCi/L	48.8				48.6	39.4 - 54.0	A			
H-3	pCi/L	15733				17400	15200 - 19100	A			
	MRAD-15	Filter				Gr-A	pCi/filter	44.6	58.4	30.3 - 87.8	A

(1) The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve. NCR 11-08

(2) Sr-89 TBE to known ratio of 1.16 fell within acceptable range of $\pm 20\%$. No action required. NCR 11-16

(a) Teledyne Brown Engineering reported result.

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

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

TABLE E-3

DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 1 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
March 2011	11-MaW24	Water	Cs-134	Bq/L	19.1	21.5	15.1 - 28.0	A
			Cs-137	Bq/L	29.0	29.4	20.6 - 38.2	A
			Co-57	Bq/L	0.139		(1)	A
			Co-60	Bq/L	23.9	24.6	17.2 - 32.0	A
			H-3	Bq/L	265	243	170 - 316	A
			Mn-54	Bq/L	31.8	31.6	22.1 - 41.1	A
			K-40	Bq/L	94.8	91	64 - 118	A
			Sr-90	Bq/L	9.64	8.72	6.10 - 11.34	A
	Zn-65	Bq/L	-0.142		(1)	A		
	11-GrW24	Water	Gr-A	Bq/L	0.767	1.136	0.341 - 1.931	A
			Gr-B	Bq/L	3.43	2.96	1.48 - 4.44	A
	11-MaS24	Soil	Cs-134	Bq/kg	612	680	476 - 884	A
			Cs-137	Bq/kg	772	758	531 - 985	A
			Co-57	Bq/kg	910	927	649 - 1205	A
			Co-60	Bq/kg	500	482	337 - 627	A
			Mn-54	Bq/kg	0.607		(1)	A
			K-40	Bq/kg	569	540	378 - 702	A
			Sr-90	Bq/kg	NR	160	112 - 208	N (2)
			Zn-65	Bq/kg	1497	1359	951 - 1767	A
	11-RdF24	AP	Cs-134	Bq/sample	3.26	3.49	2.44 - 4.54	A
			Cs-137	Bq/sample	2.36	2.28	1.60 - 2.96	A
			Co-57	Bq/sample	3.30	3.33	2.33 - 4.33	A
			Co-60	Bq/sample	0.0765		(1)	A
			Mn-54	Bq/sample	2.84	2.84	1.85 - 3.43	A
			Sr-90	Bq/sample	NR	1.36	0.95 - 1.77	N (2)
			Zn-65	Bq/sample	3.30	3.18	2.23 - 4.13	A
	11-GrF24	AP	Gr-A	Bq/sample	0.101	0.659	0.198 - 1.120	N (3)
			Gr-B	Bq/sample	1.23	1.323	0.662 - 1.985	A
	11-RdV24	Vegetation	Cs-134	Bq/sample	4.97	5.50	3.85 - 7.15	A
			Cs-137	Bq/sample	0.0356		(1)	A
			Co-57	Bq/sample	10.8	9.94	6.96 - 12.92	A
Co-60			Bq/sample	4.89	4.91	3.44 - 6.38	A	
Mn-54			Bq/sample	6.42	6.40	4.48 - 8.32	A	
Sr-90			Bq/sample	NR	2.46	1.72 - 3.20	N (2)	
Zn-65			Bq/sample	3.07	2.99	2.09 - 3.89	A	
September 2011	11-MaW25	Water	Cs-134	Bq/L	16.0	19.1	13.4 - 24.8	A
			Cs-137	Bq/L	0.0043		(1)	A
			Co-57	Bq/L	33.1	36.6	25.6 - 47.6	A
			Co-60	Bq/L	26.9	29.3	20.5 - 38.1	A
			H-3	Bq/L	1011	1014	710 - 1318	A
			Mn-54	Bq/L	23.2	25.0	17.5 - 32.5	A
			K-40	Bq/L	147	156	109 - 203	A
			Sr-90	Bq/L	15.8	14.2	9.9 - 18.5	A
			Zn-65	Bq/L	27.3	28.5	20.0 - 37.1	A

TABLE E-3

DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 2 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
September 2011	11-GrW25	Water	Gr-A	Bq/L	0.894	0.866	0.260 - 1.472	A
			Gr-B	Bq/L	5.87	4.81	2.41 - 7.22	A
September 2011	11-MaS25	Soil	Cs-134	Bq/kg	-0.213		(1)	A
			Cs-137	Bq/kg	1110	979	685 - 1273	A
			Co-57	Bq/kg	1290	1180	826 - 1534	A
			Co-60	Bq/kg	731	644	451 - 837	A
			Mn-54	Bq/kg	987	848	594 - 1102	A
			K-40	Bq/kg	753	625	438 - 813	W
			Sr-90	Bq/kg	276	320	224 - 416	A
			Zn-65	Bq/kg	1870	1560	1092 - 2028	A
September 2011	11-RdF25	AP	Cs-134	Bq/sample	-0.043		(1)	A
			Cs-137	Bq/sample	3.09	2.60	1.82 - 3.38	A
			Co-57	Bq/sample	5.36	5.09	3.56 - 6.62	A
			Co-60	Bq/sample	3.41	3.20	2.24 - 4.16	A
			Mn-54	Bq/sample	0.067		(1)	A
			Sr-90	Bq/sample	1.84	1.67	1.17 - 2.17	A
			Zn-65	Bq/sample	5.17	4.11	2.88 - 5.34	W
	11-GrF25	AP	Gr-A	Bq/sample	0.0058		(1)	A
			Gr-B	Bq/sample	-0.01		(1)	A
	11-RdV25	Vegetation	Cs-134	Bq/sample	0.0081		(1)	A
			Cs-137	Bq/sample	4.94	4.71	3.30 - 6.12	A
			Co-57	Bq/sample	0.0639		(1)	A
			Co-60	Bq/sample	3.36	3.38	2.37 - 4.39	A
			Mn-54	Bq/sample	5.89	5.71	4.00 - 7.42	A
Sr-90			Bq/sample	1.31	1.26	0.88 - 1.64	A	
Zn-65			Bq/sample	6.54	6.39	4.47 - 8.31	A	

(1) False positive test.

(2) Evaluated as failed due to not reporting a previously reported analyte. NCR 11-11

(3) The filler for Gross Alpha was counted on the wrong side. Recounted on the correct side resulted in acceptable results. NCR 11-11

(a) Teledyne Brown Engineering reported result.

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

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

TABLE E-4

**ERA (a) STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM^a
ENVIRONMENTAL, INC., 2011**

(Page 1 of 1)

Lab Code	Date	Analysis	Concentration (pCi/L)			Acceptance
			Laboratory Result ^b	ERA Result ^c	Control Limits	
STW-1243	04/04/11	Sr-89	68.2 ± 5.8	63.2	51.1 - 71.2	Pass
STW-1243	04/04/11	Sr-90	44.3 ± 2.4	42.5	31.3 - 48.8	Pass
STW-1244	04/04/11	Ba-133	69.8 ± 3.9	75.3	63.0 - 82.8	Pass
STW-1244	04/04/11	Co-60	87.9 ± 3.8	88.8	79.9 - 100.0	Pass
STW-1244	04/04/11	Cs-134	69.5 ± 3.7	72.9	59.5 - 80.2	Pass
STW-1244	04/04/11	Cs-137	77.9 ± 5.3	77.0	69.3 - 87.4	Pass
STW-1244	04/04/11	Zn-65	105.2 ± 8.4	98.9	89.0 - 118.0	Pass
STW-1245	04/04/11	Gr. Alpha	41.5 ± 2.3	50.1	26.1 - 62.9	Pass
STW-1245	04/04/11	Gr. Beta	48.9 ± 1.8	49.8	33.8 - 56.9	Pass
STW-1246	04/04/11	I-131	26.6 ± 1.7	27.5	22.9 - 32.3	Pass
STW-1248	04/04/11	H-3	10322 ± 285	10200.0	8870 - 11200	Pass
STW-1256	10/07/11	Sr-89	68.7 ± 6.0	69.7	56.9 - 77.9	Pass
STW-1256	10/07/11	Sr-90	36.9 ± 2.4	41.1	30.2 - 47.2	Pass
STW-1257	10/07/11	Ba-133	88.2 ± 7.8	96.9	81.8 - 106.0	Pass
STW-1257	10/07/11	Co-60	116.5 ± 7.1	119.0	107.0 - 133.0	Pass
STW-1257 ^d	10/07/11	Cs-134	38.8 ± 8.0	33.4	26.3 - 36.7	Fail
STW-1257	10/07/11	Cs-137	45.6 ± 7.3	44.3	39.4 - 51.7	Pass
STW-1257	10/07/11	Zn-65	84.9 ± 15.4	76.8	68.9 - 92.5	Pass
STW-1258	10/07/11	Gr. Alpha	35.7 ± 3.8	53.2	27.8 - 66.6	Pass
STW-1258	10/07/11	Gr. Beta	36.1 ± 3.3	45.9	30.9 - 53.1	Pass
STW-1259	10/07/11	I-131	25.0 ± 1.1	27.5	22.9 - 32.3	Pass
STW-1261	10/07/11	H-3	17435 ± 382	17400	15200 - 19100	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 sample was reanalyzed. Result of reanalysis was acceptable, 32.9 ± 7.4 pCi/L.

TABLE E-5

DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)^a
ENVIRONMENTAL, INC., 2011

(Page 1 of 2)

Lab Code ^c	Date	Analysis	Concentration ^b		Limits ^d	Acceptance
			Laboratory result	Activity		
STW-1237	02/01/11	Co-57	< 0.2	0.00	-	Pass
STW-1237	02/01/11	Co-60	24.10 ± 0.40	24.60	17.20 - 32.00	Pass
STW-1237	02/01/11	Cs-134	19.80 ± 0.40	21.50	15.10 - 28.00	Pass
STW-1237	02/01/11	Cs-137	29.40 ± 0.50	29.40	20.60 - 38.20	Pass
STW-1237	02/01/11	H-3	238.90 ± 8.80	243.00	170.00 - 318.00	Pass
STW-1237	02/01/11	K-40	95.40 ± 3.10	91.00	64.00 - 118.00	Pass
STW-1237	02/01/11	Mn-54	32.50 ± 0.60	31.60	22.10 - 41.10	Pass
STW-1237	02/01/11	Sr-90	8.70 ± 0.70	8.72	6.10 - 11.34	Pass
STW-1237	02/01/11	Zn-65	< 0.5	0.00	-	Pass
STW-1238	02/01/11	Gr. Alpha	0.82 ± 0.07	1.14	0.34 - 1.93	Pass
STW-1238	02/01/11	Gr. Beta	2.82 ± 0.07	2.96	1.48 - 4.44	Pass
STVE-1239	02/01/11	Co-57	11.27 ± 0.21	9.94	6.96 - 12.92	Pass
STVE-1239	02/01/11	Co-60	4.95 ± 0.16	4.91	3.44 - 6.38	Pass
STVE-1239	02/01/11	Cs-134	5.18 ± 0.19	5.50	3.85 - 7.15	Pass
STVE-1239	02/01/11	Cs-137	< 0.09	0.00	-	Pass
STVE-1239	02/01/11	Mn-54	6.91 ± 0.25	6.40	4.48 - 8.32	Pass
STVE-1239	02/01/11	Zn-65	3.10 ± 0.32	2.99	2.09 - 3.89	Pass
STSO-1240	02/01/11	Co-57	984.10 ± 4.10	927.00	649.00 - 1205.00	Pass
STSO-1240	02/01/11	Co-60	540.70 ± 3.00	482.00	337.00 - 627.00	Pass
STSO-1240	02/01/11	Cs-134	726.70 ± 5.92	680.00	476.00 - 884.00	Pass
STSO-1240	02/01/11	Cs-137	883.10 ± 4.70	758.00	531.00 - 985.00	Pass
STSO-1240	02/01/11	K-40	622.70 ± 16.70	540.00	378.00 - 702.00	Pass
STSO-1240	02/01/11	Mn-54	-0.30 ± 1.00	0.00	-	Pass
STSO-1240	02/01/11	Zn-65	1671.00 ± 13.10	1359.00	951.00 - 1767.00	Pass
STAP-1241	02/01/11	Co-57	3.48 ± 0.06	3.33	2.33 - 4.33	Pass
STAP-1241	02/01/11	Co-60	0.00 ± 0.02	0.00	-0.10 - 0.10	Pass
STAP-1241	02/01/11	Cs-134	3.44 ± 0.27	3.49	2.44 - 4.54	Pass
STAP-1241	02/01/11	Cs-137	2.46 ± 0.27	2.28	1.60 - 2.96	Pass
STAP-1241	02/01/11	Gr. Alpha	0.39 ± 0.05	0.66	0.20 - 1.12	Pass
STAP-1241	02/01/11	Gr. Beta	1.54 ± 0.07	1.32	0.66 - 1.99	Pass
STAP-1241	02/01/11	Mn-54	2.90 ± 0.10	2.64	1.85 - 3.43	Pass
STAP-1241	02/01/11	Sr-90	1.89 ± 0.15	1.36	0.95 - 1.77	Fail
STAP-1241	02/01/11	Zn-65	3.80 ± 0.18	3.18	2.23 - 4.13	Pass
STVE-1250	08/01/11	Co-57	0.01 ± 0.02	0.00	-	Pass
STVE-1250	08/01/11	Co-60	3.57 ± 0.13	3.38	2.37 - 4.39	Pass
STVE-1250	08/01/11	Cs-134	-0.02 ± 0.04	0.00	-0.10 - 0.10	Pass
STVE-1250	08/01/11	Cs-137	5.28 ± 0.20	4.71	3.30 - 6.12	Pass
STVE-1250	08/01/11	Mn-54	6.48 ± 0.22	5.71	4.00 - 7.42	Pass
STVE-1250	08/01/11	Zn-65	7.35 ± 0.34	6.39	4.47 - 8.31	Pass

**TABLE E-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)^a
ENVIRONMENTAL, INC., 2011
(Page 2 of 2)**

Lab Code ^c	Date	Analysis	Laboratory result	Concentration ^b		Acceptance
				Known Activity	Control Limits ^d	
STSO-1251	08/01/11	Co-57	1333.90 ± 4.20	1180.00	826.00 - 1534.00	Pass
STSO-1251	08/01/11	Co-60	701.30 ± 3.40	644.00	451.00 - 837.00	Pass
STSO-1251	08/01/11	Cs-134	0.71 ± 1.05	0.00	-	Pass
STSO-1251	08/01/11	Cs-137	1106.00 ± 5.60	979.00	685.00 - 1273.00	Pass
STSO-1251	08/01/11	K-40	749.20 ± 19.00	625.00	438.00 - 813.00	Pass
STSO-1251	08/01/11	Mn-54	984.30 ± 5.40	848.00	594.00 - 1102.00	Pass
STSO-1251 ^f	08/01/11	Sr-90	219.40 ± 16.70	320.00	224.00 - 416.00	Fail
STSO-1251	08/01/11	Zn-65	1639.90 ± 11.40	1560.00	1092.00 - 2028.00	Pass
STAP-1252	08/01/11	Co-57	5.06 ± 0.08	5.09	3.56 - 6.62	Pass
STAP-1252	08/01/11	Co-60	3.13 ± 0.09	3.20	2.24 - 4.16	Pass
STAP-1252	08/01/11	Cs-134	0.01 ± 0.03	0.00	-0.10 - 0.10	Pass
STAP-1252	08/01/11	Cs-137	2.61 ± 0.09	2.60	1.82 - 3.38	Pass
STAP-1252	08/01/11	Mn-54	0.01 ± 0.03	0.00	-0.10 - 0.10	Pass
STAP-1252	08/01/11	Sr-90	1.65 ± 0.16	1.67	1.17 - 2.17	Pass
STAP-1252	08/01/11	Zn-65	4.46 ± 0.23	4.11	2.88 - 5.34	Pass
STW-1254	08/01/11	Co-57	37.20 ± 0.50	36.60	25.60 - 47.60	Pass
STW-1254	08/01/11	Co-60	28.80 ± 0.40	29.30	20.50 - 38.10	Pass
STW-1254	08/01/11	Cs-134	18.00 ± 0.60	19.10	13.40 - 24.80	Pass
STW-1254	08/01/11	Cs-137	0.06 ± 0.13	0.00	-	Pass
STW-1254	08/01/11	H-3	1039.90 ± 17.90	1014.00	710.00 - 1318.00	Pass
STW-1254	08/01/11	K-40	161.40 ± 4.10	156.00	109.00 - 203.00	Pass
STW-1254	08/01/11	Mn-54	25.70 ± 0.50	25.00	17.50 - 32.50	Pass
STW-1254	08/01/11	Sr-90	15.60 ± 1.80	14.20	9.90 - 18.50	Pass
STW-1254	08/01/11	Zn-65	30.20 ± 0.90	28.50	20.00 - 37.10	Pass
STW-1255	08/01/11	Gr. Alpha	0.72 ± 0.12	0.87	0.26 - 1.47	Pass
STW-1255	08/01/11	Gr. Beta	4.71 ± 0.15	4.81	2.41 - 7.22	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. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide control limits.

^e No errors found in calculation or procedure, results of reanalysis; 1.73 Bq/filter.

^f The analyses were repeated through a strontium column; mean result of triplicate analyses, 304.2 Bq/kg.

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENTAL RESTORATION
WASHINGTON, D.C. 20545

Environmental Restoration
Annual Radiological Groundwater
Protection Program Report (ARGPPR)

Annual Report for 1998

APPENDIX F

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Environmental Restoration
Annual Radiological Groundwater
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Environmental Restoration
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Docket No: 50-219

OYSTER CREEK GENERATING STATION UNIT 1

Annual Radiological Groundwater Protection Program Report

1 January Through 31 December 2011

Prepared By

Teledyne Brown Engineering
Environmental Services

ExelonSM

Nuclear

Oyster Creek Generating Station
Forked River, NJ 08731

April 2012

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Appendix A Location Designation

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Table A-1 Radiological Groundwater Protection Program – Sampling Locations, Oyster Creek Generating Station, 2011

Figures

Figure A-1 Sampling locations – Selected Cohansey and Cape May Formation Wells, Oyster Creek Generating Station, 2011
Security-Related Information: Detailed maps of the Oyster Creek Generating Station have been withheld from public disclosure under 10 CFR 2.390 and N.J.S.A. 47:1A-1.1

Appendix B Data Tables

Tables

Table B-I.1 Concentrations of Tritium, Strontium-90, Gross Alpha and Gross Beta in Groundwater Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-I.2 Concentrations of Gamma Emitters in Groundwater Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-I.3 Concentrations of "Hard-To-Detects" in Groundwater Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-II.1 Concentrations of Tritium in Surface Water Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-II.2 Concentrations of Gamma Emitters in Surface Water Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-II.3 Concentrations of "Hard-To-Detects" in Surface Water Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

Table B-III.1 Concentrations of Tritium in Precipitation Water Samples Collected as Part of the Radiological Groundwater Protection Program, Oyster Creek Generating Station, 2011.

I. Summary and Conclusions

This report on the Radiological Groundwater Protection Program (RGPP) conducted for the Oyster Creek Generating Station (OCGS) by Exelon Generation Company LLC (Exelon) covers the period 01 January 2011 through 31 December 2011.

This report covers groundwater and surface water samples collected from the environment, both on and off station property in 2011. Two thousand one hundred and four analyses were performed on one thousand and seventy two samples from 65 locations.

There were three inadvertent releases of contaminated water into the groundwater during 2009. There is a plume located west of the turbine building and is monitored via a series of monitoring wells.

Gamma-emitting radionuclides were not detected in any of the groundwater well samples or surface water samples.

In the case of tritium, Exelon specified that its laboratories achieve a lower limit of detection 100 times lower than the drinking water limit specified by the United States Environmental Protection Agency (USEPA) (200 pCi/l versus 20,000 pCi/l).

As expected, tritium was detected in groundwater samples. 2011 Tritium concentrations varied from <200 to 994,000 pCi/l. The well with the highest concentration was MW-67. The flow of groundwater is in the direction of the intake and discharge canals.

No detectable tritium (greater than the MDC) was found in surface water or precipitation samples collected from onsite and offsite monitoring locations during 2011.

Strontium-89/90 was not detected in any groundwater sample during 2011.

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater samples during the second quarter sampling in 2011. Since this is the first year these analyses were performed as part of the RGPP for Oyster Creek, these results will be utilized to establish baseline levels.

There were 47 samples taken from 42 groundwater well locations. Gross Alpha (dissolved) was detected in 9 samples and ranged from 0.4 to 5.7 pCi/L. Gross Alpha (suspended) was detected in 19 samples and ranged from 1.2 to 19.9 pCi/L. Gross Beta (dissolved) was detected in 45 samples and ranged from 1.3

to 109 pCi/L. Gross Beta (suspended) was detected in 22 samples and ranged from 1.8 to 77.5 pCi/L.

"Hard-To-Detect" analyses were performed on a select group of groundwater locations to establish baseline levels. The analyses for groundwater included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235, and U-238. The isotopes of U-234 and U-238 were detected in three of nine groundwater monitoring locations. The U-234 concentrations ranged from 0.41 to 1.74 pCi/L and the U-238 concentrations ranged from 0.44 to 1.81 pCi/L. The levels detected are considered background.

II. Introduction

The Oyster Creek Nuclear Generating Station consists of a single boiling water reactor (BWR) and turbine generator capable of producing 650 megawatts of electricity. The Station operates under Nuclear Regulatory Commission (NRC) renewed facility operating license number DPR-16. Brackish water from Barnegat Bay is supplied to the circulating water system. The circulating water system is designed to supply a continuous flow of water from Barnegat Bay through the plant to remove the waste heat released by the power cycle in the Main Condenser. The circulating water system is comprised of the intake canal from Barnegat Bay to the plant, the Main Condenser Circulating Water System, the dilution plant, and the discharge canal to Barnegat Bay. The dilution plant portion of the system minimizes the adverse effects of hot discharge water on aquatic life in the discharge canal and Barnegat Bay to meet the conditions of the Oyster Creek New Jersey Pollutant Discharge Elimination system (NJPDES) Permit No. NJ0005550. Approximately 1 million gallons per minute of water are withdrawn from the intake canal for dilution and station use and returned to the discharge canal.

