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

THREE MILE ISLAND NUCLEAR STATION UNITS 1 AND 2
OPERATING LICENSE NO. DPR-50 AND POSSESSION ONLY LICENSE NO. DPR-73
DOCKET NOS. 50-289 AND 50-320

SUBJECT: 2006 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORT

In accordance with TMI-1 Technical Specification 6.9.3.1 and TMI-2 Technical Specification 6.8.1.1, enclosed is the Annual Radiological Environmental Operating Report covering the time-period of January 1 through December 31, 2006, for the Three Mile Island Nuclear Station.

Please note the map, Figure A-1 in Appendix F contains sensitive information related to security, and it needs to be stripped from the REMP package prior to posting as a public document.

Please contact Laura Weber of TMI-1 Chemistry at (717) 948-8947 if you have any questions regarding this submittal.

Sincerely,

Thomas J. Dougherty
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TJD/awm

Enclosure

cc: Region I Administrator
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File 07027

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THREE MILE ISLAND NUCLEAR STATION
UNITS 1 and 2

Annual Radiological
Environmental Operating Report

1 January Through 31 December 2006

Prepared By

Teledyne Brown Engineering
Environmental Services

AmerGen℠
An Exelon Company

Three Mile Island Nuclear Station
Middletown, PA 17057

April 2007

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Three Mile Island Nuclear Station (TMINS) by AmerGen covers the period 1 January 2006 through 31 December 2006. During that time period, 1,743 analyses were performed on 1346 samples. In assessing all the data gathered for this report and comparing these results with preoperational data and operational REMP data, it was concluded that the operation of TMINS had no adverse radiological impact on the environment.

Surface, drinking, effluent, storm, and ground water samples were analyzed for concentrations of tritium and gamma emitting nuclides. Surface, drinking, and effluent water samples were also analyzed for concentrations of I-131. Drinking and effluent water samples were also analyzed for concentrations of gross beta. Effluent water samples were also analyzed for concentrations of Sr-89 and Sr-90. Ground water samples were also analyzed for concentrations of Sr-90. No Sr-89 and Sr-90 activities were detected. Gross beta and I-131 concentrations detected were consistent with those detected in previous years. Tritium results in groundwater and several monthly results in surface, drinking and effluent water samples were due to TMINS activities or releases. The calculated dose due to the drinking water samples was <0.004 mrem. This dose is a small fraction of the 10 CFR 20 Appendix I dose limits. Iodine-131 detected in effluent water was from upstream medical users. No other fission or activation products potentially attributed to TMI release were detected.

Fish (predator and bottom feeder) and sediment samples were analyzed for concentrations of gamma emitting nuclides. Fish samples were also analyzed for concentrations of Sr-89 and Sr-90. No Sr-89 and Sr-90 activity was detected. No fission or activation products were detected in fish or sediment samples.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. Cosmogenic Be-7 was detected at levels consistent with those detected in previous years. No fission or activation products were detected.

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

Cow milk samples were analyzed for concentrations of I-131, gamma emitting nuclides, Sr-89 and Sr-90. No I-131 and Sr-89 activities were detected. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. Sr-90 activities detected were consistent with those detected in previous years and were attributed to fallout from nuclear weapons testing. No other fission or activation products were found.

Food Product samples were analyzed for concentrations of gamma emitting nuclides (including I-131) and Sr-90. No Sr-90 activity was detected in food products. One weed leaf sample had low levels of Sr-90. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. No fission or activation products were detected.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. Levels detected were consistent with those observed in previous years.

In conclusion, radioactive materials related to TMINS operations were detected in environmental samples, but the measured concentrations were low and consistent with measured effluents. The environmental sample results verified that the doses received by the public from TMINS effluents in 2006 were well below applicable dose limits and only a small fraction of the doses received from natural background radiation. Additionally, the results indicated that there was no permanent buildup of radioactive materials in the environment and no increase in background radiation levels.

Therefore, based on the results of the radiological environmental monitoring program (REMP) and the doses calculated from measured effluents, TMINS operations in 2006 did not have any adverse effects on the health of the public or on the environment.

II. Introduction

The Three Mile Island Nuclear Station (TMINS), consisting of two pressurized water reactors (PWR), is located on the northern one-half of Three Mile Island in the Susquehanna River approximately 2.5 miles south of Middletown in Londonderry Township, Dauphin County, Pennsylvania. TMI-1 is owned and operated by AmerGen and became operational in 1974. TMI-2 is operated by GPU Nuclear, Inc. and owned by Metropolitan Edison (50%), Pennsylvania Electric (25%) and Jersey Central Power & Light (25%). TMI-2 became operational in 1978 and was shut down following the 1979 accident. At the end of 1993, TMI-2 was placed in a condition called Post-Defueling Monitored Storage. TMI-2 is maintained by Amergen under contract with GPU Nuclear.