The Station is located in the Atlantic Coastal Plain physiographic province. Topography in the region of the Station is a slightly undulating coastal plain having low relief. The land surface gradually rises from sea level at Barnegat Bay, which is located east of the Station, to approximately 50 feet above mean sea level (AMSL) 2 miles inland. This region of the coastal plain has numerous tidal marshes and is incised by easterly flowing streams and creeks. Elevations at the Station property west of Route 9 range from approximately 0 to 15 feet AMSL immediately adjacent to the intake and discharge canals to slightly more than 30 feet AMSL in the northwest portion of the Station property. The 132-acre developed portion of the Site located within the "horseshoe" formed by the intake and discharge canals west of Route 9 has an approximate average elevation of 20 feet AMSL. In the immediate vicinity of the intake and discharge canals, the Station property slopes steeply down to the canal. The average elevation of the surface water level in the intake and discharge canals is approximately 1-foot AMSL. The remaining 637-acre portion of the Station located east of Route 9 is primarily vegetated and undeveloped. The ground surface is relatively level except for the steep slopes at areas adjacent to the intake and discharge canals.

The three shallowest stratigraphic units in the vicinity of the Oyster Creek area in descending order are the Cape May Formation, the Cohansey Formation, and the Kirkwood Formation. Some of the Station structures are constructed to depths of approximately 50 feet below ground surface (bgs). Excavations were completed from grade, through the fill, Cape May Formation, Upper Clay, and into the Cohansey Formation during construction. Consequently, the bottoms of

some Station structures are completed within the Cohansey Formation and some structures breach the Upper Clay.

The Cape May Formation regionally has an average thickness of 40 feet and at OCGS, the Cape May is described as a light gray to tan, medium- to fine-grained sand, with trace to some silt and occasional coarse sand. It is generally poorly compacted. The Cape May Formation varies from 0 to 21 feet in thickness based on historical boring logs. The variation principally is due to the varying amount of material excavated and replaced by fill during Station construction. When present, the thickness of the Cape May generally ranges from 15 to 20 feet thick. The base of the Cape May generally is defined by the presence of a dark clay unit referred to as the Upper Clay unit. The Upper Clay is a stiff to hard, gray, plastic organic clay containing inclusions (also described as lenses or partings) of dense fine sand with trace to some organic silt. The deposits of fine sand within the Upper Clay layer have high relative densities and occur as lenses or inclusions.

The Cohansey Formation is primarily composed of a light-colored, fine- to very coarse-grained quartzose sand with lenses of silt and clay. Although most borings at the Station do not penetrate the entire Cohansey Formation, this formation appears to be approximately 60 to 80 feet thick at OCGS. A clay sequence, referred to at the Station as the "Lower Clay", marks the base of the Cohansey, which generally is present to approximately 90 to 100 feet bgs. The lower clay is a dense gray medium- to fine-grained sand containing trace to some organic silt and layers or inclusions of very stiff to hard gray organic clay. The thickness of the lower clay is estimated to be approximately 10 to 20 feet in the vicinity of OCGS.

The Cohansey Formation is underlain by the Kirkwood Formation which consists of several stratigraphic units. The Kirkwood Formation is described as a medium- to fine-grained sand with trace silt. The thickness of this formation beneath the Station is unknown. The south domestic supply well terminates in the Kirkwood at a depth of 310 feet bgs. The Kirkwood thickness in Ocean County ranges from approximately 300 to 400 feet.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. (Midwest Labs) on samples collected in 2011.

A. Objectives of the RGPP

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

- Ensure that the site characterization of geology and hydrology provides an understanding of predominant ground water gradients based upon current site conditions.

- Identify site risk based on plant design and work practices
- Evaluate all SSCs that contain or could contain licensed material and for which there is a credible mechanism for the licensed material to reach groundwater.
 - Evaluate work practices that involve licensed material and for which there is a credible mechanism for the licensed material to reach groundwater.
- Perform on-site monitoring to ensure timely detection of inadvertent radiological releases to ground water.
 - Understand background concentrations of radioactive analytes outside of the REMP, as required.
 - Evaluate return/re-use of previously discharged radioactive effluents in gaseous or liquid effluents that are returned from the environment to the operating nuclear power facility.
 - Ensure controls are established for the selection, installation and retirement of monitoring wells.
 - Perform remediation protocols to prevent migration of licensed material off-site and to minimize decommissioning impacts.
- Ensure that records of leaks, spills, remediation efforts are retained and retrievable to meet the requirements of 10 CFR 50.75(g).
- Ensure periodic communications are held on the RGPP with the designated State/Local officials.
- Ensure timely verbal and written reporting occurs if there is an inadvertent release of licensed materials to the soil, groundwater or surface water.
- Document and report all applicable RGPP data.
- Identify and resolve deficiencies via the Corrective Action Process as delineated in LS-AA-120 "Issue Identification and Screening Process".
- Perform program oversight to ensure effective implementation of the voluntary RGPP.

B. Implementation of the Objectives

The objectives identified have been implemented at the Oyster Creek Generating Station through compliance with approved procedures EN-AA-408-4000, Radiological Groundwater Protection Program Implementation and site specific procedure EN-OC-408-4160, RGPP Reference Material for Oyster Creek Generating Station.

C. Program Description

Samples for the OCGS site were collected for Exelon by on-site personnel and Normandeau Associates, Inc. This section describes the general collection methods used to obtain environmental samples for the OCGS RGPP in 2011. Sample locations can be found in Table A-1, Appendix A.

1. Sample Collection

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures. Both groundwater and surface water are collected. Sample locations, sample collection frequencies and analytical frequencies are controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events.

2. Sample Analysis

Samples are analyzed in accordance with approved procedures that are based on industry standards.

3. Quality Control

Analytical laboratories are subject to internal quality assurance programs, industry cross-check programs, nuclear industry audits, as well as being certified by the State of New Jersey.

4. Data Interpretation

Station personnel review and evaluate all analytical data deliverables as data is received. Analytical data results are reviewed by both station personnel and independent consultants, including a hydrogeologist, for adverse trends or changes to hydrogeologic conditions.

D. Characteristics of Tritium (H-3)

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

Tritiated water behaves the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through the skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 10 days.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors. Also, tritium was released into the atmosphere from Chernobyl in 1986. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (He-3). This radioactive decay releases a beta particle (18.6 keV low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by TBE to analyze the environmental samples for radioactivity for the Oyster Creek Generating Station RGPP in 2011. The sampling frequencies are increased if activity is detected.

In order to achieve the stated objectives, the current program includes the

following analyses for groundwater, surface water, and precipitation water:

1. Gamma emitters
2. Gross strontium, Strontium-89 and Strontium-90
3. Tritium
4. Gross Alpha, Dissolved and Suspended and Gross Beta, Dissolved and Suspended
5. Selected transuranics
6. Fe-55
7. Ni-63

B. Data Interpretation

The radiological data collected prior to Oyster Creek Generating Station becoming operational, as well as background data from publicly available databases, were used as a baseline with which these operational data were compared. For the purpose of this report, Oyster Creek Generating Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criterion for the presence of activity. All analyses were designed to achieve the required OCGS detection capabilities for environmental sample analysis.

The minimum detectable concentration (MDC) is defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal as an after the fact estimate of the presence of activity.

2. Laboratory Measurements Uncertainty

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

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

Analytical uncertainties are reported at the 95% confidence level.

C. Background Analysis

1. Background Concentrations of Tritium

The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others. Additional detail may be found by consulting references.

a. Tritium Production

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

A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased significantly during the 1950s and peaked in 1963 with the signing of the limited test ban treaty. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment. Also, tritium was released into the atmosphere from Chernobyl in 1986.

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. One publicly available database that provides tritium concentrations in precipitation is the USEPA's RadNet database. RadNet provides tritium precipitation concentration data for samples collected at stations throughout the U.S. from 1978 up to and including 1996. Tritium concentrations in precipitation in New Jersey from 1978 through 1996 have ranged from 600 pCi/l in 1979 to 0 pCi/l in 1996, with an average of 185 pCi/l. Tritium concentrations in wells may still be above the 200 pCi/l detection limit from the external causes described above. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

c. Surface Water Data

Tritium concentrations are routinely measured in surface water bodies, including Oyster Creek and the Delaware River. New Jersey surface water data between 1978 and 1998 averaged 185 pCi/l.

The USEPA RadNet surface water data typically has a reported 'Combined Standard Uncertainty' of 2 standard deviations. This corresponds to a ± 36 to ± 100 pCi/l confidence bound on each given reported measurement so that the typical surface water background data provided by RadNet may be subject to measurement uncertainty of up to 100 pCi/l.

The radio-analytical laboratory counts tritium results to an Exelon specified LLD of 200 pCi/l with a typical uncertainty of ± 100 pCi/l. Therefore, sample results reported by TBE near this LLD can not be distinguished from natural background concentrations in surface water.

IV. Results and Discussion

A. Program Exceptions

1. Sample Anomalies

There are no samples anomalies in 2011.

2. Missed Samples

Exelon maintains a Radiological Groundwater Protection Program (RGPP) as part of the nuclear industry's voluntary groundwater protection initiative as described in NEI 07-07. As part of this program, samples are obtained routinely from monitoring wells and surface waters at Oyster Creek based on the frequencies outlined in station procedures. The following samples were not obtained as required by procedure:

MW-51

- Gamma, semi-annually
- Gross alpha, annually
- Gross beta, annually
- Select transuranics, annually
- Iron-55, annually
- Nickel-63, annually
- Strontium-89, annually
- Strontium-90, annually

Immediate actions taken:

MW-51 was dry 11 out of 12 months during sampling events. The one month a sample was obtained, there was only enough sample to perform tritium analysis. MW-51 is checked for water each sampling event and no additional actions are required.

3. LLDs Not Met

Required LLDs for Surface and Groundwater

Isotope	pCi/liter
H-3	200
Mn-54	15
Co-58	15
Fe-59	30
Co-60	15
Zn-65	30
Nb-95	15
Zr-95	30
I-131	15
Cs-134	15
Cs-137	15
Ba-140	60
La-140	15

Indicated LLDs for shorter lived radionuclides were not met due to a time lag between taking the samples and analyzing the samples as indicated on table B-I.2 and B-II.2.

B. Groundwater Results

Samples were collected from on-site locations in accordance with the station radiological groundwater protection program. As reported in CRA's 2006 Hydrogeologic Investigation Report, groundwater flow in the vicinity of the Torus Water Storage Tank and the Condensate Storage Tank is towards the intake and discharge canals.

Tritium

Samples from 55 locations were analyzed for tritium activity (Table B-I.1, Appendix B). Tritium was detected in 118 of 319 samples. The values ranged from < 200 to 994,000 pCi/l. The well with the highest concentration was MW-67 (Table B-I.1, Appendix B).

Strontium

Strontium-90 was not detected in any location sampled in 2011. (Table B-I.1, Appendix B)

Gross Alpha and Gross Beta (dissolved and suspended)

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater samples during the second sampling in 2011.

There were 47 samples taken from 42 groundwater well locations. Gross Alpha (dissolved) was detected in 9 samples and ranged from 0.4 to 5.7 pCi/L. Gross Alpha (suspended) was detected in 19 samples and ranged from 1.2 to 19.9 pCi/L. Gross Beta (dissolved) was detected in 45 samples and ranged from 1.3 to 109 pCi/L. Gross Beta (suspended) was detected in 22 samples and ranged from 1.8 to 77.5 pCi/L (Table B-I.1, Appendix B).

Gamma Emitters

No gamma emitting nuclides were detected in any of the samples analyzed during 2011 (Table B-I.2, Appendix B).

"Hard-To-Detect"

"Hard-To-Detect" analyses were performed on a select group of groundwater locations to establish background levels. The analyses for groundwater included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235, and U-238. The isotopes of U-234 and U-238 were detected in three of nine groundwater monitoring locations. The U-234 concentrations ranged from 0.41 to 1.74 pCi/L and the U-238 concentrations ranged from 0.44 to 1.81 pCi/L. The levels detected are considered background due to naturally occurring U-234 and U-238 (Table B-I.3, Appendix B).

C. Surface Water Results

Samples were collected from on-site locations in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from four locations were analyzed for tritium activity (Table B-II.1, Appendix B). No detectable tritium (greater than the LLD) was found in any surface water samples collected from onsite and offsite monitoring locations.

Strontium

Strontium-90 was not analyzed in 2011. (Table B-II.1, Appendix B)

Gross Alpha and Gross Beta (dissolved and suspended)

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were not analyzed in 2011.

Gamma Emitters

No gamma emitting nuclides, other than naturally occurring potassium-40, were detected in any of the samples analyzed. (Table B-II.2, Appendix B)

"Hard-To-Detect"

"Hard-To-Detect" analyses were not analyzed in 2011.

D. Precipitation Water Results

Precipitation samples were collected from on-site locations in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from six locations were analyzed for tritium activity (Table B-III.1, Appendix B). No detectable tritium (greater than the LLD) was found in any precipitation water samples collected from onsite and offsite monitoring locations.

E. Summary of Results – Inter-Laboratory Comparison Program

Inter-Laboratory Comparison Program results for TBE and Environmental Inc. (Midwest Labs) are presented in the 2011 Oyster Creek AREOR. This report is part of the AREOR

F. Leaks, Spills, and Releases

There were no abnormal releases during 2011.

G. Trends

Active remediation of tritium in groundwater due to the spills that occurred

in 2009 was initiated in October 2010. Trending of the data due to active remediation is on-going. Overall the station has seen a decreasing trend in tritium values although there was fluctuation in individual wells when W-73 remediation pumping was initiated.

H. Investigations

Conestoga Rovers and Associates performed an independent assessment of the tritium plume. The results of their assessment can be found in References 2 and 3:

I. Actions Taken

1. Compensatory Actions

Active remediation of tritium in groundwater due to the spills that occurred in 2009 was initiated in October, 2010.

2. Installation of Monitoring Wells

The following wells were installed in 2010 to better characterize and monitor the tritium plume and site hydrology.

Well Number	Formation	Well Installation Date
W-58 I	Cohansey	July
W-59 I	Cohansey	March
W-60 I	Cohansey	July
W-61 I	Cohansey	July
W-62	Cape May	March
W-63 I	Cohansey	July
W-64	Cape May	March
W-65	Cape May	March
W-66 I	Cohansey	July
W-67	Cape May	March
W-68 I	Cohansey	July
W-69 I	Cohansey	July
W-70 I	Cohansey	July
W-71	Cape May	August
W-72	Cape May	August
W-73 Pumping well	Cohansey	October

3. Actions to Recover/Reverse Plumes

Oyster Creek Generating Station is currently addressing the tritium in groundwater through pumping of groundwater out of W-73 into the intake structure.

V. References

- 1. Conestoga Rovers and Associates, Hydrogeologic Investigation Report, Fleetwide Assessment, Oyster Creek Generating Station, Forked River, New Jersey, Ref. No. 045136(18), September 2006**
- 2. Conestoga Rovers and Associates, Site Investigation Report, Oyster Creek Generating Station, Forked River, New Jersey, Ref. No. 055875 (4), August 2009**
- 3. Conestoga Rovers and Associates, Remedial Investigation Workplan, Oyster Creek Generating Station, Forked River, New Jersey, Ref. No. 055875 (5), October 2009**

APPENDIX A

LOCATION DESIGNATION

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 1 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	INTERNAL Reporting Value for TRITIUM	Aquifer or Water Body Monitored
DWN	North Domestic Well	358373.33 574672.98	300.0	B	APV	Kirkwood
DWS	South Domestic Well	356955.90 574616.69	145.0	B	APV	Kirkwood
LW-1	E of ISFSI - (microwave zone)	357632.49 575569.96	21.0	I	APV	Cape May
LW-2	E of ISFSI - (microwave zone)	357645.30 575581.92	21.0	I	APV	Cape May
LW-3	E of ISFSI - (microwave zone)	357630.20 575575.52	21.0	D	APV	Cape May
LW-4	East of ISFSI - (microwave zone)	357652.78 575573.75	49.0	D	APV	Cohansey
MW-1A-2A	SW of MFOT Moat	357380.76 575043.44	24.0	D	APV	Cape May
MW-1G-1A	East of fueling station	358551.94 575308.91	20.0	I	APV	Cape May
MW-1G-1B	East of fueling station	358550.57 575316.19	45.0	I	APV	Cohansey
MW-1I-1A	Roadway - NW of TWST	357598.17 574412.70	19.0	D	APV	Cape May
MW-1I-2A	Roadway - SE of TWST	357574.80 574493.50	17.5	D	APV	Cape May
MW-15K-1A	Roadway - Intake	357297.90 574469.50	19.0	E/Monthly H-3*	100,000	Cape May
MW-16D	Yard - W of MAC Building	357573.30 574746.50	25.0	D	APV	Cape May

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 2 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
MW-24-2A	Finninger Farm - near DSB	356838.52 579470.94	18.0	I	APV	Cape May
MW-24-3A	Finninger Farm - near DSB	356828.49 578969.05	17.0	I	Level Only	Cape May
MW-50	Between CST and Intake Structure	357368.21 574436.80	20.0	E/Monthly H-3*	APV	Cape May
MW-51	Near CST	357378.30 574480.80	20.0	E/Monthly H-3*	APV	Cape May
MW-52	Near Intake Structure	357400.90 574353.00	20.0	D/Monthly H-3*	APV	Cape May
MW-53	Near end of CW discharge piping	357272.80 574447.60	20.0	D/Monthly H-3*	APV	Cape May
MW-54	Near Intake Structure	357276.20 574311.70	20.0	E/Monthly H-3*	APV	Cape May
MW-55	Between CST and Intake Structure	357354.88 574440.07	30.0	E/Monthly H-3*	APV	Cape May
MW-56I	By NaOCl tanks	357305.30 574465.50	52.0	E/Monthly H-3*	APV	Cohansey
MW-57I	Near Intake Structure	357343.71 574373.89	50.0	E/Monthly H-3*	APV	Cohansey
MW-58I	Near Intake Structure	357346.70 574377.28	72.0	D	APV	Cohansey
MW-59I	Intake Roadway - NW of CST	357422.14 574406.38	44.0	D	APV	Cohansey
MW-60I	Near Intake Structure	357346.55 574373.88	92.0	D	APV	Cohansey

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 3 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
MW-61I	Between CST and Intake Structure	357328.64 574444.45	72.0	E	APV	Cohansey
MW-62	NW Corner of Turbine Bldg	357467.93 574524.10	25.0	D/Monthly H-3	APV	Cape May
MW-63I	Between CST and Intake Structure	357329.40 574447.67	92.0	D	APV	Cohansey
MW-64	Near Intake Structure	357343.96 574377.88	25.0	E/Monthly H-3*	APV	Cape May
MW-65	Intake Roadway - NW of CST	357421.00 574402.55	25.0	D/Monthly H-3*	APV	Cape May
MW-66I	SE of Reactor Bldg	357320.44 574889.18	80.0	D	APV	Cohansey
MW-67	West side of Turbine Bldg	357401.99 574540.38	25.0	E/Monthly H-3*	APV	Cape May
MW-68I	SE of Reactor Bldg	357323.83 574897.64	100.0	D	APV	Cohansey
MW-69I	Yard - NW of DWPC Building	357664.03 574760.93	78.0	D	APV	Cohansey
MW-70I	Yard - NW of DWPC Building	357670.57 574759.18	98.0	D	APV	Cohansey
NW-71	S of Reactor Bldg	357365.52 574841.89	25.0	D	APV	Cape May
MW-72	N of Reactor Bldg	357549.87 574788.52	25.0	D	APV	Cape May
MCD	Main Condenser Discharge	N/A	N/A	Weekly* H-3	APV	Surface Water

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 4 of 8

Sample Identification Number	Location	Well/GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
SW-1	Intake Canal	N/A	N/A	SW/Weekly* H-3	APV	Surface Water
SW-2	RT 9 South Bridge	N/A	N/A	SW/Daily* H-3	APV	Surface Water
SW-3	Fire Pond	N/A	N/A	SW	APV	Surface Water
W-1	Dilution Pump Area - West Bank	357029.86 574140.61	50.0	I	Level Only	Cohansey
W-1A	North Yard Area	358311.70 574679.00	50.0	B	APV	Cohansey
W-1B	North Yard Area	358312.80 574685.40	20.0	I	Level Only	Cape May
W-1C	West end of backsite	357149.22 572741.00	60.0	I	APV	Cohansey
W-1K	West end of backsite	357151.55 572728.77	150.0	I	APV	Kirkwood
W-2	S of EDG Bldg	356965.65 574555.73	57.0	I	APV	Cohansey
W-2A	Field - W of North Yard Bldg	358105.00 574348.60	50.0	I	APV	Cohansey
W-2B	Field - W of North Yard Building	358110.30 574348.50	20.0	B	Level Only	Cape May
W-2C	Forked River CT Site	357923.67 573809.92	60.0	I	APV	Cohansey
W-2K	Forked River CT Site	358030.88 573762.54	150.0	I	APV	Kirkwood

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 5 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
W-3	Intake - Access Road	357173.00 574499.10	24.0	D/Monthly H-3*	APV	Cape May
W-3A	Plant Access Road	358067.92 575664.22	50.0	I	Level Only	Cohansey
W-3B	Plant Access Road	358070.58 575656.25	20.0	I	Level Only	Cape May
W-3C	Finninger Farm - N of Discharge	356595.30 576663.33	60.0	I	APV	Cohansey
W-3K	Finninger Farm - N of Discharge	356602.17 576675.04	100.0	I	Level Only	Kirkwood
W-4	Intake - Access Road	357176.40 574497.70	55.0	D	APV	Cohansey
W-4A	SE of OCAB Building	356913.30 575387.10	50.0	B	APV	Cohansey
W-4B	SE of OCAB Building	356916.40 575388.90	20.0	B	APV	Cape May
W-4C	Finninger Farm - S of Intake	359305.61 575867.58	60.0	I	APV	Cohansey
W-4K	Finninger Farm - S of Intake	359321.83 575874.07	100.0	I	Level Only	Kirkwood
W-5	NW Yard area, near Fire Water Tank	357510.95 574374.05	20.5	D	APV	Cape May
W-5C	Finninger Farm - E of dredge spoils	356758.59 580642.26	60.0	B	APV	Cohansey
W-5K	Finninger Farm - E of dredge spoils	356743.81 580646.48	150.0	B	APV	Kirkwood

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 6 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
W-6	NW Yard - near Fire Water Tank	357514.02 574373.77	52.0	D	APV	Cohansey
W-7	NE - Building 4	357074.46 574713.08	20.0	D	APV	Cape May
W-9	Roadway - NE of SAS Building	357289.29 574892.74	20.0	D	APV	Cape May
W-10	NW of SAS Building	357286.29 574890.61	60.0	D	APV	Cohansey
W-12	Yard - NW of DWPC Building	357669.10 574755.60	20.0	D	APV	Cape May
W-13	Yard - NW of DWPC Building	357666.00 574755.90	50.0	D	APV	Cohansey
W-14	Yard - SW of Warehouse	357702.41 575018.75	53.0	D	APV	Cohansey
W-15	Yard - SW of Warehouse	357705.83 575017.70	20.0	D	APV	Cape May
W-16	Yard - E of LLRW	357967.26 574933.03	20.0	D	APV	Cape May
W-17	Road/ Exit Near W-3A	358078.05 575667.14	150.0	I	APV	Kirkwood
W-18	Near EDG Building	357005.78 574621.6	20.0	I	APV	Cape May
W-19	Near EDG Building	357077.91 574633.23	20.0	I	APV	Cape May
W-20	SW of EDG Building	356927.46 574542.59	20.0	I	APV	Cape May

TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 7 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
W-21	Near EDG Building	357009.15 574518.22	20.0	I	APV	Cape May
W-22	Near EDG Building	357024.50 574590.19	39.0	I	APV	Cape May
W-23	Near EDG Building	357054.89 574564.88	20.0	I	APV	Cape May
W-24	South of TB W of old Machine Shop	357128.94 574650.77	19.0	D	APV	Cape May
W-25	Near EDG Building	356962.59 574677.59	20.0	I	APV	Cape May
W-26	Near EDG Building	357006.60 574644.03	20.0	I	APV	Cape May
W-27	Near EDG Building	357042.43 574636.35	20.0	I	APV	Cape May
W-28	Near EDG Building	356991.29 574573.64	19.5	I	APV	Cape May
W-29	Near EDG Building	357012.62 574568.69	19.5	I	APV	Cape May
W-30	Near EDG Building	357058.00 574516.71	19.5	I	APV	Cape May
W-31	Near EDG Building	357051.78 574495.62	19.5	I	APV	Cape May
W-32	Near EDG Building	356978.58 574528.44	19.5	I	APV	Cape May
W-33	Near EDG Building	357026.93 574499.17	19.5	I	APV	Cape May

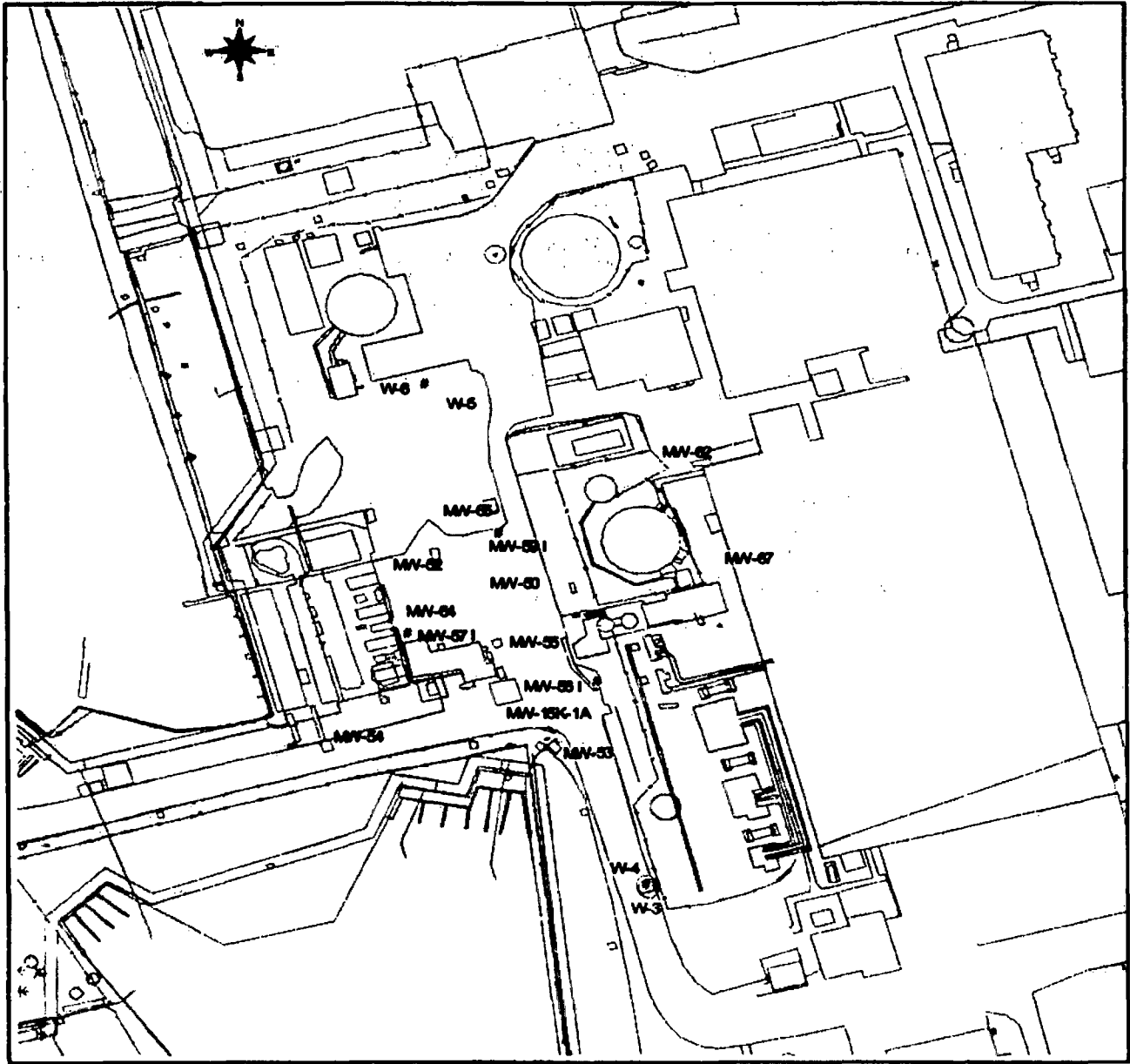
TABLE A-1:

Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek
Generating Station, 2011Oyster Creek Generating Station RGPP Sample Point List
Page 8 of 8

Sample Identification Number	Location	Well GPS Coordinates (Northing/Easting)	Depth (ft)	RGPP Sample Point Designation	Internal Reporting Values for Tritium	Aquifer or Water Body Monitored
W-34	South of TB W of old Machine Shop	357196.14 574649.43	40.0	D	APV	Cohansey

* Tritium sampling frequency based upon agreement made with the NJDEP on 1/19/11.

D = Daily W = Weekly M = Monthly S = Semi-annual B = Biennial



CST Investigation Routine Groundwater Monitoring Locations
 Cape May Formation Wells
 Cohansey Formation Wells

CST Investigation
 Routine Monitoring Locations
 Exelon Corporation
 Oyster Creek Generating Station

Figure A-1
 Sampling Locations – Selected Cohansey and Cape May
 Formation Wells, Oyster Creek Generating Station, 2011

APPENDIX B

DATA TABLES

TABLE B-1.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION		H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
	DATE							
DWN	04/12/11		< 165					
DWS	04/12/11		< 199					
DWS	12/15/11		< 183					
LW-3	01/11/11		< 164					
LW-3	04/14/11		< 198	< 0.5	< 0.3	< 1.6	< 0.8	4.0 ± 1.5
LW-3	07/14/11		< 184					
LW-3	10/11/11		< 178					
LW-4	01/11/11		< 157					
LW-4	04/14/11		< 165	< 0.8	0.9 ± 0.3	< 1.1	1.9 ± 0.8	< 1.5
LW-4	07/14/11		< 188					
LW-4	10/11/11		< 160					
MW-15K-1A	01/11/11		53600 ± 5410					
MW-15K-1A	02/15/11		20500 ± 2090					
MW-15K-1A	03/15/11		10000 ± 1030					
MW-15K-1A	04/13/11		16200 ± 1650	< 0.8	< 0.7	< 2.0	4.7 ± 0.8	11.5 ± 2.3
MW-15K-1A	05/10/11		12200 ± 1270					
MW-15K-1A	06/14/11		21400 ± 2180					
MW-15K-1A	07/13/11		4830 ± 530					
MW-15K-1A	07/13/11		4360 ± 481					
MW-15K-1A	07/13/11	EIML	4536 ± 214					
MW-15K-1A	08/16/11		2290 ± 282					
MW-15K-1A	09/13/11		1730 ± 233					
MW-15K-1A	10/11/11		1940 ± 250					
MW-15K-1A	10/11/11		1810 ± 238					
MW-15K-1A	10/11/11	EIML	1986 ± 148					
MW-15K-1A	11/16/11		1510 ± 206					
MW-15K-1A	12/14/11		553 ± 142					
MW-16D	01/11/11		< 158					
MW-16D	04/12/11		< 178	< 0.8	< 1.1	< 1.1	9.9 ± 1.4	< 1.5
MW-16D	07/13/11		< 170					
MW-16D	10/12/11		< 160					
MW-1A-2A	01/11/11		< 156					
MW-1A-2A	04/12/11		< 163	< 0.8	< 1.0	< 1.1	7.7 ± 1.3	< 1.5
MW-1A-2A	07/13/11		< 174					
MW-1A-2A	10/11/11		< 163					
MW-1I-1A	01/11/11		< 166					
MW-1I-1A	01/11/11		< 157					
MW-1I-1A	04/12/11		< 164	< 0.8	< 0.4	2.2 ± 1.2	1.8 ± 0.6	1.9 ± 1.2
MW-1I-1A	07/12/11		< 174					
MW-1I-1A	10/11/11		< 162					
MW-1I-2A	01/11/11		< 157					
MW-1I-2A	04/12/11		< 181	< 0.6	0.4 ± 0.3	< 1.1	1.6 ± 0.6	< 1.6
MW-1I-2A	07/12/11		< 172					
MW-1I-2A	10/11/11		< 161					
MW-50	01/11/11		194000 ± 19200					
MW-50	02/15/11		150000 ± 15000					
MW-50	03/15/11		100000 ± 9990					
MW-50	04/13/11		116000 ± 11600	< 0.7	< 0.9	< 0.6	8.4 ± 1.2	< 1.7
MW-50	04/13/11		115000 ± 8200	< 0.8	< 3.8	< 0.5	10.7 ± 2.0	< 1.2
MW-50	05/10/11		76200 ± 7650					
MW-50	06/14/11		71300 ± 6370					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-50	07/13/11	58300 ± 5100					
MW-50	08/16/11	108000 ± 6410					
MW-50	09/13/11	29700 ± 3020					
MW-50	10/11/11	54500 ± 5490					
MW-50	11/16/11	53700 ± 5400					
MW-50	12/08/11	51200 ± 5160					
MW-51	08/14/11	9270 ± 978					
MW-52	01/11/11	< 161					
MW-52	02/15/11	< 157					
MW-52	03/15/11	< 140					
MW-52	04/12/11	< 183	< 1.0	< 0.9	< 0.9	12.3 ± 1.3	< 1.8
MW-52	05/10/11	< 174					
MW-52	06/14/11	< 198					
MW-52	07/12/11	< 176					
MW-52	08/16/11	< 173					
MW-52	08/13/11	< 181					
MW-52	10/11/11	< 178					
MW-52	11/15/11	< 172					
MW-52	12/14/11	< 183					
MW-53	01/11/11	< 160					
MW-53	02/15/11	< 163					
MW-53	03/15/11	< 154					
MW-53	04/12/11	< 185	< 0.9	< 1.3	< 0.9	3.4 ± 1.0	< 1.7
MW-53	05/10/11	< 171					
MW-53	06/14/11	7630 ± 808					
MW-53	07/12/11	2150 ± 264					
MW-53	07/12/11	2070 ± 257					
MW-53	07/12/11	EIML	2168 ± 182				
MW-53	08/16/11		321 ± 125				
MW-53	08/13/11	< 188					
MW-53	10/11/11	< 186					
MW-53	10/11/11	< 189					
MW-53	10/11/11	EIML	< 147				
MW-53	11/15/11	< 169					
MW-53	12/14/11	< 184					
MW-54	01/11/11	190 ± 107					
MW-54	02/15/11	< 155					
MW-54	03/15/11	175 ± 97					
MW-54	04/13/11	197 ± 122	< 0.9	< 3.5	19.9 ± 10.9	38.7 ± 5.1	77.5 ± 12.9
MW-54	05/10/11	< 175					
MW-54	06/14/11	963 ± 172					
MW-54	07/13/11	330 ± 127					
MW-54	08/16/11	222 ± 116					
MW-54	08/13/11	< 190					
MW-54	10/11/11	Original	1450 ± 205				
MW-54	10/11/11	Recount	1200 ± 181				
MW-54	10/11/11	Reanalysis	1280 ± 186				
MW-54	11/16/11		1480 ± 203				
MW-54	12/14/11		379 ± 136				
MW-55	01/11/11		25800 ± 2620				
MW-55	01/11/11		26500 ± 2700				

TABLE B-1.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-55	02/15/11	17600 ± 1800					
MW-55	03/15/11	8400 ± 872					
MW-55	04/13/11	15100 ± 1550	< 0.8	< 1.2	< 0.6	7.5 ± 1.2	< 1.7
MW-55	05/10/11	9810 ± 1030					
MW-55	06/14/11	36300 ± 3670					
MW-55	07/13/11	6430 ± 684					
MW-55	08/16/11	2110 ± 264					
MW-55	09/13/11	7080 ± 756					
MW-55	10/11/11	8250 ± 873					
MW-55	11/16/11	16900 ± 1730					
MW-55	12/08/11	5300 ± 561					
MW-56I	01/11/11	2990 ± 351					
MW-56I	02/15/11	4950 ± 539					
MW-56I	03/15/11	5520 ± 590					
MW-56I	04/13/11	8390 ± 883	< 0.8	< 0.4	< 1.0	3.4 ± 0.7	< 1.6
MW-56I	05/10/11	5270 ± 582					
MW-56I	06/14/11	23900 ± 2420					
MW-56I	07/13/11	8050 ± 848					
MW-56I	07/13/11	8050 ± 849					
MW-56I	07/13/11	EIML 8372 ± 278					
MW-56I	08/16/11	52700 ± 4530					
MW-56I	09/13/11	17700 ± 1810					
MW-56I	10/12/11	5840 ± 634					
MW-56I	10/12/11	5620 ± 609					
MW-56I	10/12/11	EIML 6430 ± 241					
MW-56I	11/16/11	5670 ± 632					
MW-56I	12/14/11	7590 ± 802					
MW-57I	01/11/11	95600 ± 9520					
MW-57I	02/15/11	83600 ± 8400					
MW-57I	03/15/11	81000 ± 8080					
MW-57I	04/13/11	80400 ± 6880	< 0.8	< 1.0	1.5 ± 0.8	7.6 ± 1.1	< 1.7
MW-57I	04/13/11	79400 ± 6850	< 0.9	< 1.0	1.2 ± 0.7	9.8 ± 1.2	< 1.7
MW-57I	04/13/11	EIML 81745 ± 816	< 0.6				
MW-57I	05/10/11	40000 ± 3940					
MW-57I	06/14/11	42300 ± 4280					
MW-57I	07/13/11	20600 ± 2120					
MW-57I	08/16/11	56600 ± 5680					
MW-57I	09/13/11	44200 ± 4450					
MW-57I	10/12/11	18500 ± 1890					
MW-57I	11/16/11	37500 ± 3800					
MW-57I	12/08/11	28200 ± 2870					
MW-58I	01/11/11	< 163					
MW-58I	04/13/11	< 170	< 0.8	0.6 ± 0.3	1.2 ± 0.5	2.2 ± 0.6	11.3 ± 1.2
MW-58I	07/12/11	< 187					
MW-58I	10/12/11	< 160					
MW-59I	01/11/11	< 164					
MW-59I	01/11/11	< 163					
MW-59I	02/15/11	< 155					
MW-59I	04/13/11	< 177	< 0.9	1.1 ± 0.4	< 0.9	4.9 ± 0.7	< 1.6
MW-59I	07/13/11	< 180					
MW-59I	10/11/11	< 178					

TABLE B-1.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-601	01/11/11	< 157					
MW-601	04/13/11	< 166	< 0.7	< 0.3	2.3 ± 1.0	1.7 ± 0.6	2.2 ± 1.2
MW-601	07/12/11	< 189					
MW-601	10/12/11	< 181					
MW-611	01/11/11	6710 ± 715					
MW-611	04/12/11	457 ± 133	< 0.8	< 0.5	< 2.3	3.0 ± 1.0	29.2 ± 4.2
MW-611	07/13/11	< 171					
MW-611	10/12/11	451 ± 132					
MW-62	01/11/11	< 162					
MW-62	02/15/11	< 155					
MW-62	03/15/11	168 ± 97					
MW-62	04/12/11	< 177	< 1.0	< 1.2	< 1.1	16.6 ± 1.6	2.5 ± 1.3
MW-62	05/10/11	< 173					
MW-62	06/14/11	< 194					
MW-62	07/12/11	< 178					
MW-62	08/16/11	< 195					
MW-62	09/13/11	< 191					
MW-62	10/11/11	< 179					
MW-62	11/15/11	< 174					
MW-62	12/08/11	< 182					
MW-631	01/11/11	< 166					
MW-631	04/12/11	< 170	< 0.9	< 0.3	< 0.6	1.6 ± 0.6	< 1.6
MW-631	07/13/11	< 186					
MW-631	10/12/11	< 163					
MW-64	01/11/11	4140 ± 465					
MW-64	02/15/11	3310 ± 377					
MW-64	03/15/11	3710 ± 410					
MW-64	04/13/11	3450 ± 392	< 1.0	< 0.8	< 1.0	8.7 ± 1.0	< 1.7
MW-64	05/10/11	3470 ± 396					
MW-64	06/14/11	2680 ± 325					
MW-64	07/13/11	1150 ± 174					
MW-64	08/16/11	2050 ± 258					
MW-64	09/13/11	4020 ± 453					
MW-64	10/12/11	3300 ± 383					
MW-64	11/16/11	3470 ± 395					
MW-64	12/08/11	2270 ± 285					
MW-65	01/11/11	< 163					
MW-65	02/15/11	< 155					
MW-65	03/15/11	< 146					
MW-65	04/12/11	< 189	< 0.8	< 1.6	< 1.0	11.9 ± 1.5	< 1.9
MW-65	05/10/11	< 174					
MW-65	06/14/11	< 193					
MW-65	07/12/11	< 172					
MW-65	08/16/11	< 194					
MW-65	09/13/11	< 191					
MW-65	10/11/11	< 176					
MW-65	11/15/11	< 184					
MW-65	12/14/11	< 192					
MW-661	01/11/11	< 161					
MW-661	04/12/11	< 184	< 0.8	< 0.7	< 0.6	109 ± 2.7	< 1.7
MW-661	07/13/11	< 182					

TABLE B-1.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-68I	10/12/11	< 160					
MW-67	01/11/11	994000 ± 97100					
MW-67	01/11/11	947000 ± 89600					
MW-67	02/15/11	758000 ± 69600					
MW-67	03/15/11	558000 ± 53900					
MW-67	04/13/11	464000 ± 46300	< 0.8	< 0.5	3.1 ± 1.5	7.9 ± 0.8	6.0 ± 1.6
MW-67	04/13/11	494000 ± 47600	< 0.7	< 0.5	1.3 ± 0.8	6.9 ± 0.8	3.3 ± 1.2
MW-67	04/13/11	EIML 491884 ± 1992	< 0.5				
MW-67	05/10/11	239000 ± 23700					
MW-67	06/14/11	309000 ± 30700					
MW-67	07/13/11	230000 ± 18200					
MW-67	07/13/11	237000 ± 23600					
MW-67	07/13/11	EIML 233476 ± 1390					
MW-67	08/16/11	341000 ± 33900					
MW-67	09/13/11	178000 ± 17700					
MW-67	10/11/11	216000 ± 21600					
MW-67	10/11/11	218000 ± 21700					
MW-67	10/11/11	EIML 218871 ± 1333					
MW-67	11/18/11	340000 ± 32700					
MW-67	12/08/11	167000 ± 16900					
MW-68I	01/11/11	< 159					
MW-68I	04/12/11	< 186	< 0.6	< 0.3	< 0.6	1.5 ± 0.6	< 1.7
MW-68I	07/13/11	< 187					
MW-68I	10/11/11	< 164					
MW-68I	01/11/11	< 160					
MW-68I	04/12/11	< 186	< 0.6	< 0.4	< 0.6	7.7 ± 0.8	< 1.7
MW-68I	07/13/11	< 174					
MW-68I	10/12/11	< 164					
MW-70I	01/11/11	< 159					
MW-70I	04/12/11	< 191	< 0.6	< 0.4	< 0.6	5.4 ± 0.7	< 1.7
MW-70I	07/13/11	< 172					
MW-70I	10/12/11	< 160					
MW-71	01/11/11	< 163					
MW-71	04/13/11	< 190	< 0.7	< 0.8	< 0.6	20.0 ± 1.5	< 1.7
MW-71	10/11/11	< 175					
MW-71	12/14/11	< 187					
MW-71	07/13/11	< 188					
MW-72	01/11/11	< 157					
MW-72	04/12/11	< 188	< 0.9	< 0.6	< 0.6	15.7 ± 1.1	3.6 ± 1.4
MW-72	07/13/11	< 187					
MW-72	10/12/11	< 164					
MW-72	12/14/11	< 185					
W-10	01/11/11	< 165					
W-10	04/12/11	< 186	< 0.7	0.6 ± 0.3	4.4 ± 1.6	2.3 ± 0.6	10.2 ± 1.9
W-10	04/12/11	< 186	< 0.6	0.6 ± 0.3	3.4 ± 1.1	2.6 ± 0.6	4.6 ± 1.3
W-10	04/12/11	EIML < 142	< 0.7				
W-10	07/13/11	< 187					
W-10	10/11/11	< 163					
W-12	01/11/11	< 157					
W-12	04/12/11	< 178	< 0.7	< 0.4	3.6 ± 1.3	3.3 ± 0.7	7.7 ± 1.6
W-12	07/13/11	< 176					