A Radiological Environmental Monitoring Program (REMP) for TMINS was initiated in 1974. This report covers those analyses performed by Teledyne Brown Engineering (TBE), Global Dosimetry Solutions, Inc., and Environmental Inc. (Midwest Labs) on samples collected during the period 1 January 2006 through 31 December 2006.

A. Objective of the REMP

The objectives of the REMP are to:

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

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

3. To verify inplant controls for the containment of radioactive materials.

4. To determine buildup of long-lived radionuclides in the environment and changes in background radiation levels.

5. To provide reassurance to the public that the program is capable of adequately assessing impacts and identifying noteworthy changes in the radiological status of the environment.

6. To fulfill the requirements of the TMI-1 and TMI-2 Technical Specifications.

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.

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

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

III. Program Description

A. Sample Collection

Samples for the TMINS REMP were collected for AmerGen by Normandeau Associates, RMC Environmental Services Division (RMC). This section describes the general collection methods used by RMC to obtain environmental samples for the TMINS REMP in 2006. Sample locations and descriptions can be found in Tables B–1 and B–2, and Figures B–1 through B–3, Appendix B. The collection procedures used by RMC are listed in Table B–3.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, drinking water, effluent water, storm water, ground water, fish, and sediment. Two gallon water samples were collected monthly from continuous samplers located at three surface water locations (A3-2, J1-2 and Q9-1), three drinking water locations (G15-2, G15-3 and Q9-1), and one effluent water location (K1-1). Control locations were A3-2 and Q9-1. Monthly grab water samples were taken from one storm water runoff location (EDCB). Grab ground water samples were collected quarterly at eight locations (48S, GP-1, GP-6, GP-8, GP-9, MS-22, OSF and OS-18), semiannually at 12 locations (GP-12, MS-2, MS-5, MS-8, MS-20, NW-A, NW-B, NW-C, NW-CW, OS-14, RW-1 and RW-2) and annually at seven locations (E1-2, MS-1, MS-4, MS-7, MS-19, MS-21 and N2-1). In response to a special investigation, selected wells were sampled more frequently. All water samples were collected in either new amber glass or unused plastic bottles, which were rinsed at least twice with source water prior to collection. Fish samples comprising the flesh of two groups, bottom feeders and predators, were collected semiannually at

an upstream control (BKG) and a downstream Indicator (IND) location. Location IND could be affected by TMINS' effluent releases. Sediment samples composed of recently deposited substrate were collected semiannually at three locations (J2-1, K1-3 and A1-3). In addition, one sediment sample was collected annually at the EDCB. Location A1-3 was the control.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulates, airborne iodine, milk, and food product. Airborne iodine and particulate samples were collected and analyzed weekly at seven locations (A3-1, E1-2, F1-3, G2-1, H3-1, M2-1, and Q15-1). The control location was Q15-1. 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.

Milk samples were collected biweekly at four locations (K15-3, D2-1, E2-2, and G2-1) from March through November, and monthly from December through February. Milk was also collected at station F4-1 quarterly (March, June, September, and December). The control location was K15-3. All samples were collected in new unused two gallon plastic bottles from the bulk tank at each location, preserved with sodium bisulfite, and shipped promptly to the laboratory.

Food products were collected annually at two locations (B10-2 and E1-2). The control location was B10-2. Four different kinds of vegetation samples were collected and placed in new unused plastic bags, and sent to the laboratory for analysis.

Ambient Gamma Radiation

Direct radiation measurements were made using Panasonic 814 calcium sulfate ($CaSO_4$) thermoluminescent dosimeters (TLD). The TLD locations were placed on and around the TMINS site as follows:

A site boundary ring consisting of 21 locations (A1-4, B1-1, B1-2, C1-2, D1-1, E1-4, F1-2, F1-4, G1-3, G1-5, G1-6, H1-1, J1-1, J1-3, K1-4, L1-1, M1-1, N1-3, P1-2, Q1-2, and R1-1) near and within the site perimeter representing fence post doses (i.e., at locations where the doses will be potentially greater than maximum annual off–site doses) from TMINS release.