TABLE B-1.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
W-12	10/12/11	< 180					
W-13	01/11/11	< 157					
W-13	04/12/11	< 177	< 0.6	< 0.6	12.7 ± 4.1	2.2 ± 1.3	38.5 ± 5.3
W-13	07/13/11	< 172					
W-13	10/12/11	< 161					
W-14	01/11/11	< 156					
W-14	04/13/11	< 178	< 0.8	0.6 ± 0.3	1.3 ± 0.7	2.3 ± 0.6	< 1.5
W-14	07/13/11	< 172					
W-14	10/11/11	< 166					
W-15	01/11/11	< 159					
W-15	04/13/11	< 178	< 0.6	< 0.4	3.0 ± 1.4	2.3 ± 0.7	15.2 ± 2.3
W-15	07/13/11	< 173					
W-15	10/11/11	< 161					
W-16	01/11/11	< 157					
W-16	04/13/11	< 179	< 0.7	< 0.4	< 0.8	3.3 ± 0.7	< 1.7
W-16	07/14/11	< 169					
W-16	10/11/11	< 160					
W-18	12/14/11	< 186					
W-1A	04/14/11	< 177					
W-24	01/11/11	< 156					
W-24	04/13/11	< 167	< 0.7	< 0.4	6.5 ± 2.0	1.6 ± 0.6	22.4 ± 2.6
W-24	07/14/11	< 182					
W-24	10/12/11	Original	219 ± 120				
W-24	10/12/11	Recount	306 ± 127				
W-24	10/12/11	Reanalysis	435 ± 140				
W-24	12/08/11		487 ± 131				
W-24	12/15/11	< 181					
W-27	12/14/11	< 184					
W-2B	04/14/11	< 179					
W-3	01/11/11	< 170					
W-3	02/15/11	< 154					
W-3	03/15/11	< 146					
W-3	04/12/11	< 183	< 1.0	< 0.5	< 1.7	< 0.8	9.9 ± 2.1
W-3	05/10/11	< 171					
W-3	06/14/11	< 195					
W-3	07/12/11	< 169					
W-3	08/18/11	< 171					
W-3	09/13/11	< 194					
W-3	10/11/11	< 188					
W-3	11/15/11	< 179					
W-3	12/14/11	< 189					
W-34	01/11/11	< 157					
W-34	01/11/11	< 163					
W-34	04/13/11	< 171	< 0.7	< 0.4	6.0 ± 2.0	1.3 ± 0.6	21.5 ± 2.6
W-34	07/14/11	< 183					
W-34	10/12/11	< 159					
W-34	12/14/11	< 181					
W-4	01/11/11	< 171					
W-4	02/15/11	< 153					
W-4	04/12/11	< 188	< 0.9	< 1.2	< 0.8	8.8 ± 1.2	< 1.7
W-4	07/12/11	< 169					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM-90, GROSS ALPHA AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
W-4	10/11/11	< 186					
W-4A	04/13/11	< 179					
W-4B	04/13/11	< 179					
W-5C	04/14/11	< 190					
W-5K	04/14/11	< 191					
W-5K	04/14/11	< 181					
W-5K	04/14/11	EIML < 142					
W-5	01/11/11	< 162					
W-5	02/15/11	< 152					
W-5	04/12/11	< 185	< 0.9	< 0.7	2.9 ± 1.1	8.4 ± 0.9	3.4 ± 1.3
W-5	07/12/11	< 177					
W-5	07/12/11	< 172					
W-5	07/12/11	EIML < 150					
W-5	10/11/11	< 178					
W-5	10/11/11	< 175					
W-5	10/11/11	EIML < 147					
W-6	01/11/11	< 163					
W-6	02/15/11	< 156					
W-6	04/12/11	< 183	< 0.9	5.7 ± 1.6	11.5 ± 4.1	13.2 ± 1.8	12.5 ± 3.6
W-6	07/12/11	< 183					
W-6	10/11/11	< 177					
W-7	01/11/11	< 160					
W-7	04/13/11	< 180	< 0.8	< 0.9	< 0.4	12.5 ± 1.5	< 1.5
W-7	07/14/11	< 188					
W-7	10/12/11	< 163					
W-7	12/14/11	< 184					
W-9	01/11/11	< 167					
W-9	04/12/11	< 183	< 0.6	2.2 ± 0.9	1.6 ± 0.7	17.2 ± 1.5	1.8 ± 1.1
W-9	07/13/11	< 188					
W-9	10/11/11	< 162					
W-9	12/14/11	< 183					

TABLE B-1.2

**CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
DWN	04/12/11	< 2	< 2	< 5	< 2	< 5	< 3	< 5	< 13	< 2	< 2	< 23	< 7
DWS	04/12/11	< 2	< 3	< 6	< 2	< 5	< 3	< 4	< 15	< 2	< 2	< 24	< 7
LW-3	04/14/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 10	< 2	< 2	< 19	< 6
LW-4	04/14/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 12	< 3	< 3	< 23	< 7
MW-15K-1A	04/13/11	< 5	< 5	< 11	< 5	< 8	< 5	< 8	< 14	< 4	< 6	< 31	< 10
MW-15K-1A	10/11/11	< 3	< 4	< 7	< 3	< 7	< 4	< 7	< 10	< 3	< 4	< 24	< 8
MW-15K-1A	10/11/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 11	< 4	< 4	< 25	< 10
MW-15K-1A	10/11/11	EIML < 7	< 3	< 12	< 3	< 12	< 8	< 13	< 11	< 7	< 6	< 23	< 5
MW-16D	04/12/11	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 14	< 2	< 2	< 23	< 6
MW-1A-2A	04/12/11	< 3	< 3	< 7	< 2	< 6	< 3	< 5	< 14	< 2	< 2	< 30	< 7
MW-1I-1A	04/12/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 14	< 2	< 2	< 23	< 8
MW-1I-2A	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 18	< 6
MW-50	04/13/11	< 3	< 3	< 7	< 3	< 6	< 4	< 5	< 10	< 3	< 4	< 21	< 6
MW-50	04/13/11	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 16	< 6
MW-50	04/13/11	EIML < 2	< 2	< 8	< 2	< 2	< 3	< 5	< 8	< 3	< 2	< 16	< 4
MW-50	10/11/11	< 4	< 4	< 9	< 4	< 8	< 5	< 7	< 11	< 4	< 4	< 27	< 9
MW-52	04/12/11	< 4	< 5	< 12	< 4	< 9	< 5	< 8	< 15	< 4	< 5	< 33	< 9
MW-53	04/12/11	< 4	< 4	< 9	< 5	< 9	< 5	< 7	< 13	< 4	< 5	< 25	< 9
MW-54	04/13/11	< 5	< 5	< 10	< 5	< 14	< 6	< 10	< 14	< 5	< 5	< 33	< 11
MW-54	10/11/11	< 3	< 3	< 6	< 3	< 7	< 4	< 6	< 9	< 3	< 3	< 21	< 7
MW-55	04/13/11	< 6	< 5	< 12	< 5	< 8	< 6	< 9	< 14	< 5	< 6	< 26	< 10
MW-55	10/11/11	< 5	< 5	< 10	< 5	< 11	< 6	< 10	< 15	< 5	< 5	< 34	< 11
MW-56I	04/13/11	< 4	< 5	< 10	< 4	< 10	< 5	< 8	< 14	< 4	< 5	< 29	< 12
MW-56I	10/12/11	< 4	< 5	< 9	< 4	< 9	< 5	< 8	< 13	< 4	< 4	< 30	< 10
MW-56I	10/12/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 13	< 4	< 4	< 28	< 9
MW-56I	10/12/11	EIML < 4	< 4	< 10	< 5	< 13	< 6	< 9	< 6	< 6	< 5	< 22	< 6
MW-57I	04/13/11	< 4	< 6	< 10	< 5	< 10	< 5	< 10	< 14	< 4	< 6	< 34	< 10
MW-57I	04/13/11	< 4	< 5	< 10	< 5	< 9	< 5	< 9	< 14	< 5	< 5	< 30	< 8
MW-57I	04/13/11	EIML < 3	< 3	< 4	< 2	< 5	< 3	< 5	< 12	< 4	< 2	< 23	< 5
MW-57I	10/12/11	< 4	< 5	< 10	< 5	< 10	< 5	< 8	< 12	< 4	< 5	< 32	< 10
MW-58I	04/13/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 3	< 26	< 9
MW-59I	04/13/11	< 4	< 5	< 10	< 3	< 8	< 5	< 7	< 12	< 4	< 4	< 30	< 8
MW-60I	04/13/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 13	< 2	< 2	< 24	< 8
MW-61I	04/12/11	< 4	< 4	< 8	< 4	< 8	< 5	< 8	< 15	< 4	< 4	< 31	< 9
MW-61I	10/12/11	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 13	< 4	< 4	< 27	< 9
MW-62	04/12/11	< 4	< 3	< 9	< 5	< 9	< 4	< 7	< 13	< 4	< 5	< 26	< 8
MW-63I	04/12/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 20	< 7
MW-64	04/13/11	< 5	< 5	< 11	< 5	< 7	< 5	< 10	< 14	< 4	< 5	< 33	< 8

TABLE B-1.2

CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MW-64	10/12/11	< 4	< 5	< 10	< 4	< 9	< 5	< 8	< 14	< 4	< 5	< 31	< 11
MW-65	04/12/11	< 5	< 5	< 12	< 5	< 9	< 5	< 7	< 14	< 4	< 5	< 32	< 10
MW-66I	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 20	< 6
MW-67	04/13/11	< 3	< 4	< 10	< 4	< 8	< 5	< 7	< 11	< 4	< 4	< 22	< 6
MW-67	04/13/11	< 4	< 4	< 9	< 4	< 9	< 4	< 7	< 13	< 4	< 5	< 25	< 8
MW-67	04/13/11	EIML < 1	< 3	< 4	< 2	< 3	< 4	< 3	< 11	< 3	< 2	< 21	< 4
MW-67	10/11/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 11	< 4	< 4	< 26	< 8
MW-67	10/11/11	< 4	< 4	< 9	< 4	< 8	< 5	< 7	< 11	< 4	< 4	< 27	< 8
MW-67	10/11/11	EIML < 4	< 3	< 7	< 4	< 13	< 5	< 6	< 10	< 6	< 6	< 27	< 3
MW-68I	04/12/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 14	< 2	< 2	< 25	< 9
MW-69I	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 6
MW-70I	04/12/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 14	< 2	< 2	< 21	< 7
MW-71	04/13/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 24	< 9
MW-72	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 22	< 7
W-10	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 6
W-10	04/12/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 9	< 2	< 2	< 17	< 5
W-10	04/12/11	EIML < 2	< 3	< 6	< 2	< 5	< 3	< 5	< 12	< 4	< 3	< 16	< 4
W-12	04/12/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 14	< 2	< 2	< 24	< 7
W-13	04/12/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 15	< 2	< 3	< 26	< 8
W-14	04/13/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 12	< 2	< 2	< 22	< 6
W-15	04/13/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 22	< 7
W-16	04/13/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 3	< 25	< 7
W-1A	04/14/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 14	< 3	< 3	< 26	< 9
W-24	04/13/11	< 2	< 2	< 5	< 2	< 5	< 3	< 5	< 12	< 2	< 2	< 22	< 7
W-2B	04/14/11	< 2	< 3	< 6	< 3	< 6	< 3	< 5	< 14	< 2	< 3	< 26	< 9
W-3	04/12/11	< 5	< 6	< 12	< 6	< 10	< 7	< 10	< 13	< 5	< 6	< 33	< 11
W-34	04/13/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 15	< 2	< 3	< 26	< 7
W-4	04/12/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 10	< 5	< 4	< 23	< 8
W-4A	04/13/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 21	< 6
W-4B	04/13/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 2	< 2	< 25	< 8
W-5	04/12/11	< 5	< 5	< 12	< 5	< 12	< 7	< 10	< 14	< 5	< 6	< 33	< 10
W-5C	04/14/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 3	< 22	< 7
W-5K	04/14/11	< 2	< 3	< 7	< 2	< 6	< 3	< 5	< 15	< 2	< 3	< 25	< 8
W-5K	04/14/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 18	< 6
W-5K	04/14/11	EIML < 3	< 3	< 3	< 2	< 5	< 4	< 5	< 12	< 2	< 3	< 26	< 3
W-6	04/12/11	< 5	< 6	< 12	< 7	< 11	< 7	< 11	< 14	< 6	< 6	< 33	< 8
W-7	04/13/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 2	< 3	< 25	< 7
W-9	04/12/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 21	< 6

B-9

TABLE B-1.3 CONCENTRATIONS OF "HARD-TO-DETECTS" IN GROUNDWATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	AM-241	CM-242	CM-243/244	PU-238	PU-239/240	U-234	U-235	U-238	FE-55	NI-63
MW-15K-1A	04/13/11	< 0.12	< 0.05	< 0.17	< 0.12	< 0.08	0.50 ± 0.25	< 0.12	0.95 ± 0.33	< 137	< 4.12
MW-611	04/12/11	< 0.15	< 0.07	< 0.10	< 0.12	< 0.03	< 0.10	< 0.08	< 0.14	< 137	< 3.67
MW-50	04/13/11	< 0.20	< 0.11	< 0.16	< 0.09	< 0.12	< 0.07	< 0.06	< 0.11	< 165	< 3.68
MW-50	04/13/11	< 0.15	< 0.10	< 0.04	< 0.05	< 0.12	< 0.03	< 0.04	< 0.06	< 109	< 3.71
MW-50	04/13/11	EIML < 0.50		< 0.10	< 0.15	< 0.15	< 0.12		< 0.17	< 770	< 93.0
MW-54	04/13/11	< 0.14	< 0.05	< 0.15	< 0.13	< 0.12	1.74 ± 0.42	< 0.04	1.81 ± 0.43	< 175	< 4.77
MW-55	04/13/11	< 0.14	< 0.05	< 0.05	< 0.12	< 0.10	< 0.10	< 0.04	< 0.15	< 112	< 3.62
MW-561	04/13/11	< 0.11	< 0.08	< 0.08	< 0.08	< 0.11	< 0.08	< 0.08	< 0.06	< 169	< 3.71
MW-571	04/13/11	< 0.08	< 0.04	< 0.05	< 0.15	< 0.12	< 0.15	< 0.08	< 0.14	< 136	< 3.67
MW-571	04/13/11	< 0.11	< 0.04	< 0.07	< 0.17	< 0.05	< 0.02	< 0.06	< 0.05	< 137	< 3.67
MW-571	04/13/11	EIML < 0.52		< 0.09	< 0.16	< 0.16	< 0.13		< 0.13	< 774	< 77.0
MW-64	04/13/11	< 0.08	< 0.05	< 0.02	< 0.12	< 0.05	< 0.16	< 0.05	< 0.19	< 158	< 3.62
MW-67	04/13/11	< 0.10	< 0.07	< 0.06	< 0.19	< 0.09	0.41 ± 0.21	< 0.07	0.63 ± 0.24	< 141	< 3.75
MW-67	04/13/11	< 0.19	< 0.13	< 0.05	< 0.17	< 0.06	0.45 ± 0.24	< 0.05	0.50 ± 0.25	< 122	< 3.76
MW-67	04/13/11	EIML < 1.31		< 0.34	< 0.81	< 0.70	< 0.19		0.44 ± 0.31	< 774	< 84.0

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TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	01/01/11	< 156
MCD	01/02/11	< 164
MCD	01/03/11	< 155
MCD	01/04/11	< 154
MCD	01/05/11	< 155
MCD	01/06/11	< 170
MCD	01/07/11	< 172
MCD	01/08/11	< 168
MCD	01/09/11	< 169
MCD	01/10/11	< 169
MCD	01/11/11	< 147
MCD	01/12/11	< 147
MCD	01/13/11	< 148
MCD	01/14/11	< 147
MCD	01/15/11	< 146
MCD	01/16/11	< 147
MCD	01/17/11	< 147
MCD	01/18/11	< 178
MCD	01/19/11	< 176
MCD	01/20/11	< 181
MCD	01/21/11	< 179
MCD	01/22/11	< 184
MCD	01/23/11	< 180
MCD	01/24/11	< 178
MCD	01/25/11	< 177
MCD	01/26/11	< 174
MCD	01/27/11	< 166
MCD	01/28/11	< 165
MCD	01/29/11	< 162
MCD	01/30/11	< 163
MCD	01/31/11	< 163
MCD	02/01/11	< 168
MCD	02/02/11	< 150
MCD	02/03/11	< 156
MCD	02/04/11	< 157
MCD	02/05/11	< 156
MCD	02/06/11	< 152
MCD	02/07/11	< 155
MCD	02/08/11	< 171
MCD	02/09/11	< 175
MCD	02/10/11	< 153
MCD	02/11/11	< 160
MCD	02/12/11	< 157
MCD	02/13/11	< 154
MCD	02/14/11	< 154
MCD	02/15/11	< 153
MCD	02/16/11	< 155
MCD	02/17/11	< 164
MCD	02/18/11	< 165
MCD	02/19/11	< 165
MCD	02/20/11	< 164
MCD	02/21/11	< 163
MCD	02/22/11	< 164

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	02/23/11	< 163
MCD	02/24/11	< 165
MCD	02/25/11	< 167
MCD	02/26/11	< 167
MCD	02/27/11	< 160
MCD	02/28/11	< 160
MCD	03/01/11	< 168
MCD	03/02/11	< 169
MCD	03/03/11	< 151
MCD	03/04/11	< 151
MCD	03/05/11	< 150
MCD	03/06/11	< 148
MCD	03/07/11	< 151
MCD	03/08/11	< 147
MCD	03/09/11	< 147
MCD	03/10/11	< 159
MCD	03/11/11	< 158
MCD	03/12/11	< 157
MCD	03/13/11	< 158
MCD	03/14/11	< 157
MCD	03/15/11	< 157
MCD	03/16/11	< 157
MCD	03/17/11	< 181
MCD	03/18/11	< 179
MCD	03/19/11	< 178
MCD	03/20/11	< 180
MCD	03/21/11	< 183
MCD	03/22/11	< 160
MCD	03/23/11	< 179
MCD	03/24/11	< 168
MCD	03/25/11	< 168
MCD	03/26/11	< 167
MCD	03/27/11	< 172
MCD	03/28/11	< 170
MCD	03/29/11	< 171
MCD	03/30/11	< 167
MCD	03/31/11	< 170
MCD	04/01/11	< 172
MCD	04/02/11	< 172
MCD	04/03/11	< 171
MCD	04/04/11	< 171
MCD	04/05/11	< 170
MCD	04/06/11	< 171
MCD	04/07/11	< 170
MCD	04/08/11	< 170
MCD	04/09/11	< 170
MCD	04/10/11	< 167
MCD	04/11/11	< 170
MCD	04/12/11	< 166
MCD	04/13/11	< 167
MCD	04/14/11	< 182
MCD	04/14/11	< 175
MCD	04/15/11	< 176

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	04/16/11	< 177
MCD	04/17/11	< 174
MCD	04/18/11	< 174
MCD	04/19/11	< 177
MCD	04/20/11	< 175
MCD	04/21/11	< 175
MCD	04/22/11	< 175
MCD	04/23/11	< 174
MCD	04/24/11	< 171
MCD	04/25/11	< 173
MCD	04/26/11	< 175
MCD	04/27/11	< 172
MCD	04/28/11	< 188
MCD	04/29/11	< 187
MCD	04/30/11	< 189
MCD	05/01/11	< 186
MCD	05/02/11	< 188
MCD	05/03/11	< 185
MCD	05/04/11	< 188
MCD	05/05/11	< 186
MCD	05/06/11	< 188
MCD	05/07/11	< 188
MCD	05/08/11	< 187
MCD	05/09/11	< 189
MCD	05/10/11	< 184
MCD	05/11/11	< 186
MCD	05/12/11	< 171
MCD	05/13/11	< 184
MCD	05/14/11	< 191
MCD	05/15/11	< 186
MCD	05/18/11	< 191
MCD	05/25/11	< 187
MCD	06/01/11	< 187
MCD	06/03/11	< 180
MCD	06/04/11	< 173
MCD	06/05/11	< 183
MCD	06/06/11	< 179
MCD	06/06/11	< 182
MCD	06/08/11	< 183
MCD	06/09/11	< 170
MCD	06/10/11	< 171
MCD	06/11/11	< 170
MCD	06/12/11	< 169
MCD	06/13/11	< 167
MCD	06/14/11	< 168
MCD	06/15/11	< 171
MCD	06/16/11	< 182
MCD	06/17/11	< 183
MCD	06/18/11	< 181
MCD	06/19/11	< 178
MCD	06/20/11	< 184
MCD	06/21/11	< 181
MCD	06/22/11	< 181

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	06/23/11	< 176
MCD	06/24/11	< 178
MCD	06/25/11	< 176
MCD	06/26/11	< 176
MCD	06/27/11	< 175
MCD	06/28/11	< 178
MCD	06/29/11	< 177
MCD	06/30/11	< 177
MCD	07/01/11	< 171
MCD	07/02/11	< 175
MCD	07/03/11	< 173
MCD	07/04/11	< 172
MCD	07/05/11	< 174
MCD	07/06/11	< 172
MCD	07/07/11	< 170
MCD	07/08/11	< 172
MCD	07/09/11	< 168
MCD	07/10/11	< 173
MCD	07/11/11	< 170
MCD	07/12/11	< 174
MCD	07/13/11	< 164
MCD	07/14/11	< 191
MCD	07/15/11	< 188
MCD	07/16/11	< 171
MCD	07/17/11	< 193
MCD	07/18/11	< 187
MCD	07/19/11	< 191
MCD	07/20/11	< 192
MCD	07/21/11	< 161
MCD	07/22/11	< 162
MCD	07/23/11	< 183
MCD	07/24/11	< 184
MCD	07/25/11	< 186
MCD	07/26/11	< 182
MCD	07/27/11	< 184
MCD	07/28/11	< 177
MCD	07/29/11	< 173
MCD	07/30/11	< 176
MCD	07/31/11	< 177
MCD	08/01/11	< 176
MCD	08/02/11	< 176
MCD	08/03/11	< 174
MCD	08/04/11	< 176
MCD	08/05/11	< 178
MCD	08/06/11	< 178
MCD	08/07/11	< 177
MCD	08/08/11	< 178
MCD	08/09/11	< 176
MCD	08/18/11	< 175
MCD	08/19/11	< 174
MCD	08/20/11	< 171
MCD	08/21/11	< 171
MCD	08/22/11	< 171

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	08/23/11	< 172
MCD	08/24/11	< 172
MCD	08/25/11	< 192
MCD	08/26/11	< 188
MCD	08/27/11	< 190
MCD	08/31/11	< 192
MCD	09/01/11	< 190
MCD	09/02/11	< 176
MCD	09/03/11	< 175
MCD	09/04/11	< 174
MCD	09/05/11	< 171
MCD	09/08/11	< 174
MCD	09/07/11	< 173
MCD	09/08/11	< 175
MCD	09/13/11	< 174
MCD	09/14/11	< 173
MCD	09/15/11	< 175
MCD	09/18/11	< 170
MCD	09/17/11	< 177
MCD	09/21/11	< 175
MCD	09/22/11	< 174
MCD	09/23/11	< 174
MCD	09/24/11	< 178
MCD	09/25/11	< 175
MCD	09/26/11	< 192
MCD	09/27/11	< 192
MCD	09/28/11	< 194
MCD	09/29/11	< 183
MCD	09/30/11	< 181
MCD	10/01/11	< 188
MCD	10/02/11	< 190
MCD	10/03/11	< 187
MCD	10/04/11	< 186
MCD	10/05/11	< 189
MCD	10/06/11	< 183
MCD	10/07/11	< 186
MCD	10/08/11	< 183
MCD	10/09/11	< 188
MCD	10/10/11	< 185
MCD	10/11/11	< 185
MCD	10/12/11	< 187
MCD	10/14/11	< 187
MCD	10/15/11	< 189
MCD	10/16/11	< 185
MCD	10/17/11	< 188
MCD	10/18/11	< 184
MCD	10/19/11	< 188
MCD	10/20/11	< 191
MCD	10/21/11	< 191
MCD	10/22/11	< 186
MCD	10/23/11	< 192
MCD	10/24/11	< 190
MCD	10/25/11	< 191

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	10/26/11	< 192
MCD	10/27/11	< 188
MCD	10/28/11	< 188
MCD	10/29/11	< 190
MCD	10/30/11	< 190
MCD	10/31/11	< 187
MCD	11/01/11	< 190
MCD	11/02/11	< 190
MCD	11/03/11	< 189
MCD	11/04/11	< 163
MCD	11/05/11	< 190
MCD	11/06/11	< 189
MCD	11/07/11	< 163
MCD	11/08/11	< 189
MCD	11/09/11	< 166
MCD	11/10/11	< 173
MCD	11/11/11	< 173
MCD	11/12/11	< 172
MCD	11/13/11	< 172
MCD	11/14/11	< 173
MCD	11/15/11	< 171
MCD	11/16/11	< 171
MCD	11/17/11	< 189
MCD	11/18/11	< 189
MCD	11/19/11	< 189
MCD	11/20/11	< 193
MCD	11/21/11	< 194
MCD	11/22/11	< 189
MCD	11/23/11	< 189
MCD	11/24/11	< 190
MCD	11/25/11	< 188
MCD	11/26/11	< 190
MCD	11/27/11	< 190
MCD	11/28/11	< 192
MCD	11/29/11	< 186
MCD	11/30/11	< 189
MCD	12/01/11	< 191
MCD	12/02/11	< 192
MCD	12/03/11	< 195
MCD	12/04/11	< 191
MCD	12/05/11	< 193
MCD	12/06/11	< 192
MCD	12/07/11	< 192
MCD	12/08/11	< 178
MCD	12/09/11	< 195
MCD	12/10/11	< 193
MCD	12/11/11	< 191
MCD	12/12/11	< 196
MCD	12/13/11	< 189
MCD	12/14/11	< 193
MCD	12/15/11	< 194
MCD	12/16/11	< 181
MCD	12/17/11	< 190

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
MCD	12/18/11	< 188
MCD	12/19/11	< 182
MCD	12/20/11	< 179
MCD	12/21/11	< 180
MCD	12/22/11	< 184
MCD	12/23/11	< 182
MCD	12/24/11	< 180
MCD	12/25/11	< 180
MCD	12/26/11	< 182
MCD	12/27/11	< 181
MCD	12/28/11	< 183
MCD	12/29/11	< 183
MCD	12/30/11	< 170
MCD	12/31/11	< 170
SW-1	01/05/11	< 172
SW-1	01/12/11	< 153
SW-1	01/19/11	< 173
SW-1	01/28/11	< 171
SW-1	02/02/11	< 166
SW-1	02/09/11	< 173
SW-1	02/16/11	< 154
SW-1	02/23/11	< 164
SW-1	03/02/11	< 166
SW-1	03/09/11	< 145
SW-1	03/16/11	< 157
SW-1	03/23/11	< 179
SW-1	03/30/11	< 169
SW-1	04/06/11	< 173
SW-1	04/13/11	< 167
SW-1	04/14/11	< 178
SW-1	04/20/11	< 173
SW-1	04/27/11	< 174
SW-1	05/04/11	< 187
SW-1	05/11/11	< 188
SW-1	05/18/11	< 188
SW-1	05/25/11	< 168
SW-1	06/01/11	< 167
SW-1	06/08/11	< 178
SW-1	06/15/11	< 171
SW-1	06/22/11	< 181
SW-1	06/29/11	< 177
SW-1	07/06/11	< 168
SW-1	07/13/11	< 164
SW-1	07/20/11	< 169
SW-1	07/27/11	< 182
SW-1	08/03/11	< 174
SW-1	08/18/11	< 172
SW-1	08/24/11	< 173
SW-1	09/01/11	< 175
SW-1	09/07/11	< 174
SW-1	09/14/11	< 195
SW-1	09/22/11	< 196
SW-1	09/28/11	< 196

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-1	10/05/11	< 189
SW-1	10/12/11	< 187
SW-1	10/19/11	< 189
SW-1	10/26/11	< 184
SW-1	11/02/11	< 177
SW-1	11/09/11	< 182
SW-1	11/16/11	< 169
SW-1	11/23/11	< 186
SW-1	11/30/11	< 190
SW-1	12/07/11	< 193
SW-1	12/14/11	< 196
SW-1	12/21/11	< 182
SW-1	12/28/11	< 180
SW-2	01/01/11	< 157
SW-2	01/02/11	< 154
SW-2	01/03/11	< 157
SW-2	01/04/11	< 157
SW-2	01/05/11	< 164
SW-2	01/06/11	< 169
SW-2	01/07/11	< 168
SW-2	01/08/11	< 167
SW-2	01/09/11	< 164
SW-2	01/10/11	< 168
SW-2	01/11/11	< 148
SW-2	01/12/11	< 153
SW-2	01/13/11	< 156
SW-2	01/14/11	< 146
SW-2	01/15/11	< 152
SW-2	01/16/11	< 148
SW-2	01/17/11	< 145
SW-2	01/18/11	< 181
SW-2	01/19/11	< 177
SW-2	01/20/11	< 174
SW-2	01/21/11	< 173
SW-2	01/22/11	< 174
SW-2	01/23/11	< 174
SW-2	01/24/11	< 171
SW-2	01/25/11	< 175
SW-2	01/26/11	< 172
SW-2	01/27/11	< 154
SW-2	01/28/11	< 155
SW-2	01/29/11	< 155
SW-2	01/30/11	< 154
SW-2	01/31/11	< 155
SW-2	02/01/11	< 156
SW-2	02/02/11	< 172
SW-2	02/03/11	< 174
SW-2	02/04/11	< 173
SW-2	02/05/11	< 175
SW-2	02/06/11	< 173
SW-2	02/07/11	< 173
SW-2	02/08/11	< 175
SW-2	02/09/11	< 176

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	02/10/11	< 154
SW-2	02/11/11	< 153
SW-2	02/12/11	< 155
SW-2	02/13/11	< 156
SW-2	02/14/11	< 152
SW-2	02/15/11	< 154
SW-2	02/16/11	< 163
SW-2	02/17/11	< 163
SW-2	02/18/11	< 163
SW-2	02/19/11	< 163
SW-2	02/20/11	< 160
SW-2	02/21/11	< 176
SW-2	02/22/11	< 171
SW-2	02/23/11	< 174
SW-2	02/24/11	< 166
SW-2	02/25/11	< 169
SW-2	02/26/11	< 167
SW-2	02/27/11	< 166
SW-2	02/28/11	< 167
SW-2	03/01/11	< 159
SW-2	03/02/11	< 161
SW-2	03/03/11	< 183
SW-2	03/04/11	< 181
SW-2	03/05/11	< 184
SW-2	03/06/11	< 178
SW-2	03/07/11	< 177
SW-2	03/08/11	< 183
SW-2	03/09/11	< 180
SW-2	03/10/11	< 156
SW-2	03/11/11	< 157
SW-2	03/12/11	< 175
SW-2	03/13/11	< 199
SW-2	03/14/11	< 194
SW-2	03/15/11	< 174
SW-2	03/16/11	< 197
SW-2	03/17/11	< 182
SW-2	03/18/11	< 177
SW-2	03/19/11	< 179
SW-2	03/20/11	< 178
SW-2	03/21/11	< 177
SW-2	03/22/11	< 179
SW-2	03/23/11	< 179
SW-2	03/24/11	< 170
SW-2	03/25/11	< 169
SW-2	03/26/11	< 167
SW-2	03/27/11	< 171
SW-2	03/28/11	< 166
SW-2	03/29/11	< 166
SW-2	03/30/11	< 169
SW-2	03/31/11	< 172
SW-2	04/01/11	< 169
SW-2	04/02/11	< 169
SW-2	04/03/11	< 168

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	04/04/11	< 166
SW-2	04/05/11	< 172
SW-2	04/06/11	< 173
SW-2	04/07/11	< 168
SW-2	04/08/11	< 170
SW-2	04/09/11	< 171
SW-2	04/10/11	< 168
SW-2	04/11/11	< 168
SW-2	04/12/11	< 169
SW-2	04/13/11	< 171
SW-2	04/14/11	< 179
SW-2	04/14/11	< 172
SW-2	04/15/11	< 176
SW-2	04/16/11	< 173
SW-2	04/17/11	< 175
SW-2	04/18/11	< 176
SW-2	04/19/11	< 174
SW-2	04/20/11	< 175
SW-2	04/21/11	< 175
SW-2	04/22/11	< 189
SW-2	04/23/11	< 172
SW-2	04/24/11	< 175
SW-2	04/25/11	< 185
SW-2	04/26/11	< 187
SW-2	04/27/11	< 188
SW-2	04/28/11	< 189
SW-2	04/29/11	< 187
SW-2	04/30/11	< 190
SW-2	05/01/11	< 188
SW-2	05/02/11	< 189
SW-2	05/03/11	< 192
SW-2	05/04/11	< 192
SW-2	05/05/11	< 193
SW-2	05/06/11	< 192
SW-2	05/07/11	< 185
SW-2	05/08/11	< 181
SW-2	05/09/11	< 185
SW-2	05/10/11	< 187
SW-2	05/11/11	< 190
SW-2	05/12/11	< 185
SW-2	05/13/11	< 196
SW-2	05/14/11	< 195
SW-2	05/15/11	< 194
SW-2	05/16/11	< 194
SW-2	05/17/11	< 188
SW-2	05/18/11	< 184
SW-2	05/19/11	< 166
SW-2	05/20/11	< 166
SW-2	05/21/11	< 167
SW-2	05/22/11	< 168
SW-2	05/23/11	< 165
SW-2	05/24/11	< 158
SW-2	05/25/11	< 139

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	05/28/11	< 167
SW-2	05/27/11	< 165
SW-2	05/28/11	< 166
SW-2	05/29/11	< 166
SW-2	05/30/11	< 165
SW-2	05/31/11	< 165
SW-2	06/01/11	< 166
SW-2	06/02/11	< 167
SW-2	06/03/11	< 162
SW-2	06/04/11	< 178
SW-2	06/05/11	< 179
SW-2	06/06/11	< 184
SW-2	06/07/11	< 184
SW-2	06/08/11	< 178
SW-2	06/09/11	< 168
SW-2	06/10/11	< 170
SW-2	06/11/11	< 167
SW-2	06/12/11	< 162
SW-2	06/13/11	< 171
SW-2	06/14/11	< 171
SW-2	06/15/11	< 177
SW-2	06/16/11	< 184
SW-2	06/17/11	< 180
SW-2	06/18/11	< 180
SW-2	06/19/11	< 180
SW-2	06/20/11	< 181
SW-2	06/21/11	< 184
SW-2	06/22/11	< 177
SW-2	06/23/11	< 182
SW-2	06/24/11	< 180
SW-2	06/25/11	< 182
SW-2	06/26/11	< 184
SW-2	06/27/11	< 181
SW-2	06/28/11	< 179
SW-2	06/29/11	< 178
SW-2	06/30/11	< 180
SW-2	07/01/11	< 170
SW-2	07/02/11	< 170
SW-2	07/03/11	< 172
SW-2	07/04/11	< 175
SW-2	07/05/11	< 171
SW-2	07/06/11	< 171
SW-2	07/07/11	< 162
SW-2	07/08/11	< 161
SW-2	07/09/11	< 162
SW-2	07/10/11	< 170
SW-2	07/11/11	< 167
SW-2	07/12/11	< 169
SW-2	07/13/11	< 169
SW-2	07/14/11	< 169
SW-2	07/15/11	< 171
SW-2	07/16/11	< 170
SW-2	07/17/11	< 170

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	07/18/11	< 171
SW-2	07/19/11	< 170
SW-2	07/20/11	< 171
SW-2	07/21/11	< 199
SW-2	07/22/11	< 183
SW-2	07/23/11	< 195
SW-2	07/24/11	< 196
SW-2	07/25/11	< 197
SW-2	07/26/11	< 198
SW-2	07/27/11	< 196
SW-2	07/28/11	< 171
SW-2	07/29/11	< 172
SW-2	07/30/11	< 173
SW-2	07/31/11	< 170
SW-2	08/01/11	< 197
SW-2	08/02/11	< 171
SW-2	08/03/11	< 171
SW-2	08/04/11	< 178
SW-2	08/05/11	< 177
SW-2	08/06/11	< 178
SW-2	08/07/11	< 177
SW-2	08/08/11	< 178
SW-2	08/18/11	< 173
SW-2	08/19/11	< 182
SW-2	08/20/11	< 182
SW-2	08/21/11	< 182
SW-2	08/22/11	< 181
SW-2	08/23/11	< 183
SW-2	08/24/11	< 184
SW-2	08/25/11	< 172
SW-2	08/26/11	< 173
SW-2	08/27/11	< 175
SW-2	08/31/11	< 173
SW-2	09/01/11	< 175
SW-2	09/02/11	< 173
SW-2	09/03/11	< 176
SW-2	09/04/11	< 174
SW-2	09/05/11	< 172
SW-2	09/06/11	< 173
SW-2	09/07/11	< 168
SW-2	09/08/11	< 170
SW-2	09/13/11	< 169
SW-2	09/14/11	< 195
SW-2	09/15/11	< 198
SW-2	09/16/11	< 200
SW-2	09/17/11	< 197
SW-2	09/21/11	< 193
SW-2	09/22/11	< 194
SW-2	09/23/11	< 186
SW-2	09/24/11	< 185
SW-2	09/25/11	< 185
SW-2	09/26/11	< 186
SW-2	09/27/11	< 184

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	09/28/11	< 187
SW-2	09/29/11	< 191
SW-2	09/30/11	< 187
SW-2	10/01/11	< 188
SW-2	10/02/11	< 189
SW-2	10/03/11	< 188
SW-2	10/04/11	< 188
SW-2	10/05/11	< 191
SW-2	10/06/11	< 185
SW-2	10/07/11	< 184
SW-2	10/08/11	< 184
SW-2	10/09/11	< 184
SW-2	10/10/11	< 184
SW-2	10/11/11	< 185
SW-2	10/12/11	< 186
SW-2	10/14/11	< 188
SW-2	10/15/11	< 184
SW-2	10/16/11	< 188
SW-2	10/17/11	< 184
SW-2	10/18/11	< 187
SW-2	10/19/11	< 186
SW-2	10/20/11	< 186
SW-2	10/21/11	< 186
SW-2	10/22/11	< 187
SW-2	10/23/11	< 186
SW-2	10/24/11	< 179
SW-2	10/25/11	< 175
SW-2	10/26/11	< 178
SW-2	10/27/11	< 180
SW-2	10/28/11	< 180
SW-2	10/29/11	< 181
SW-2	10/30/11	< 177
SW-2	10/31/11	< 180
SW-2	11/01/11	< 180
SW-2	11/02/11	< 179
SW-2	11/03/11	< 180
SW-2	11/04/11	< 167
SW-2	11/05/11	< 163
SW-2	11/06/11	< 167
SW-2	11/07/11	< 165
SW-2	11/08/11	< 167
SW-2	11/09/11	< 168
SW-2	11/10/11	< 170
SW-2	11/11/11	< 168
SW-2	11/12/11	< 166
SW-2	11/13/11	< 168
SW-2	11/14/11	< 167
SW-2	11/15/11	< 168
SW-2	11/16/11	< 168
SW-2	11/17/11	< 171
SW-2	11/18/11	< 169
SW-2	11/19/11	< 171
SW-2	11/20/11	< 170

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-2	11/21/11	< 171
SW-2	11/22/11	< 169
SW-2	11/23/11	< 170
SW-2	11/24/11	< 169
SW-2	11/25/11	< 170
SW-2	11/26/11	< 170
SW-2	11/27/11	< 168
SW-2	11/28/11	< 170
SW-2	11/29/11	< 169
SW-2	11/30/11	< 168
SW-2	12/01/11	< 189
SW-2	12/02/11	< 193
SW-2	12/03/11	< 197
SW-2	12/04/11	< 193
SW-2	12/05/11	< 192
SW-2	12/06/11	< 193
SW-2	12/07/11	< 188
SW-2	12/08/11	< 193
SW-2	12/09/11	< 196
SW-2	12/10/11	< 191
SW-2	12/11/11	< 190
SW-2	12/12/11	< 191
SW-2	12/13/11	< 195
SW-2	12/14/11	< 195
SW-2	12/15/11	< 196
SW-2	12/16/11	< 184
SW-2	12/17/11	< 182
SW-2	12/18/11	< 184
SW-2	12/19/11	< 182
SW-2	12/20/11	< 181
SW-2	12/21/11	< 178
SW-2	12/22/11	< 179
SW-2	12/23/11	< 178
SW-2	12/24/11	< 177
SW-2	12/25/11	< 178
SW-2	12/26/11	< 175
SW-2	12/27/11	< 180
SW-2	12/28/11	< 179
SW-2	12/29/11	< 179
SW-2	12/30/11	< 168
SW-2	12/31/11	< 168
SW-3	02/09/11	< 156
SW-3	04/14/11	< 180
SW-3	04/14/11	< 181
SW-3	07/12/11	< 184
SW-3	10/11/11	< 162

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	01/01/11	< 3	< 3	< 7	< 3	< 6	< 4	< 7	< 12	< 3	< 3	< 25	< 8
MCD	01/02/11	< 2	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 20	< 6
MCD	01/03/11	< 3	< 4	< 7	< 3	< 6	< 4	< 6	< 11	< 3	< 4	< 23	< 6
MCD	01/04/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 6	< 3	< 3	< 22	< 6
MCD	01/05/11	< 3	< 2	< 5	< 2	< 5	< 2	< 4	< 7	< 2	< 2	< 17	< 5
MCD	01/06/11	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 13	< 3	< 4	< 26	< 6
MCD	01/07/11	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 11	< 3	< 4	< 25	< 7
MCD	01/08/11	< 4	< 4	< 9	< 4	< 6	< 4	< 7	< 12	< 4	< 4	< 28	< 9
MCD	01/09/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 10	< 4	< 4	< 24	< 8
MCD	01/10/11	< 4	< 5	< 10	< 4	< 9	< 5	< 8	< 11	< 4	< 5	< 26	< 6
MCD	01/11/11	< 2	< 2	< 6	< 3	< 5	< 3	< 4	< 12	< 2	< 3	< 23	< 6
MCD	01/12/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 2	< 3	< 24	< 8
MCD	01/13/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 2	< 3	< 21	< 6
MCD	01/14/11	< 2	< 3	< 6	< 3	< 6	< 3	< 5	< 12	< 3	< 2	< 23	< 6
MCD	01/15/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 6	< 2	< 2	< 16	< 4
MCD	01/16/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 6	< 2	< 3	< 13	< 4
MCD	01/17/11	< 3	< 3	< 5	< 2	< 5	< 3	< 4	< 6	< 2	< 3	< 15	< 5
MCD	01/18/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 11	< 3	< 3	< 22	< 7
MCD	01/19/11	< 2	< 3	< 5	< 4	< 5	< 3	< 5	< 6	< 2	< 3	< 16	< 6
MCD	01/20/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 22	< 5
MCD	01/21/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 17	< 5
MCD	01/22/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 16	< 5
MCD	01/23/11	< 2	< 3	< 6	< 3	< 5	< 3	< 4	< 6	< 2	< 3	< 16	< 5
MCD	01/24/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 7	< 3	< 3	< 16	< 5
MCD	01/25/11	< 3	< 2	< 5	< 3	< 5	< 3	< 4	< 5	< 2	< 3	< 14	< 4
MCD	01/26/11	< 2	< 2	< 3	< 2	< 4	< 2	< 3	< 4	< 2	< 2	< 11	< 3
MCD	01/27/11	< 3	< 3	< 6	< 3	< 6	< 4	< 5	< 15	< 3	< 3	< 29	< 8
MCD	01/28/11	< 2	< 2	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 2	< 23	< 7
MCD	01/29/11	< 3	< 3	< 8	< 4	< 6	< 4	< 6	< 14	< 3	< 3	< 28	< 6
MCD	01/30/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 9	< 2	< 2	< 17	< 5
MCD	01/31/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 9	< 3	< 3	< 18	< 5
MCD	02/01/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 9	< 3	< 3	< 20	< 7
MCD	02/02/11	< 3	< 3	< 5	< 3	< 5	< 3	< 4	< 8	< 3	< 3	< 17	< 5
MCD	02/03/11	< 2	< 2	< 5	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 16	< 5