An offsite ring consisting of 58 locations (A3-1, A5-1, A9-3, B2-1, B5-1, B10-1, C1-1, C2-1, C5-1, C8-1, D1-2, D2-2, D6-1, E1-2, E2-3, E5-1, E7-1, F1-1, F2-1, F5-1, F10-1, G1-2, G2-4, G5-1, H3-1, H5-1, H8-1, J3-1, J5-1, J7-1 K2-1, K3-1, K5-1, K8-1, L1-2, L2-1, L5-1, L8-1, M1-2, M2-1, M5-1, M9-1, N1-1, N2-1, N5-1, N8-1, P1-1, P2-1, P5-1, P8-1, Q1-1, Q2-1, Q5-1, Q9-1, R1-2, R3-1, R5-1, and R9-1) extending to approximately 5 miles from the site designed to measure possible exposures to close-in population.

The balance of 11 locations (D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1) represent control areas.

The specific TLD locations were determined by the following criteria:

1. The presence of relatively dense population;

2. Site meteorological data taking into account distance and elevation for each of the sixteen–22 1/2 degree sectors around the site, where estimated annual dose from TMINS, if any, would be most significant;

3. On hills free from local obstructions and within sight of the vents (where practical);

4. And near the closest dwelling to the vents in the prevailing downwind direction.

Each TLD station consists of two primary program TLD badges, each of which has three $CaSO_4$ thermoluminescent phosphors enclosed in plastic, placed at each location in a frame located approximately three to six feet above ground level. Since each TLD responds to radiation independently, this provides six independent detectors at each station. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis.

B. Sample Analysis

This section describes the general analytical methods used by TBE and Midwest Labs to analyze the environmental samples for radioactivity for the TMINS REMP in 2006. 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 drinking and effluent water, and air particulates.

2. Concentrations of gamma emitters in surface, drinking, effluent, storm, and ground water, air particulates, milk, fish, sediment, and food products.

3. Concentrations of tritium in surface, drinking, effluent, storm, and ground water.

4. Concentrations of I-131 in surface, drinking, and effluent water, air, milk and food products.

5. Concentrations of strontium in effluent and ground water, fish, milk, and food products.

6. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

Data were compared to previous years' operational data for consistency and trending. In addition, comparison to pre-operational data is sometimes made. For the purpose of this report, TMINS 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) was defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD was intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criteria for the presence of activity. All analyses were designed to achieve the required TMINS detection capabilities for environmental sample analysis.

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

2. Net Activity Calculation and Reporting of Results

Net activity for a sample was calculated by subtracting background

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

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

For surface, drinking, effluent, storm, and ground water 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, 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 sediment six nuclides, 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 milk five nuclides, K-40, Cs-134, Cs-137, Ba-140 and La-140 were reported.

For food products four nuclides, K-40, I-131, Cs-134 and Cs-137 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 2006 the TMINS REMP had a sample recovery rate in excess of 99%. Exceptions are listed below:

<u>WATER</u>

1. Q9-1 drinking water samples - During eight weekly sampling periods the sampler was found with a pump jammed error, sample flow interupted or other malfunction. For four of these sample periods, insufficient composite sample was collected and a grab sample had to be taken to make up the required volume. The impacted sample periods are as follows:

01/31/2006 – 02/07/2006, Grab sample required
04/04/2006 – 04/12/2006, Grab sample required
05/16/2006 – 05/23/2006, Grab sample required
05/30/2006 – 06/06/2006, Grab sample required
06/19/2006 – 06/26/2006, No grab sample required; sampler was replaced and powered from a different outlet.
08/01/2006 – 08/08/2006, No grab sample required
10/03/2006 – 10/10/2006, No grab sample required
11/14/2006 – 11/22/2006, No grab sample required

2. Q9-1 surface water samples – During three weekly sampling periods there were missed samples due to power interruptions, sampler malfunction and debris clogging the supply line. Sufficient sample was always available and no grab samples were required.
03/14/2006 – 03/21/2006
03/21/2006 – 03/28/2006
04/25/2006 – 05/02/2006

3. G15-3 drinking water samples – A planned maintenance power outage at the facility affected two weekly sampling periods with missed samples. No grab samples were required. Sufficient sample volume was available for the following periods:
03/21/2006 – 03/28/2006
03/28/2006 – 04/04/2006