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	02/04/11	< 3	< 3	< 7	< 3	< 8	< 4	< 8	< 8	< 3	< 3	< 21	< 7
MCD	02/05/11	< 3	< 3	< 6	< 3	< 5	< 2	< 5	< 6	< 2	< 3	< 17	< 5
MCD	02/06/11	< 3	< 3	< 6	< 3	< 5	< 3	< 6	< 6	< 3	< 3	< 18	< 5
MCD	02/07/11	< 3	< 3	< 7	< 3	< 7	< 3	< 6	< 7	< 3	< 3	< 19	< 5
MCD	02/08/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 4	< 2	< 2	< 11	< 4
MCD	02/09/11	< 3	< 3	< 5	< 3	< 6	< 3	< 5	< 5	< 3	< 3	< 15	< 3
MCD	02/10/11	< 2	< 2	< 5	< 2	< 3	< 3	< 4	< 10	< 2	< 2	< 20	< 5
MCD	02/11/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 15	< 3	< 3	< 26	< 6
MCD	02/12/11	< 3	< 4	< 8	< 3	< 7	< 4	< 8	< 14	< 3	< 3	< 26	< 9
MCD	02/13/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 21	< 7
MCD	02/14/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 10	< 3	< 3	< 22	< 7
MCD	02/15/11	< 3	< 2	< 5	< 3	< 4	< 3	< 5	< 9	< 2	< 3	< 20	< 6
MCD	02/16/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 8	< 2	< 3	< 17	< 6
MCD	02/17/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 2	< 3	< 27	< 9
MCD	02/18/11	< 2	< 2	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 21	< 6
MCD	02/19/11	< 3	< 3	< 8	< 3	< 8	< 4	< 7	< 13	< 3	< 3	< 29	< 8
MCD	02/20/11	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 9	< 2	< 2	< 21	< 6
MCD	02/21/11	< 2	< 2	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 18	< 7
MCD	02/22/11	< 3	< 3	< 5	< 2	< 5	< 3	< 5	< 6	< 2	< 3	< 18	< 5
MCD	02/23/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 9	< 3	< 3	< 22	< 6
MCD	02/24/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 13	< 3	< 3	< 27	< 7
MCD	02/25/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 13	< 3	< 3	< 25	< 6
MCD	02/26/11	< 2	< 3	< 6	< 3	< 5	< 2	< 5	< 8	< 2	< 3	< 18	< 6
MCD	02/27/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 10	< 3	< 2	< 21	< 7
MCD	02/28/11	< 3	< 3	< 5	< 3	< 5	< 3	< 4	< 8	< 2	< 3	< 18	< 6
MCD	03/01/11	< 2	< 3	< 6	< 3	< 6	< 3	< 5	< 8	< 3	< 3	< 17	< 5
MCD	03/02/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 5	< 2	< 2	< 13	< 4
MCD	03/03/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 10	< 2	< 2	< 23	< 6
MCD	03/04/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 14	< 3	< 4	< 26	< 7
MCD	03/05/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 22	< 6
MCD	03/06/11	< 3	< 4	< 6	< 3	< 7	< 3	< 6	< 12	< 3	< 4	< 28	< 8
MCD	03/07/11	< 3	< 3	< 5	< 2	< 4	< 3	< 5	< 9	< 2	< 2	< 18	< 5
MCD	03/08/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 7	< 3	< 3	< 20	< 5
MCD	03/09/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 8	< 3	< 3	< 19	< 5

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Ce-134	Ce-137	Ba-140	La-140
MCD	03/10/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 13	< 2	< 2	< 21	< 7
MCD	03/11/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 25	< 3	< 3	< 37	< 14
MCD	03/12/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 21	< 2	< 3	< 35	< 9
MCD	03/13/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 15	< 2	< 2	< 23	< 7
MCD	03/14/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 15	< 2	< 3	< 31	< 9
MCD	03/15/11	< 2	< 3	< 5	< 2	< 4	< 3	< 5	< 13	< 2	< 2	< 24	< 6
MCD	03/16/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 28	< 6
MCD	03/17/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 12	< 2	< 2	< 19	< 7
MCD	03/18/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 3	< 3	< 27	< 7
MCD	03/19/11	< 3	< 2	< 6	< 2	< 5	< 3	< 5	< 11	< 2	< 2	< 21	< 6
MCD	03/20/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 9	< 2	< 2	< 17	< 6
MCD	03/21/11	< 2	< 3	< 6	< 3	< 6	< 3	< 5	< 12	< 3	< 3	< 23	< 7
MCD	03/22/11	< 2	< 2	< 5	< 3	< 5	< 3	< 5	< 10	< 2	< 3	< 20	< 6
MCD	03/23/11	< 3	< 4	< 7	< 4	< 7	< 3	< 6	< 11	< 3	< 3	< 24	< 6
MCD	03/24/11	< 3	< 3	< 6	< 3	< 6	< 4	< 6	< 24	< 3	< 3	< 36	< 11
MCD	03/25/11	< 3	< 4	< 6	< 3	< 7	< 4	< 7	< 29	< 3	< 4	< 48	< 10
MCD	03/26/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 21	< 2	< 3	< 33	< 10
MCD	03/27/11	< 3	< 4	< 9	< 4	< 7	< 4	< 7	< 23	< 3	< 3	< 40	< 14
MCD	03/28/11	< 4	< 4	< 10	< 4	< 6	< 5	< 6	< 27	< 4	< 4	< 46	< 14
MCD	03/29/11	< 4	< 4	< 10	< 4	< 6	< 5	< 6	< 22	< 4	< 4	< 41	< 10
MCD	03/30/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 5
MCD	04/07/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 13	< 2	< 2	< 20	< 7
MCD	04/08/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 13	< 2	< 2	< 22	< 6
MCD	04/09/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 22	< 7
MCD	04/10/11	< 2	< 3	< 6	< 2	< 4	< 3	< 4	< 11	< 2	< 2	< 23	< 6
MCD	04/11/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 22	< 6
MCD	04/12/11	< 2	< 2	< 4	< 3	< 4	< 2	< 4	< 11	< 2	< 2	< 18	< 6
MCD	04/13/11	< 3	< 3	< 7	< 3	< 6	< 4	< 5	< 14	< 3	< 3	< 29	< 9
MCD	04/14/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 12	< 2	< 2	< 22	< 6
MCD	04/14/11	< 3	< 3	< 6	< 4	< 7	< 3	< 7	< 28	< 3	< 3	< 45	< 14
MCD	04/15/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 24	< 2	< 2	< 35	< 9
MCD	04/16/11	< 3	< 4	< 7	< 3	< 5	< 3	< 6	< 22	< 3	< 3	< 38	< 10
MCD	04/17/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 23	< 3	< 3	< 35	< 10
MCD	04/18/11	< 3	< 3	< 6	< 3	< 5	< 3	< 6	< 18	< 2	< 3	< 33	< 9

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	04/19/11	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 23	< 3	< 4	< 39	< 13
MCD	04/20/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 18	< 3	< 3	< 33	< 6
MCD	04/21/11	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 31	< 1	< 1	< 34	< 12
MCD	04/22/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 48	< 2	< 2	< 40	< 12
MCD	04/23/11	< 2	< 2	< 6	< 2	< 3	< 2	< 4	< 33	< 1	< 2	< 36	< 14
MCD	04/24/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 38	< 2	< 2	< 44	< 10
MCD	04/25/11	< 2	< 3	< 6	< 2	< 4	< 2	< 5	< 31	< 2	< 2	< 41	< 13
MCD	04/26/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 35	< 2	< 2	< 45	< 11
MCD	04/27/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 31	< 2	< 2	< 42	< 12
MCD	04/28/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 2	< 3	< 19	< 6
MCD	04/29/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 7	< 2	< 2	< 16	< 5
MCD	04/30/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 6	< 2	< 2	< 14	< 3
MCD	05/01/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 17	< 5
MCD	05/02/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 5	< 2	< 2	< 11	< 3
MCD	05/03/11	< 2	< 3	< 5	< 2	< 4	< 2	< 4	< 5	< 2	< 2	< 13	< 4
MCD	05/04/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 5	< 2	< 2	< 13	< 4
MCD	05/05/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 39	< 2	< 2	< 41	< 12
MCD	05/06/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 36	< 2	< 2	< 39	< 12
MCD	05/07/11	< 2	< 3	< 6	< 2	< 4	< 2	< 4	< 30	< 2	< 2	< 39	< 10
MCD	05/08/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 33	< 2	< 2	< 38	< 10
MCD	05/09/11	< 2	< 3	< 6	< 2	< 4	< 3	< 4	< 30	< 2	< 2	< 39	< 12
MCD	05/10/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 27	< 2	< 2	< 36	< 11
MCD	05/11/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 24	< 2	< 2	< 31	< 9
MCD	05/12/11	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 40	< 2	< 2	< 45	< 13
MCD	05/13/11	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 33	< 1	< 2	< 40	< 14
MCD	05/14/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 40	< 2	< 2	< 47	< 14
MCD	05/15/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 34	< 2	< 2	< 42	< 11
MCD	05/18/11	< 3	< 3	< 7	< 2	< 5	< 3	< 6	< 32	< 2	< 2	< 43	< 11
MCD	05/25/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 29	< 3	< 3	< 45	< 13
MCD	06/01/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 31	< 3	< 3	< 43	< 13
MCD	06/03/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 34	< 2	< 2	< 39	< 10
MCD	06/04/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 36	< 2	< 2	< 45	< 12
MCD	06/05/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 36	< 2	< 3	< 45	< 14
MCD	06/06/11	< 2	< 2	< 7	< 2	< 4	< 3	< 5	< 29	< 2	< 2	< 44	< 14

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

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TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	06/08/11	< 2	< 3	< 6	< 2	< 5	< 2	< 4	< 23	< 2	< 2	< 34	< 15
MCD	06/08/11	< 3	< 4	< 8	< 3	< 6	< 4	< 6	< 33	< 3	< 3	< 45	< 14
MCD	06/09/11	< 2	< 3	< 7	< 3	< 5	< 3	< 5	< 44	< 2	< 2	< 54	< 13
MCD	06/10/11	< 3	< 4	< 8	< 3	< 6	< 3	< 6	< 45	< 3	< 3	< 59	< 14
MCD	06/11/11	< 2	< 3	< 7	< 2	< 4	< 3	< 5	< 58	< 2	< 2	< 37	< 13
MCD	06/12/11	< 3	< 3	< 7	< 3	< 5	< 3	< 6	< 37	< 2	< 2	< 52	< 15
MCD	06/13/11	< 2	< 2	< 6	< 2	< 3	< 3	< 5	< 28	< 2	< 2	< 40	< 14
MCD	06/14/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 37	< 3	< 3	< 46	< 15
MCD	06/15/11	< 2	< 3	< 7	< 3	< 5	< 4	< 6	< 30	< 3	< 3	< 41	< 12
MCD	06/16/11	< 1	< 1	< 3	< 1	< 2	< 2	< 3	< 15	< 1	< 1	< 22	< 5
MCD	06/17/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 15	< 1	< 1	< 23	< 7
MCD	06/18/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 15	< 1	< 2	< 22	< 7
MCD	06/19/11	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 15	< 1	< 1	< 20	< 5
MCD	06/20/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 14	< 1	< 2	< 21	< 6
MCD	06/21/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 15	< 1	< 2	< 24	< 6
MCD	06/22/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 27	< 7
MCD	06/23/11	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 43	< 2	< 2	< 43	< 14
MCD	06/24/11	< 1	< 2	< 6	< 2	< 4	< 2	< 4	< 49	< 2	< 2	< 46	< 15
MCD	06/25/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 39	< 2	< 2	< 45	< 11
MCD	06/26/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 43	< 2	< 2	< 47	< 15
MCD	06/27/11	< 2	< 3	< 5	< 2	< 3	< 3	< 5	< 39	< 2	< 2	< 43	< 14
MCD	06/28/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 36	< 2	< 2	< 41	< 12
MCD	06/29/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 29	< 2	< 2	< 33	< 9
MCD	06/30/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 37	< 2	< 3	< 47	< 14
MCD	07/01/11	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 13	< 2	< 1	< 21	< 5
MCD	07/02/11	< 2	< 2	< 6	< 3	< 5	< 3	< 5	< 14	< 2	< 2	< 23	< 7
MCD	07/03/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 12	< 2	< 2	< 21	< 5
MCD	07/04/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 6
MCD	07/05/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 15	< 3	< 3	< 27	< 9
MCD	07/06/11	< 3	< 4	< 7	< 3	< 7	< 4	< 6	< 14	< 3	< 3	< 29	< 8
MCD	07/07/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 10	< 3	< 3	< 22	< 7
MCD	07/08/11	< 2	< 3	< 5	< 3	< 5	< 3	< 4	< 9	< 2	< 3	< 19	< 6
MCD	07/09/11	< 4	< 4	< 9	< 4	< 9	< 4	< 8	< 12	< 4	< 4	< 28	< 10
MCD	07/10/11	< 3	< 3	< 7	< 3	< 7	< 3	< 6	< 9	< 3	< 3	< 21	< 6

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	07/11/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 8	< 3	< 3	< 21	< 6
MCD	07/12/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 17	< 5
MCD	07/13/11	< 3	< 3	< 5	< 3	< 6	< 3	< 5	< 6	< 3	< 3	< 16	< 5
MCD	07/14/11	< 4	< 4	< 6	< 4	< 7	< 4	< 7	< 10	< 3	< 4	< 24	< 7
MCD	07/15/11	< 4	< 4	< 6	< 4	< 6	< 4	< 7	< 10	< 4	< 4	< 25	< 7
MCD	07/16/11	< 4	< 4	< 9	< 4	< 6	< 4	< 7	< 9	< 4	< 4	< 23	< 7
MCD	07/17/11	< 3	< 4	< 6	< 4	< 7	< 4	< 6	< 9	< 3	< 4	< 21	< 7
MCD	07/18/11	< 6	< 6	< 12	< 6	< 12	< 6	< 10	< 12	< 5	< 6	< 31	< 11
MCD	07/19/11	< 4	< 4	< 9	< 5	< 9	< 5	< 6	< 10	< 4	< 5	< 26	< 8
MCD	07/20/11	< 4	< 4	< 8	< 4	< 6	< 4	< 7	< 7	< 4	< 4	< 20	< 6
MCD	07/21/11	< 4	< 4	< 9	< 4	< 9	< 5	< 6	< 13	< 4	< 4	< 29	< 9
MCD	07/22/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 7	< 2	< 2	< 17	< 5
MCD	07/23/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 10	< 3	< 3	< 23	< 7
MCD	07/24/11	< 3	< 3	< 7	< 4	< 7	< 4	< 6	< 8	< 3	< 3	< 20	< 7
MCD	07/25/11	< 3	< 4	< 7	< 4	< 7	< 4	< 6	< 9	< 3	< 4	< 22	< 7
MCD	07/26/11	< 4	< 4	< 7	< 4	< 7	< 4	< 7	< 6	< 3	< 4	< 22	< 6
MCD	07/27/11	< 4	< 4	< 6	< 4	< 6	< 4	< 7	< 6	< 4	< 4	< 20	< 7
MCD	07/28/11	< 5	< 4	< 10	< 4	< 9	< 5	< 6	< 12	< 4	< 5	< 27	< 9
MCD	07/29/11	< 3	< 4	< 7	< 3	< 7	< 3	< 6	< 8	< 4	< 3	< 21	< 6
MCD	07/30/11	< 3	< 4	< 9	< 5	< 9	< 5	< 8	< 10	< 4	< 5	< 27	< 9
MCD	07/31/11	< 4	< 4	< 9	< 5	< 8	< 5	< 7	< 8	< 4	< 5	< 23	< 7
MCD	08/01/11	< 5	< 5	< 10	< 5	< 6	< 5	< 9	< 8	< 4	< 5	< 24	< 7
MCD	08/02/11	< 4	< 4	< 6	< 4	< 6	< 4	< 7	< 8	< 4	< 4	< 20	< 6
MCD	08/03/11	< 5	< 5	< 10	< 5	< 10	< 5	< 9	< 6	< 5	< 5	< 22	< 7
MCD	08/04/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 19	< 5
MCD	08/05/11	< 3	< 3	< 6	< 3	< 7	< 4	< 7	< 12	< 3	< 3	< 29	< 9
MCD	08/06/11	< 4	< 4	< 10	< 4	< 9	< 4	< 8	< 14	< 4	< 4	< 31	< 11
MCD	08/07/11	< 4	< 4	< 9	< 4	< 6	< 4	< 7	< 14	< 4	< 4	< 28	< 9
MCD	08/08/11	< 4	< 5	< 10	< 5	< 6	< 5	< 8	< 12	< 4	< 4	< 29	< 10
MCD	08/09/11	< 4	< 5	< 11	< 5	< 9	< 5	< 8	< 11	< 4	< 5	< 28	< 10
MCD	08/18/11	< 4	< 4	< 9	< 4	< 6	< 4	< 7	< 11	< 3	< 4	< 24	< 8
MCD	08/19/11	< 4	< 4	< 10	< 4	< 9	< 5	< 6	< 12	< 4	< 4	< 28	< 9
MCD	08/20/11	< 4	< 4	< 10	< 5	< 6	< 5	< 6	< 12	< 4	< 4	< 27	< 9
MCD	08/21/11	< 4	< 4	< 9	< 4	< 6	< 4	< 7	< 9	< 4	< 4	< 24	< 9

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Ce-134	Ce-137	Ba-140	La-140
MCD	08/22/11	< 4	< 4	< 9	< 4	< 9	< 5	< 8	< 9	< 4	< 4	< 24	< 8
MCD	08/23/11	< 5	< 4	< 10	< 5	< 9	< 5	< 8	< 10	< 4	< 5	< 25	< 8
MCD	08/24/11	< 6	< 6	< 13	< 6	< 11	< 6	< 10	< 11	< 5	< 6	< 30	< 10
MCD	08/25/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 2	< 2	< 21	< 5
MCD	08/26/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 11	< 1	< 2	< 18	< 6
MCD	08/27/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 12	< 1	< 1	< 19	< 6
MCD	08/31/11	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 8	< 1	< 2	< 15	< 4
MCD	09/01/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 13	< 3	< 3	< 25	< 8
MCD	09/02/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 13	< 2	< 3	< 23	< 8
MCD	09/03/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 13	< 3	< 3	< 25	< 7
MCD	09/04/11	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 13	< 3	< 4	< 28	< 8
MCD	09/05/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 14	< 4	< 4	< 30	< 10
MCD	09/06/11	< 3	< 4	< 9	< 4	< 7	< 4	< 7	< 12	< 3	< 4	< 27	< 9
MCD	09/07/11	< 4	< 4	< 9	< 4	< 9	< 4	< 8	< 14	< 4	< 4	< 29	< 10
MCD	09/08/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 11	< 3	< 4	< 25	< 8
MCD	09/13/11	< 5	< 6	< 13	< 5	< 11	< 6	< 10	< 10	< 5	< 5	< 29	< 10
MCD	09/14/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 13	< 2	< 2	< 19	< 5
MCD	09/15/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 22	< 5
MCD	09/16/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 13	< 2	< 2	< 21	< 7
MCD	09/17/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 21	< 5
MCD	09/21/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 13	< 2	< 2	< 25	< 8
MCD	09/22/11	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 13	< 2	< 2	< 22	< 6
MCD	09/23/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 2	< 3	< 23	< 7
MCD	09/24/11	< 3	< 2	< 5	< 3	< 5	< 3	< 5	< 8	< 2	< 3	< 20	< 6
MCD	09/25/11	< 3	< 4	< 9	< 4	< 7	< 4	< 7	< 15	< 3	< 3	< 27	< 7
MCD	09/26/11	< 3	< 4	< 7	< 3	< 7	< 4	< 7	< 14	< 3	< 3	< 26	< 8
MCD	09/27/11	< 4	< 4	< 9	< 4	< 7	< 4	< 7	< 14	< 4	< 4	< 30	< 9
MCD	09/28/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 14	< 4	< 4	< 29	< 9
MCD	09/29/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 18	< 6
MCD	09/30/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 23	< 7
MCD	10/01/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 25	< 7
MCD	10/02/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 12	< 3	< 3	< 24	< 8
MCD	10/03/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 14	< 3	< 3	< 27	< 7
MCD	10/04/11	< 5	< 5	< 9	< 4	< 9	< 5	< 8	< 15	< 4	< 5	< 32	< 13

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	10/05/11	<4	<4	<9	<4	<8	<4	<7	<14	<4	<4	<30	<9
MCD	10/06/11	<5	<5	<10	<5	<10	<5	<9	<11	<4	<5	<27	<9
MCD	10/07/11	<5	<5	<11	<5	<12	<6	<9	<14	<6	<6	<33	<8
MCD	10/08/11	<3	<3	<6	<3	<5	<3	<5	<11	<3	<3	<22	<7
MCD	10/09/11	<3	<3	<5	<2	<6	<3	<4	<9	<2	<2	<20	<7
MCD	10/10/11	<3	<3	<7	<3	<6	<3	<6	<10	<3	<3	<21	<7
MCD	10/11/11	<3	<3	<5	<3	<6	<3	<5	<9	<3	<3	<21	<6
MCD	10/12/11	<2	<2	<5	<2	<5	<2	<4	<11	<2	<3	<22	<7
MCD	10/14/11	<4	<4	<9	<4	<8	<4	<7	<15	<3	<4	<32	<10
MCD	10/15/11	<2	<3	<6	<3	<6	<3	<5	<11	<2	<3	<22	<8
MCD	10/16/11	<3	<3	<5	<4	<6	<3	<6	<11	<2	<3	<22	<7
MCD	10/17/11	<3	<3	<6	<3	<6	<3	<6	<10	<3	<3	<20	<7
MCD	10/18/11	<3	<4	<7	<3	<6	<3	<7	<10	<3	<3	<21	<9
MCD	10/19/11	<3	<3	<7	<3	<6	<4	<6	<11	<3	<3	<23	<8
MCD	10/20/11	<3	<3	<7	<3	<6	<4	<6	<11	<3	<3	<24	<7
MCD	10/21/11	<5	<5	<11	<5	<9	<6	<9	<14	<4	<5	<33	<10
MCD	10/22/11	<4	<4	<9	<4	<8	<4	<7	<11	<4	<4	<27	<8
MCD	10/23/11	<6	<6	<12	<6	<11	<6	<10	<13	<5	<6	<33	<10
MCD	10/24/11	<5	<5	<11	<5	<11	<6	<9	<12	<5	<5	<28	<10
MCD	10/25/11	<4	<5	<10	<5	<10	<5	<8	<10	<4	<5	<25	<8
MCD	10/26/11	<4	<5	<9	<5	<9	<5	<9	<10	<5	<5	<24	<7
MCD	10/27/11	<2	<2	<4	<1	<3	<2	<3	<10	<1	<2	<17	<6
MCD	10/28/11	<2	<2	<5	<2	<4	<2	<4	<11	<2	<2	<20	<6
MCD	10/29/11	<2	<2	<5	<2	<5	<3	<4	<11	<2	<2	<22	<6
MCD	10/30/11	<2	<2	<5	<2	<5	<3	<4	<9	<2	<2	<19	<5
MCD	10/31/11	<2	<2	<6	<3	<5	<3	<4	<10	<2	<2	<21	<5
MCD	11/01/11	<3	<3	<5	<3	<5	<3	<5	<10	<2	<3	<19	<7
MCD	11/02/11	<3	<3	<6	<3	<5	<3	<6	<11	<3	<3	<22	<6
MCD	11/03/11	<1	<1	<3	<1	<3	<2	<3	<5	<1	<2	<12	<3
MCD	11/04/11	<2	<2	<5	<2	<4	<2	<4	<8	<2	<2	<16	<5
MCD	11/05/11	<2	<2	<4	<2	<3	<2	<3	<5	<1	<2	<12	<3
MCD	11/06/11	<2	<2	<4	<3	<3	<2	<3	<5	<2	<2	<13	<4
MCD	11/07/11	<2	<2	<5	<2	<4	<2	<4	<6	<2	<3	<16	<5
MCD	11/08/11	<3	<2	<6	<3	<6	<3	<4	<7	<3	<3	<17	<5