4. J1-2 surface water samples – During fifteen weekly sampling periods there were missed hourly composite samples. At no time was a grab sample required; there was always sufficient volume. Missed samples were due to freezing conditions on the river, unknown sampler malfunction and the suction line separating from its anchor buoy.
12/27/2006 – 01/03/2006
01/10/2006 – 01/17/2006
01/24/2006 – 01/31/2006
02/07/2006 – 02/14/2006
02/14/2006 – 02/21/2006
02/28/2006 – 03/07/2006
03/07/2006 – 03/14/2006
03/14/2006 – 03/21/2006
06/26/2006 – 07/03/2006
07/03/2006 – 07/11/2006
07/18/2006 – 07/25/2006
08/22/2006 – 08/29/2006
08/29/2006 – 09/05/2006
11/28/2006 – 12/05/2006

12/05/2006 – 12/12/2006

5. A3-2 surface water samples – During six weeks hourly composite samples were missed. On 07/01/06 the sample station was flooded. The sampler had to be replaced and the entire composite sample was lost. This is an extra upstream control station used for informational purposes. The impacted sample periods are as follows:
02/14/2006 – 02/22/2006, No grab sample required
02/28/2006 – 03/07/2006, No grab sample required
05/02/2006 – 05/09/2006, No grab sample required
06/26/2006 – 07/03/2006, Sampler replaced due to flooding. Grab sample required due to short run time.
07/25/2006 – 08/01/2006, No grab sample required
10/24/2006 – 10/31/2006, No grab sample required

6. G15-2 and Q9-1 drinking water samples - The I-131 LLD of 1.0 pCi/L was missed due to the discontinuation and poor performance of two types of filter paper used in the I-131 analysis. Although sample aliquots were increased (up to 8 liters, when possible) and count times extended (up to 64 hours, in some cases), LLD requirements were missed due to low chemical yield and decay of the iodine during the investigation. TBE initiated NCR 06-13 to investigate and document this event. The following period was effected:
05/30/2006 – 06/26/2006

AIR

During periods of missed samples other sample locations were available to fulfill ODCM requirements.

6. A3-1 air particulate and air iodine samples – There were intermittent power problems due to a faulty GFI circuit breaker. There were two missed samples and nine samples with low volume. One of the low volume samples also did not meet LLD requirements from the analysis lab for the following periods:
02/08/2006 – 02/15/2006, Low volume
03/01/2006 – 03/08/2006, No sample
03/15/2006 – 03/22/2006, Low volume
03/29/2006 – 04/05/2006, Low volume
04/05/2006 – 04/12/2006, Low volume
04/19/2006 – 04/25/2006, Low volume
04/25/2006 – 05/02/2006, No sample, replaced pump
05/02/2006 – 05/10/2006, Low volume

05/10/2006 – 05/17/2006, Low volume
05/17/2006 – 05/26/2006, Low volume, GFI circuit replaced
08/23/2006 – 08/30/2006, Low volume, degraded wiring replaced

7. G2-1 air particulate and air iodine samples – During eleven weekly sample periods power interruptions and breaker trips caused lost sample time. Five samples had insufficient volume to be sent for analysis. A refurbished air sampler with new wiring and controls was installed and a separate outlet and breaker were installed for non-REMP equipment. The impacted sample periods are as follows:
04/12/2006 – 04/19/2006, No sample
06/07/2006 – 06/14/2006, Low volume
06/14/2006 – 06/21/2006, No sample
07/04/2006 – 07/12/2006, Low volume
07/12/2006 – 07/19/2006, No sample
07/19/2006 – 07/26/2006, No sample
07/26/2006 – 08/02/2006, No sample
08/02/2006 – 08/09/2006, Low volume
08/09/2006 – 08/16/2006, Low volume
08/16/2006 – 08/23/2006, Low volume
08/30/2006 – 09/06/2006, Low volume

8. M2-1 air particulate and air iodine samples – Five weekly sampling periods were impacted due to power outages and sample pump failure. Sufficient volume was achieved to send for analysis for the following periods:
01/11/2006 – 01/18/2006, Low volume, pump stopped
01/18/2006 – 01/25/2006, Low volume, pump replaced on 01/19/06
07/12/2006 – 07/19/2006, Low volume
09/06/2006 – 09/13/2006, Low volume
11/08/2006 – 12/05/2006, Low volume

9. E1-2Q air particulate and air iodine samples – This sample station had low volume when a pump nipple broke during sampling and the pump was replaced. Sufficient volume was achieved to send for analysis for the following period:
10/04/2006 – 10/11/2006

MILK

10. Milk samples - The milk I-131 LLD of 1.0 pCi/L was missed due to the discontinuation and poor performance of two types of filter paper used in the I-131 analysis. Although sample aliquots were increased (up to 8 liters, when possible) and count times extended