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	11/09/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 5	< 2	< 2	< 13	< 3
MCD	11/10/11	< 3	< 3	< 8	< 3	< 7	< 4	< 7	< 15	< 3	< 3	< 29	< 10
MCD	11/11/11	< 4	< 5	< 11	< 5	< 10	< 5	< 8	< 15	< 4	< 4	< 33	< 11
MCD	11/12/11	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 13	< 3	< 4	< 29	< 9
MCD	11/13/11	< 3	< 3	< 7	< 4	< 6	< 4	< 6	< 11	< 3	< 3	< 25	< 8
MCD	11/14/11	< 4	< 5	< 10	< 5	< 10	< 5	< 9	< 15	< 4	< 5	< 34	< 11
MCD	11/15/11	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 12	< 4	< 4	< 28	< 8
MCD	11/16/11	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 12	< 4	< 5	< 29	< 9
MCD	11/17/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 28	< 9
MCD	11/18/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 14	< 3	< 3	< 28	< 8
MCD	11/19/11	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 13	< 3	< 4	< 28	< 9
MCD	11/20/11	< 4	< 4	< 10	< 4	< 7	< 4	< 7	< 12	< 3	< 4	< 27	< 9
MCD	11/21/11	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 14	< 3	< 4	< 28	< 9
MCD	11/22/11	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 12	< 3	< 4	< 28	< 8
MCD	11/23/11	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 14	< 4	< 4	< 32	< 9
MCD	11/24/11	< 4	< 5	< 10	< 4	< 9	< 4	< 8	< 11	< 4	< 4	< 28	< 10
MCD	11/25/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 12	< 3	< 3	< 23	< 7
MCD	11/26/11	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 8	< 2	< 3	< 19	< 7
MCD	11/27/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 10	< 3	< 3	< 22	< 7
MCD	11/28/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 21	< 5
MCD	11/29/11	< 3	< 3	< 5	< 3	< 6	< 4	< 6	< 10	< 3	< 3	< 20	< 5
MCD	11/30/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 6	< 3	< 3	< 17	< 7
MCD	12/01/11	< 5	< 5	< 11	< 5	< 10	< 5	< 9	< 13	< 4	< 5	< 31	< 10
MCD	12/02/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 9	< 3	< 3	< 20	< 6
MCD	12/03/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 7	< 2	< 2	< 16	< 5
MCD	12/04/11	< 3	< 3	< 8	< 4	< 7	< 3	< 6	< 9	< 3	< 3	< 20	< 7
MCD	12/05/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 6	< 2	< 2	< 15	< 4
MCD	12/06/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 8	< 3	< 4	< 20	< 6
MCD	12/07/11	< 3	< 3	< 7	< 4	< 7	< 4	< 6	< 8	< 3	< 3	< 20	< 6
MCD	12/08/11	< 3	< 3	< 7	< 3	< 7	< 3	< 6	< 10	< 3	< 3	< 22	< 7
MCD	12/09/11	< 3	< 4	< 8	< 4	< 8	< 4	< 7	< 11	< 3	< 4	< 25	< 8
MCD	12/10/11	< 3	< 3	< 7	< 4	< 7	< 3	< 6	< 8	< 3	< 3	< 19	< 6
MCD	12/11/11	< 5	< 5	< 10	< 5	< 10	< 5	< 8	< 11	< 4	< 5	< 26	< 8
MCD	12/12/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 10	< 4	< 4	< 25	< 6

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

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TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MCD	12/13/11	<3	<4	<7	<4	<8	<4	<7	<8	<4	<4	<20	<8
MCD	12/14/11	<3	<3	<7	<4	<7	<4	<6	<7	<3	<4	<19	<6
MCD	12/15/11	<4	<4	<8	<4	<7	<4	<6	<6	<3	<4	<18	<6
MCD	12/16/11	<2	<2	<4	<2	<3	<2	<3	<11	<2	<2	<18	<5
MCD	12/17/11	<2	<2	<5	<2	<4	<2	<4	<9	<2	<2	<18	<6
MCD	12/18/11	<2	<3	<5	<3	<5	<3	<5	<9	<2	<2	<18	<7
MCD	12/19/11	<3	<3	<8	<3	<6	<3	<6	<10	<3	<3	<22	<8
MCD	12/20/11	<2	<2	<5	<2	<4	<2	<4	<8	<2	<2	<17	<4
MCD	12/21/11	<2	<2	<4	<2	<4	<2	<3	<7	<2	<2	<13	<4
MCD	12/22/11	<3	<3	<5	<3	<6	<3	<5	<9	<2	<3	<20	<6
MCD	12/23/11	<2	<2	<4	<2	<5	<2	<4	<6	<2	<2	<14	<5
MCD	12/24/11	<3	<4	<7	<4	<8	<4	<7	<10	<3	<4	<24	<7
MCD	12/25/11	<4	<4	<10	<5	<9	<5	<8	<11	<4	<4	<28	<8
MCD	12/26/11	<3	<3	<7	<3	<6	<4	<6	<9	<3	<3	<20	<6
MCD	12/27/11	<3	<4	<8	<4	<8	<4	<7	<8	<3	<4	<21	<7
MCD	12/28/11	<3	<4	<7	<4	<7	<4	<7	<8	<4	<4	<20	<7
MCD	12/29/11	<2	<2	<4	<2	<4	<2	<3	<4	<2	<2	<11	<3
MCD	12/30/11	<2	<2	<5	<2	<3	<2	<4	<24	<2	<2	<31	<9
MCD	12/31/11	<1	<2	<4	<2	<3	<2	<3	<18	<1	<1	<24	<6
SW-1	01/05/11	<2	<3	<5	<3	<4	<3	<4	<8	<2	<2	<17	<5
SW-1	01/12/11	<2	<2	<5	<2	<4	<3	<5	<12	<2	<3	<23	<6
SW-1	01/19/11	<3	<3	<6	<2	<5	<3	<5	<14	<2	<3	<26	<8
SW-1	01/26/11	<2	<2	<5	<3	<5	<3	<5	<8	<2	<3	<18	<4
SW-1	02/02/11	<3	<3	<7	<3	<7	<3	<6	<10	<3	<3	<23	<5
SW-1	02/09/11	<2	<2	<5	<3	<5	<2	<4	<5	<2	<3	<13	<4
SW-1	02/16/11	<3	<3	<8	<4	<7	<4	<6	<11	<3	<3	<23	<7
SW-1	02/23/11	<3	<3	<5	<3	<6	<3	<5	<8	<2	<3	<19	<6
SW-1	03/02/11	<3	<3	<5	<3	<6	<3	<6	<9	<3	<3	<21	<6
SW-1	03/09/11	<2	<3	<6	<3	<5	<3	<5	<7	<2	<3	<17	<5
SW-1	03/16/11	<3	<2	<5	<3	<5	<3	<5	<14	<2	<3	<25	<8
SW-1	03/23/11	<3	<2	<5	<2	<5	<2	<4	<9	<2	<3	<18	<5
SW-1	03/30/11	<5	<5	<10	<5	<9	<6	<9	<25	<4	<5	<46	<14
SW-1	04/13/11	<2	<2	<5	<2	<4	<2	<5	<12	<2	<2	<21	<6
SW-1	04/14/11	<3	<3	<6	<3	<6	<3	<5	<13	<3	<3	<25	<8

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

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TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-1	04/20/11	< 3	< 3	< 5	< 3	< 6	< 3	< 5	< 15	< 2	< 3	< 27	< 8
SW-1	04/27/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 30	< 2	< 2	< 39	< 13
SW-1	05/04/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 5	< 2	< 2	< 12	< 3
SW-1	05/11/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 31	< 2	< 3	< 44	< 12
SW-1	05/18/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 31	< 2	< 2	< 38	< 12
SW-1	05/25/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 19	< 2	< 2	< 29	< 12
SW-1	06/01/11	< 4	< 4	< 8	< 3	< 6	< 4	< 6	< 38	< 3	< 3	< 50	< 14
SW-1	06/08/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 28	< 2	< 2	< 37	< 9
SW-1	06/15/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 20	< 1	< 2	< 25	< 7
SW-1	06/22/11	< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 9	< 1	< 1	< 16	< 5
SW-1	06/29/11	< 2	< 3	< 8	< 3	< 5	< 3	< 5	< 42	< 2	< 3	< 56	< 12
SW-1	07/06/11	< 4	< 4	< 10	< 4	< 8	< 4	< 7	< 15	< 4	< 4	< 31	< 9
SW-1	07/13/11	< 4	< 4	< 10	< 5	< 9	< 4	< 8	< 9	< 4	< 4	< 24	< 8
SW-1	07/20/11	< 4	< 5	< 9	< 5	< 9	< 5	< 8	< 9	< 4	< 5	< 25	< 8
SW-1	07/27/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 4	< 2	< 2	< 10	< 12
SW-1	08/03/11	< 4	< 4	< 9	< 4	< 9	< 5	< 7	< 6	< 4	< 5	< 18	< 7
SW-1	08/18/11	< 5	< 5	< 10	< 5	< 10	< 5	< 8	< 13	< 4	< 5	< 30	< 9
SW-1	08/24/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 9	< 3	< 3	< 21	< 6
SW-1	09/01/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 8	< 2	< 2	< 17	< 5
SW-1	09/07/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 11	< 4	< 4	< 27	< 9
SW-1	09/14/11	< 2	< 2	< 3	< 2	< 3	< 2	< 3	< 13	< 1	< 1	< 20	< 6
SW-1	09/22/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 14	< 2	< 3	< 24	< 7
SW-1	09/28/11	< 4	< 4	< 10	< 4	< 8	< 5	< 8	< 12	< 4	< 5	< 29	< 9
SW-1	10/05/11	< 4	< 4	< 12	< 5	< 10	< 5	< 9	< 14	< 4	< 5	< 32	< 11
SW-1	10/12/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 13	< 2	< 2	< 21	< 6
SW-1	10/19/11	< 3	< 4	< 7	< 3	< 6	< 4	< 6	< 13	< 3	< 3	< 27	< 8
SW-1	10/26/11	< 4	< 4	< 8	< 4	< 8	< 4	< 6	< 8	< 4	< 4	< 20	< 7
SW-1	11/02/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 16	< 5
SW-1	11/09/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 4	< 2	< 2	< 11	< 3
SW-1	11/16/11	< 4	< 5	< 11	< 4	< 9	< 5	< 9	< 14	< 4	< 5	< 32	< 9
SW-1	11/23/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 12	< 2	< 3	< 22	< 7
SW-1	11/30/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 11	< 4	< 4	< 25	< 8
SW-1	12/07/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 20	< 7
SW-1	12/14/11	< 3	< 3	< 7	< 4	< 7	< 3	< 6	< 7	< 3	< 4	< 19	< 6

BOLD VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

B-35

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-1	12/21/11	< 2	< 3	< 5	< 3	< 5	< 3	< 4	< 8	< 2	< 2	< 17	< 5
SW-1	12/28/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 5	< 2	< 2	< 11	< 3
SW-2	01/01/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 2	< 3	< 22	< 8
SW-2	01/02/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 11	< 3	< 3	< 25	< 7
SW-2	01/03/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 10	< 3	< 3	< 22	< 6
SW-2	01/04/11	< 4	< 4	< 8	< 4	< 6	< 4	< 7	< 12	< 3	< 4	< 26	< 8
SW-2	01/05/11	< 2	< 3	< 6	< 3	< 5	< 3	< 4	< 7	< 2	< 3	< 15	< 4
SW-2	01/06/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 8	< 2	< 3	< 18	< 5
SW-2	01/07/11	< 3	< 3	< 6	< 3	< 6	< 3	< 4	< 7	< 3	< 3	< 17	< 5
SW-2	01/08/11	< 2	< 2	< 5	< 3	< 5	< 3	< 4	< 6	< 2	< 2	< 14	< 4
SW-2	01/09/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 6	< 2	< 3	< 16	< 5
SW-2	01/10/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 8	< 3	< 3	< 18	< 6
SW-2	01/11/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 19	< 5
SW-2	01/12/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 14	< 3	< 4	< 27	< 7
SW-2	01/13/11	< 2	< 3	< 5	< 3	< 5	< 2	< 4	< 10	< 2	< 2	< 21	< 6
SW-2	01/14/11	< 3	< 3	< 6	< 3	< 5	< 3	< 4	< 9	< 2	< 2	< 20	< 7
SW-2	01/15/11	< 3	< 2	< 5	< 3	< 5	< 2	< 4	< 9	< 2	< 3	< 20	< 7
SW-2	01/16/11	< 2	< 2	< 5	< 2	< 5	< 3	< 5	< 8	< 2	< 3	< 17	< 5
SW-2	01/17/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 10	< 3	< 3	< 22	< 6
SW-2	01/18/11	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 11	< 2	< 2	< 22	< 6
SW-2	01/19/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 3	< 3	< 25	< 6
SW-2	01/20/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 13	< 3	< 3	< 25	< 7
SW-2	01/21/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 3	< 3	< 22	< 6
SW-2	01/22/11	< 3	< 3	< 8	< 4	< 7	< 4	< 6	< 12	< 3	< 3	< 26	< 8
SW-2	01/23/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 10	< 3	< 3	< 22	< 6
SW-2	01/24/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 8	< 2	< 3	< 18	< 7
SW-2	01/25/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 6	< 2	< 2	< 14	< 5
SW-2	01/26/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 6	< 2	< 2	< 15	< 4
SW-2	01/27/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 3	< 3	< 27	< 6
SW-2	01/28/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 12	< 3	< 3	< 23	< 7
SW-2	01/29/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 21	< 6
SW-2	01/30/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 13	< 3	< 3	< 26	< 8
SW-2	01/31/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 11	< 3	< 3	< 24	< 7
SW-2	02/01/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 20	< 6

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

B-36

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	02/02/11	< 3	< 3	< 7	< 3	< 7	< 3	< 5	< 10	< 3	< 3	< 24	< 5
SW-2	02/03/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 8	< 2	< 2	< 18	< 6
SW-2	02/04/11	< 3	< 2	< 7	< 3	< 5	< 3	< 5	< 7	< 3	< 2	< 17	< 6
SW-2	02/05/11	< 3	< 2	< 5	< 2	< 5	< 3	< 5	< 7	< 2	< 3	< 17	< 4
SW-2	02/06/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 7	< 3	< 3	< 18	< 5
SW-2	02/07/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 18	< 6
SW-2	02/08/11	< 3	< 2	< 5	< 3	< 5	< 3	< 5	< 5	< 2	< 3	< 15	< 4
SW-2	02/09/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 5	< 2	< 2	< 12	< 4
SW-2	02/10/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 15	< 2	< 3	< 28	< 8
SW-2	02/11/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 21	< 5
SW-2	02/12/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 13	< 2	< 3	< 25	< 8
SW-2	02/13/11	< 2	< 2	< 5	< 3	< 5	< 2	< 4	< 11	< 2	< 2	< 20	< 6
SW-2	02/14/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 26	< 7
SW-2	02/15/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 19	< 6
SW-2	02/16/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 12	< 2	< 2	< 23	< 6
SW-2	02/17/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 13	< 2	< 2	< 22	< 7
SW-2	02/18/11	< 2	< 3	< 5	< 3	< 5	< 2	< 5	< 11	< 2	< 2	< 20	< 6
SW-2	02/19/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 11	< 2	< 3	< 24	< 7
SW-2	02/20/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 10	< 2	< 3	< 19	< 7
SW-2	02/21/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 12	< 3	< 3	< 26	< 7
SW-2	02/22/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 2	< 3	< 20	< 6
SW-2	02/23/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 8	< 2	< 2	< 16	< 4
SW-2	02/24/11	< 2	< 3	< 6	< 3	< 4	< 3	< 4	< 12	< 2	< 2	< 21	< 7
SW-2	02/25/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 10	< 2	< 2	< 21	< 6
SW-2	02/26/11	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 9	< 2	< 2	< 21	< 6
SW-2	02/27/11	< 2	< 2	< 5	< 2	< 5	< 2	< 5	< 9	< 2	< 3	< 21	< 5
SW-2	02/28/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 9	< 2	< 3	< 20	< 6
SW-2	03/01/11	< 3	< 3	< 5	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 20	< 6
SW-2	03/02/11	< 2	< 2	< 5	< 3	< 6	< 3	< 4	< 8	< 2	< 3	< 18	< 5
SW-2	03/03/11	< 3	< 3	< 7	< 3	< 7	< 3	< 5	< 15	< 3	< 3	< 28	< 8
SW-2	03/04/11	< 2	< 3	< 5	< 3	< 5	< 3	< 5	< 11	< 2	< 2	< 22	< 6
SW-2	03/05/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 2	< 3	< 22	< 6
SW-2	03/06/11	< 3	< 3	< 6	< 3	< 7	< 3	< 5	< 10	< 2	< 3	< 23	< 8
SW-2	03/07/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 10	< 3	< 3	< 22	< 7

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	03/08/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 10	< 3	< 3	< 23	< 6
SW-2	03/09/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 9	< 2	< 3	< 20	< 7
SW-2	03/10/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 21	< 2	< 2	< 30	< 7
SW-2	03/11/11	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 27	< 3	< 3	< 38	< 12
SW-2	03/12/11	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 25	< 3	< 3	< 39	< 11
SW-2	03/13/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 23	< 6
SW-2	03/14/11	< 2	< 3	< 6	< 2	< 5	< 3	< 4	< 13	< 2	< 2	< 25	< 7
SW-2	03/15/11	< 2	< 2	< 6	< 2	< 5	< 2	< 5	< 14	< 2	< 2	< 22	< 6
SW-2	03/16/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 14	< 2	< 3	< 24	< 6
SW-2	03/17/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 22	< 5
SW-2	03/18/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 2	< 3	< 23	< 7
SW-2	03/19/11	< 2	< 3	< 5	< 2	< 5	< 3	< 4	< 11	< 2	< 2	< 22	< 5
SW-2	03/20/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 22	< 7
SW-2	03/21/11	< 2	< 2	< 3	< 1	< 3	< 2	< 3	< 7	< 2	< 2	< 14	< 4
SW-2	03/22/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 8	< 2	< 2	< 15	< 4
SW-2	03/23/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 8	< 2	< 2	< 17	< 5
SW-2	03/24/11	< 3	< 4	< 10	< 4	< 8	< 5	< 8	< 38	< 4	< 4	< 53	< 15
SW-2	03/25/11	< 3	< 3	< 8	< 3	< 7	< 4	< 7	< 25	< 3	< 3	< 40	< 11
SW-2	03/26/11	< 4	< 4	< 10	< 4	< 8	< 5	< 8	< 31	< 4	< 4	< 48	< 14
SW-2	03/27/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 12	< 1	< 2	< 19	< 5
SW-2	03/28/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 21	< 8
SW-2	03/29/11	< 2	< 2	< 4	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 23	< 6
SW-2	03/30/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 27	< 8
SW-2	04/07/11	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 15	< 2	< 2	< 24	< 8
SW-2	04/08/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 7
SW-2	04/09/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 19	< 6
SW-2	04/10/11	< 2	< 2	< 5	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 25	< 7
SW-2	04/11/11	< 2	< 2	< 6	< 3	< 5	< 3	< 5	< 14	< 2	< 2	< 24	< 7
SW-2	04/12/11	< 2	< 3	< 6	< 2	< 6	< 3	< 5	< 13	< 2	< 2	< 24	< 7
SW-2	04/13/11	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 3	< 25	< 6
SW-2	04/14/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 14	< 3	< 3	< 27	< 7
SW-2	04/14/11	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 23	< 2	< 2	< 33	< 10
SW-2	04/15/11	< 2	< 3	< 6	< 3	< 5	< 4	< 6	< 27	< 3	< 3	< 40	< 13
SW-2	04/16/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 24	< 2	< 2	< 34	< 11

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

B-38

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Ce-134	Ce-137	Ba-140	La-140
SW-2	04/17/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 20	< 2	< 2	< 33	< 10
SW-2	04/18/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 19	< 2	< 2	< 31	< 9
SW-2	04/19/11	< 2	< 3	< 5	< 2	< 4	< 3	< 5	< 18	< 2	< 3	< 28	< 9
SW-2	04/20/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 20	< 3	< 3	< 34	< 11
SW-2	04/21/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 45	< 2	< 2	< 50	< 13
SW-2	04/22/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 42	< 2	< 2	< 46	< 14
SW-2	04/23/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 41	< 2	< 2	< 44	< 15
SW-2	04/24/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 42	< 2	< 2	< 48	< 13
SW-2	04/25/11	< 2	< 3	< 7	< 2	< 5	< 3	< 5	< 40	< 2	< 2	< 47	< 13
SW-2	04/26/11	< 2	< 3	< 7	< 2	< 5	< 3	< 6	< 48	< 2	< 3	< 49	< 15
SW-2	04/27/11	< 2	< 3	< 6	< 2	< 5	< 3	< 6	< 39	< 2	< 2	< 45	< 14
SW-2	04/28/11	< 3	< 2	< 6	< 3	< 6	< 3	< 5	< 10	< 2	< 3	< 21	< 7
SW-2	04/29/11	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 8	< 2	< 2	< 18	< 5
SW-2	04/30/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 7	< 2	< 2	< 16	< 5
SW-2	05/01/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 6	< 2	< 3	< 16	< 5
SW-2	05/02/11	< 2	< 3	< 5	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 16	< 5
SW-2	05/03/11	< 3	< 2	< 5	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 16	< 5
SW-2	05/04/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 5	< 2	< 2	< 14	< 5
SW-2	05/05/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 45	< 2	< 2	< 48	< 14
SW-2	05/06/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 47	< 2	< 2	< 48	< 13
SW-2	05/07/11	< 2	< 3	< 8	< 2	< 4	< 3	< 5	< 38	< 2	< 2	< 49	< 14
SW-2	05/08/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 40	< 2	< 2	< 44	< 15
SW-2	05/09/11	< 2	< 2	< 6	< 2	< 4	< 3	< 5	< 35	< 2	< 2	< 41	< 13
SW-2	05/10/11	< 2	< 3	< 7	< 2	< 5	< 3	< 5	< 38	< 2	< 3	< 44	< 12
SW-2	05/11/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 29	< 2	< 2	< 34	< 10
SW-2	05/12/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 51	< 2	< 2	< 51	< 14
SW-2	05/13/11	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 39	< 1	< 2	< 42	< 14
SW-2	05/14/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 38	< 2	< 2	< 43	< 14
SW-2	05/15/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 34	< 2	< 2	< 45	< 14
SW-2	05/16/11	< 3	< 3	< 6	< 2	< 4	< 3	< 5	< 30	< 2	< 2	< 39	< 14
SW-2	05/17/11	< 2	< 3	< 8	< 3	< 6	< 3	< 7	< 41	< 3	< 3	< 56	< 15
SW-2	05/18/11	< 2	< 3	< 8	< 2	< 5	< 3	< 5	< 48	< 1	< 2	< 43	< 15
SW-2	05/19/11	< 2	< 3	< 6	< 2	< 4	< 3	< 4	< 28	< 2	< 2	< 35	< 10
SW-2	05/20/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 28	< 2	< 2	< 39	< 13

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	05/21/11	< 2	< 2	< 6	< 2	< 5	< 3	< 5	< 28	< 2	< 2	< 38	< 10
SW-2	05/22/11	< 2	< 3	< 5	< 3	< 5	< 3	< 5	< 31	< 2	< 3	< 38	< 14
SW-2	05/23/11	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 22	< 2	< 3	< 35	< 12
SW-2	05/24/11	< 3	< 3	< 6	< 2	< 5	< 3	< 6	< 28	< 3	< 3	< 44	< 11
SW-2	05/25/11	< 3	< 4	< 7	< 3	< 7	< 4	< 6	< 29	< 3	< 3	< 48	< 12
SW-2	05/26/11	< 2	< 3	< 7	< 3	< 6	< 3	< 5	< 33	< 2	< 3	< 44	< 13
SW-2	05/27/11	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 27	< 2	< 2	< 36	< 9
SW-2	05/28/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 32	< 2	< 2	< 45	< 14
SW-2	05/29/11	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 40	< 3	< 3	< 50	< 13
SW-2	05/30/11	< 3	< 4	< 9	< 3	< 8	< 4	< 8	< 40	< 3	< 3	< 55	< 13
SW-2	05/31/11	< 2	< 3	< 7	< 3	< 6	< 4	< 6	< 31	< 3	< 3	< 44	< 14
SW-2	06/01/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 34	< 3	< 3	< 50	< 14
SW-2	06/02/11	< 4	< 4	< 9	< 4	< 6	< 3	< 6	< 29	< 3	< 3	< 46	< 12
SW-2	06/03/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 34	< 2	< 2	< 42	< 14
SW-2	06/04/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 19	< 1	< 1	< 22	< 7
SW-2	06/05/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 35	< 2	< 2	< 44	< 13
SW-2	06/06/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 25	< 1	< 2	< 30	< 9
SW-2	06/07/11	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 25	< 2	< 2	< 32	< 8
SW-2	06/08/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 24	< 2	< 2	< 33	< 9
SW-2	06/09/11	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 30	< 2	< 1	< 37	< 11
SW-2	06/10/11	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 33	< 2	< 2	< 40	< 13
SW-2	06/11/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 42	< 2	< 2	< 47	< 15
SW-2	06/12/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 30	< 2	< 2	< 38	< 12
SW-2	06/13/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 31	< 2	< 2	< 42	< 11
SW-2	06/14/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 27	< 2	< 2	< 33	< 10
SW-2	06/15/11	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 19	< 1	< 1	< 26	< 6
SW-2	06/16/11	< 2	< 2	< 6	< 2	< 4	< 2	< 5	< 27	< 2	< 2	< 33	< 11
SW-2	06/17/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 18	< 1	< 1	< 25	< 7
SW-2	06/18/11	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 20	< 2	< 2	< 27	< 7
SW-2	06/19/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 1	< 20	< 5
SW-2	06/20/11	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 18	< 5
SW-2	06/21/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 20	< 2	< 2	< 26	< 10
SW-2	06/22/11	< 2	< 2	< 7	< 2	< 4	< 3	< 5	< 54	< 2	< 2	< 53	< 11
SW-2	06/23/11	< 2	< 3	< 6	< 2	< 4	< 3	< 6	< 64	< 2	< 2	< 56	< 13

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

B-40

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	06/24/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 49	< 2	< 2	< 56	< 14
SW-2	06/25/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 50	< 2	< 2	< 55	< 14
SW-2	06/26/11	< 2	< 3	< 7	< 2	< 4	< 3	< 5	< 50	< 2	< 2	< 54	< 13
SW-2	06/27/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 47	< 2	< 2	< 48	< 14
SW-2	06/28/11	< 2	< 2	< 5	< 2	< 3	< 3	< 4	< 38	< 2	< 2	< 39	< 13
SW-2	06/29/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 43	< 2	< 2	< 48	< 14
SW-2	06/30/11	< 3	< 3	< 7	< 2	< 6	< 3	< 6	< 42	< 2	< 2	< 47	< 15
SW-2	07/01/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 14	< 2	< 2	< 21	< 7
SW-2	07/02/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 26	< 7
SW-2	07/03/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 24	< 6
SW-2	07/04/11	< 2	< 2	< 5	< 3	< 5	< 3	< 5	< 13	< 2	< 2	< 19	< 7
SW-2	07/05/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 27	< 7
SW-2	07/06/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 3	< 3	< 26	< 7
SW-2	07/07/11	< 2	< 2	< 5	< 3	< 5	< 3	< 4	< 9	< 2	< 3	< 20	< 6
SW-2	07/08/11	< 3	< 3	< 7	< 4	< 6	< 3	< 6	< 12	< 3	< 3	< 23	< 8
SW-2	07/09/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 11	< 3	< 4	< 25	< 7
SW-2	07/10/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 20	< 6
SW-2	07/11/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 20	< 6
SW-2	07/12/11	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 9	< 3	< 4	< 21	< 6
SW-2	07/13/11	< 4	< 4	< 8	< 4	< 8	< 4	< 8	< 10	< 4	< 4	< 24	< 8
SW-2	07/14/11	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 10	< 3	< 3	< 21	< 7
SW-2	07/15/11	< 5	< 6	< 13	< 6	< 11	< 6	< 11	< 15	< 5	< 6	< 35	< 12
SW-2	07/16/11	< 3	< 4	< 8	< 4	< 8	< 4	< 7	< 10	< 4	< 4	< 23	< 6
SW-2	07/17/11	< 4	< 4	< 9	< 4	< 9	< 4	< 8	< 10	< 4	< 4	< 26	< 8
SW-2	07/18/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 9	< 4	< 4	< 23	< 7
SW-2	07/19/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 8	< 4	< 4	< 22	< 6
SW-2	07/20/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 6	< 3	< 3	< 15	< 5
SW-2	07/21/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 10	< 2	< 3	< 20	< 6
SW-2	07/22/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 11	< 3	< 3	< 24	< 7
SW-2	07/23/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 12	< 3	< 4	< 25	< 8
SW-2	07/24/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 6	< 2	< 2	< 12	< 14
SW-2	07/25/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 21	< 6
SW-2	07/26/11	< 3	< 4	< 7	< 4	< 7	< 4	< 6	< 8	< 3	< 3	< 21	< 7
SW-2	07/27/11	< 3	< 3	< 8	< 3	< 7	< 4	< 6	< 8	< 3	< 4	< 19	< 6

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	07/28/11	< 4	< 5	< 10	< 5	< 9	< 5	< 8	< 12	< 4	< 5	< 30	< 8
SW-2	07/29/11	< 3	< 3	< 8	< 4	< 7	< 4	< 6	< 9	< 3	< 4	< 21	< 6
SW-2	07/30/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 9	< 4	< 4	< 25	< 8
SW-2	07/31/11	< 4	< 4	< 9	< 5	< 8	< 4	< 8	< 8	< 4	< 4	< 22	< 7
SW-2	08/01/11	< 4	< 5	< 9	< 5	< 10	< 5	< 8	< 9	< 4	< 5	< 23	< 7
SW-2	08/02/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 7	< 4	< 4	< 20	< 6
SW-2	08/03/11	< 4	< 5	< 9	< 4	< 10	< 5	< 8	< 7	< 4	< 5	< 21	< 6
SW-2	08/04/11	< 3	< 3	< 8	< 3	< 8	< 3	< 5	< 13	< 3	< 3	< 26	< 9
SW-2	08/05/11	< 3	< 3	< 8	< 3	< 5	< 3	< 5	< 11	< 3	< 3	< 22	< 6
SW-2	08/06/11	< 3	< 3	< 8	< 3	< 5	< 3	< 5	< 10	< 2	< 3	< 23	< 6
SW-2	08/07/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 14	< 4	< 5	< 31	< 9
SW-2	08/08/11	< 4	< 3	< 8	< 3	< 7	< 4	< 7	< 12	< 3	< 3	< 26	< 9
SW-2	08/18/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 11	< 4	< 4	< 26	< 9
SW-2	08/19/11	< 4	< 3	< 8	< 4	< 8	< 4	< 6	< 10	< 3	< 4	< 23	< 7
SW-2	08/20/11	< 4	< 5	< 11	< 5	< 10	< 5	< 9	< 12	< 4	< 5	< 30	< 10
SW-2	08/21/11	< 4	< 4	< 8	< 4	< 8	< 5	< 7	< 10	< 4	< 4	< 26	< 7
SW-2	08/22/11	< 5	< 5	< 10	< 5	< 10	< 6	< 9	< 11	< 5	< 5	< 30	< 9
SW-2	08/23/11	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 8	< 4	< 4	< 21	< 7
SW-2	08/24/11	< 4	< 4	< 9	< 4	< 9	< 4	< 7	< 12	< 4	< 4	< 27	< 9
SW-2	08/25/11	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 5
SW-2	08/26/11	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 12	< 1	< 1	< 19	< 5
SW-2	08/27/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 25	< 7
SW-2	08/31/11	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 7	< 1	< 1	< 14	< 5
SW-2	09/01/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 12	< 2	< 2	< 22	< 7
SW-2	09/02/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 15	< 3	< 3	< 28	< 7
SW-2	09/03/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 2	< 3	< 23	< 7
SW-2	09/04/11	< 2	< 2	< 5	< 2	< 6	< 3	< 4	< 10	< 2	< 3	< 21	< 6
SW-2	09/05/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 8	< 2	< 2	< 15	< 5
SW-2	09/06/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 15	< 4	< 4	< 31	< 9
SW-2	09/07/11	< 4	< 4	< 10	< 4	< 9	< 5	< 7	< 13	< 4	< 4	< 30	< 11
SW-2	09/08/11	< 2	< 2	< 6	< 3	< 5	< 3	< 5	< 8	< 2	< 3	< 17	< 6
SW-2	09/13/11	< 3	< 3	< 6	< 3	< 4	< 3	< 5	< 5	< 2	< 3	< 15	< 4
SW-2	09/14/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 1	< 2	< 22	< 7
SW-2	09/15/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 12	< 2	< 2	< 23	< 7

BOLD VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	09/16/11	< 2	< 2	< 4	< 1	< 4	< 2	< 3	< 12	< 1	< 2	< 23	< 5
SW-2	09/17/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 21	< 5
SW-2	09/21/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 14	< 2	< 3	< 25	< 6
SW-2	09/22/11	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 12	< 2	< 3	< 23	< 7
SW-2	09/23/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 14	< 3	< 3	< 25	< 6
SW-2	09/24/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 12	< 3	< 3	< 28	< 7
SW-2	09/25/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 14	< 3	< 4	< 30	< 9
SW-2	09/26/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 13	< 3	< 3	< 27	< 7
SW-2	09/27/11	< 4	< 4	< 10	< 4	< 9	< 5	< 8	< 14	< 4	< 4	< 30	< 12
SW-2	09/28/11	< 4	< 5	< 11	< 4	< 10	< 5	< 9	< 14	< 4	< 4	< 30	< 10
SW-2	09/29/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 3	< 23	< 8
SW-2	09/30/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 11	< 2	< 2	< 20	< 6
SW-2	10/01/11	< 3	< 3	< 6	< 3	< 5	< 3	< 4	< 9	< 2	< 2	< 20	< 7
SW-2	10/02/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 8	< 2	< 2	< 18	< 5
SW-2	10/03/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 13	< 3	< 3	< 25	< 7
SW-2	10/04/11	< 4	< 3	< 8	< 3	< 7	< 4	< 7	< 14	< 3	< 4	< 28	< 8
SW-2	10/05/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 14	< 4	< 4	< 30	< 7
SW-2	10/06/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 10	< 2	< 2	< 18	< 6
SW-2	10/07/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 19	< 6
SW-2	10/08/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 10	< 2	< 3	< 20	< 6
SW-2	10/09/11	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 9	< 2	< 2	< 20	< 6
SW-2	10/10/11	< 3	< 4	< 7	< 3	< 7	< 4	< 6	< 13	< 3	< 3	< 28	< 9
SW-2	10/11/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 15	< 4	< 4	< 30	< 9
SW-2	10/12/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 11	< 2	< 2	< 20	< 6
SW-2	10/14/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 12	< 2	< 2	< 19	< 7
SW-2	10/15/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 11	< 2	< 2	< 22	< 7
SW-2	10/16/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 20	< 6
SW-2	10/17/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 5
SW-2	10/18/11	< 3	< 3	< 8	< 3	< 7	< 4	< 6	< 14	< 3	< 3	< 27	< 9
SW-2	10/19/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 17	< 5
SW-2	10/20/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 7	< 2	< 2	< 14	< 4
SW-2	10/21/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 8	< 2	< 2	< 17	< 5
SW-2	10/22/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 10	< 3	< 3	< 21	< 7
SW-2	10/23/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 6	< 2	< 2	< 14	< 5

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

B-43

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	10/24/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 9	< 3	< 3	< 21	< 6
SW-2	10/25/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 6	< 2	< 3	< 15	< 5
SW-2	10/26/11	< 4	< 4	< 9	< 5	< 8	< 5	< 9	< 12	< 4	< 5	< 26	< 9
SW-2	10/27/11	< 2	< 2	< 6	< 2	< 5	< 3	< 5	< 14	< 2	< 2	< 22	< 7
SW-2	10/28/11	< 2	< 2	< 6	< 3	< 4	< 3	< 5	< 14	< 2	< 3	< 24	< 5
SW-2	10/29/11	< 2	< 2	< 5	< 3	< 4	< 2	< 3	< 10	< 2	< 2	< 19	< 6
SW-2	10/30/11	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 2	< 3	< 25	< 7
SW-2	10/31/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 16	< 5
SW-2	11/01/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 9	< 2	< 2	< 17	< 5
SW-2	11/02/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 7	< 2	< 2	< 13	< 4
SW-2	11/03/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 6	< 2	< 2	< 14	< 5
SW-2	11/04/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 7	< 2	< 2	< 16	< 5
SW-2	11/05/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 6	< 2	< 2	< 14	< 4
SW-2	11/06/11	< 2	< 2	< 3	< 2	< 3	< 2	< 3	< 5	< 1	< 2	< 10	< 4
SW-2	11/07/11	< 2	< 2	< 4	< 3	< 4	< 2	< 4	< 6	< 2	< 2	< 14	< 5
SW-2	11/08/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 5	< 2	< 2	< 11	< 3
SW-2	11/09/11	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 7	< 2	< 3	< 17	< 5
SW-2	11/10/11	< 3	< 3	< 7	< 3	< 5	< 3	< 6	< 14	< 3	< 3	< 26	< 7
SW-2	11/11/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 13	< 3	< 3	< 26	< 8
SW-2	11/12/11	< 3	< 3	< 6	< 2	< 6	< 3	< 5	< 12	< 3	< 3	< 23	< 5
SW-2	11/13/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 11	< 3	< 3	< 25	< 7
SW-2	11/14/11	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 13	< 4	< 4	< 28	< 9
SW-2	11/15/11	< 4	< 5	< 10	< 5	< 9	< 5	< 9	< 15	< 4	< 5	< 31	< 11
SW-2	11/16/11	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 12	< 4	< 4	< 27	< 10
SW-2	11/17/11	< 3	< 4	< 7	< 3	< 5	< 4	< 5	< 32	< 3	< 3	< 46	< 14
SW-2	11/18/11	< 3	< 4	< 8	< 3	< 6	< 3	< 6	< 27	< 3	< 3	< 44	< 15
SW-2	11/19/11	< 3	< 3	< 6	< 3	< 5	< 3	< 6	< 25	< 3	< 3	< 36	< 12
SW-2	11/20/11	< 3	< 4	< 8	< 3	< 6	< 4	< 7	< 31	< 2	< 3	< 44	< 15
SW-2	11/21/11	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 31	< 2	< 3	< 42	< 13
SW-2	11/22/11	< 1	< 2	< 4	< 1	< 2	< 2	< 3	< 14	< 1	< 1	< 21	< 6
SW-2	11/23/11	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 15	< 2	< 2	< 22	< 6
SW-2	11/24/11	< 2	< 2	< 3	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 22	< 6
SW-2	11/25/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 21	< 7
SW-2	11/26/11	< 2	< 2	< 3	< 2	< 4	< 2	< 3	< 15	< 2	< 2	< 25	< 7

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

**CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE
RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011**

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	11/27/11	< 2	< 2	< 5	< 2	< 4	< 2	< 3	< 12	< 2	< 2	< 19	< 6
SW-2	11/28/11	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 14	< 2	< 2	< 23	< 6
SW-2	11/29/11	< 3	< 2	< 6	< 2	< 5	< 3	< 4	< 13	< 2	< 2	< 24	< 7
SW-2	11/30/11	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 13	< 2	< 3	< 25	< 8
SW-2	12/01/11	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 20	< 6
SW-2	12/02/11	< 3	< 4	< 8	< 4	< 8	< 4	< 8	< 10	< 3	< 3	< 24	< 8
SW-2	12/03/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 6	< 2	< 2	< 15	< 5
SW-2	12/04/11	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 10	< 4	< 4	< 26	< 8
SW-2	12/05/11	< 3	< 3	< 7	< 4	< 7	< 3	< 6	< 8	< 3	< 3	< 21	< 7
SW-2	12/06/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 9	< 4	< 4	< 22	< 7
SW-2	12/07/11	< 2	< 3	< 5	< 3	< 5	< 3	< 4	< 6	< 2	< 2	< 15	< 5
SW-2	12/08/11	< 4	< 4	< 8	< 4	< 7	< 4	< 7	< 11	< 3	< 4	< 26	< 8
SW-2	12/09/11	< 4	< 4	< 9	< 4	< 9	< 5	< 7	< 12	< 4	< 5	< 29	< 8
SW-2	12/10/11	< 5	< 5	< 11	< 5	< 10	< 5	< 9	< 14	< 4	< 5	< 30	< 11
SW-2	12/11/11	< 5	< 5	< 11	< 6	< 11	< 5	< 9	< 12	< 4	< 5	< 30	< 10
SW-2	12/12/11	< 4	< 4	< 9	< 4	< 7	< 4	< 7	< 9	< 3	< 4	< 22	< 7
SW-2	12/13/11	< 5	< 5	< 11	< 5	< 9	< 5	< 8	< 11	< 4	< 5	< 26	< 8
SW-2	12/14/11	< 4	< 4	< 7	< 4	< 8	< 4	< 7	< 9	< 4	< 4	< 21	< 7
SW-2	12/15/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 6	< 3	< 3	< 16	< 6
SW-2	12/16/11	< 2	< 3	< 6	< 3	< 4	< 3	< 5	< 10	< 2	< 3	< 22	< 8
SW-2	12/17/11	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 12	< 3	< 3	< 26	< 8
SW-2	12/18/11	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 10	< 2	< 3	< 23	< 6
SW-2	12/19/11	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 11	< 3	< 3	< 22	< 5
SW-2	12/20/11	< 3	< 3	< 6	< 2	< 5	< 2	< 5	< 8	< 2	< 3	< 17	< 5
SW-2	12/21/11	< 2	< 3	< 6	< 3	< 5	< 3	< 4	< 9	< 2	< 3	< 19	< 5
SW-2	12/22/11	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 8	< 2	< 3	< 19	< 6
SW-2	12/23/11	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 9	< 3	< 3	< 21	< 7
SW-2	12/24/11	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 5	< 1	< 2	< 11	< 3
SW-2	12/25/11	< 2	< 2	< 4	< 3	< 4	< 2	< 3	< 5	< 2	< 2	< 13	< 3
SW-2	12/26/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 5	< 2	< 2	< 12	< 3
SW-2	12/27/11	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 4	< 2	< 2	< 11	< 4
SW-2	12/28/11	< 4	< 4	< 10	< 5	< 8	< 5	< 8	< 15	< 4	< 4	< 31	< 10
SW-2	12/29/11	< 2	< 2	< 5	< 3	< 4	< 2	< 4	< 5	< 2	< 2	< 13	< 4
SW-2	12/30/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 15	< 2	< 2	< 25	< 7

BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.2

CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-2	12/31/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 23	< 7
SW-3	04/14/11	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 6
SW-3	04/14/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 15	< 3	< 3	< 29	< 8

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BOLDED VALUES INDICATE LLD WAS NOT MET - EXPLAINED IN IV.A.3

TABLE B-II.3 CONCENTRATIONS OF "HARD-TO-DETECTS" IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PC/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	AM-241	CM-242	CM-243/244	PU-238	PU-239/240	U-234	U-235	U-238	FE-55	NI-63
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NONE FOR 2011

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TABLE B-III.1 CONCENTRATIONS OF TRITIUM IN PRECIPITATION WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, OYSTER CREEK GENERATING STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
1	03/16/11	< 198
2	03/16/11	< 199
2	04/14/11	< 170
2	07/14/11	< 171
2	10/27/11	< 194
3	03/16/11	< 197
3	04/14/11	< 189
3	07/14/11	< 171
3	10/27/11	< 192
4	03/16/11	< 175
4	04/14/11	< 172
4	07/14/11	< 171
4	10/27/11	< 192
5	03/16/11	< 198
6	03/16/11	< 177
6	04/14/11	< 189
6	07/14/11	< 171
6	10/27/11	< 189