(up to 64 hours, in some cases), LLD requirements were missed due to low chemical yield and decay of the iodine during the investigation. TBE initiated NCR 06-13 to investigate and document this event. The following periods and locations were effected:
06/07/2006, Location E2-2
06/07/2006, Location G2-1
06/07/2006, Location K15-3
06/21/2006, Location G2-1

TLD

11. Q5-1 TLD sample – One of two TLDs were stolen/vandalized for the following period:
01/12/2006 – 04/13/2006

12. P5-1 TLD sample – All TLDs and hardware were missing after installation of a new utility pole after a vehicular accident for the following period:
07/13/2006 – 10/20/2006

FOOD

13. B10-2 and E1-2 food samples – Corn leaves were collected instead of cabbage for the broad leaf vegetable. The cabbage at the visitor center had drowned and Red Hill farm had sold all locally grown cabbage for the following period:
08/10/2006

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

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

E. Program Changes

There were no changes to the program in 2006.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken weekly from a continuous sampler at three locations (A3-2, J1-2, and Q9-1) and composited on a monthly schedule. Of these locations only J1-2 located downstream, could be affected by TMINS' effluent releases. The following analyses were performed.

Tritium

Monthly samples from J1-2 and Q9-1 were analyzed for tritium activity (Table C–I.1, Appendix C). Positive tritium activity was detected in nine of 24 samples, primarily at location J1-2 which is located immediately downstream of the TMINS effluent outfall. All samples ranged from <133 to 9,830 pCi/l. The increased tritium concentrations detected were a result of TMINS releasing radwaste treatment system effluent water under permitted discharges in accordance with NRC regulations. The indicator surface water sample is taken just downstream of the liquid discharge outfall where mixing of liquid effluents with the river water is incomplete. More complete mixing is not achieved until liquid effluents pass over the York Haven Dam. This water is normally not consumed by humans. The concentrations detected were well below any regulatory limits. (Figures C–1 and C–2, Appendix C).

Iodine

Monthly samples from location A3-2 were analyzed for iodine-131 activity (Table C–I.2, Appendix C). This is a control or background station sampled because known medical discharges of radiopharmaceuticals occur into the surface water upstream of TMI from a nearby hospital. Iodine-131 activity was detected in two of 12 samples. All samples ranged from <0.4 to 1.0 pCi/l.

Gamma Spectrometry

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

2. Drinking Water

Monthly samples were collected from continuous water samplers at three locations (G15-2, G15-3, and Q9-1). Two locations (G15-2 and G15-3) could be affected by TMINS' effluent releases. The following analyses were performed:

Gross Beta

Monthly samples from all locations were analyzed for concentrations of gross beta. (Tables C–II.1, Appendix C). Gross beta activity was detected in 20 of 36 samples. The values ranged from <1.7 to 4.1 pCi/l. Concentrations detected were consistent with those detected in previous years (Figures C–3, Appendix C).

Tritium

Monthly samples from all locations were analyzed for tritium activity (Table C–II.3, Appendix C). Activity was detected in two of 36 samples. All samples ranged from <133 to 193 pCi/l. The concentrations were below the required LLD of 200 pCi/liter. Dose estimates were performed for the positive drinking water tritium results. The hypothetical dose to the maximum exposed individual from consuming this water during both time periods would have been <0.004 mrem to the liver of a child. The effluent combined projected dose for an adult for these time periods was 0.028 mrem. Given the error for tritium at these low concentrations, the effluent predictions are in good agreement with the environmental sample results. (Figures C–4, Appendix C).

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–II.4, Appendix C). All nuclides were less than the MDC.

3. Effluent Water

Monthly samples were collected from a continuous water sampler at one location (K1-1). The following analyses were performed:

Gross Beta

Monthly samples from location K1-1 were analyzed for concentrations of gross beta. (Tables C–III.1, Appendix C). Gross

beta was detected in 11 of 12 samples. The values ranged from <2.2 to 7.9 pCi/l. Concentrations detected were consistent with those detected in previous years.

Iodine-131

Monthly samples from location K1-1 were analyzed for concentrations of iodine-131. (Tables C–III.1, Appendix C). Iodine-131 activity was detected in one sample with a concentration of 0.8 pCi/l. The values ranged from <0.3 to <0.9 pCi/l. The positive result is not due to TMINS effluents. During the time period for the positive result, I-131 was also detected in the upstream control station A3-2. No I-131 was identified in any tank effluent pre-release samples, and I-131 was not detected in any other downstream surface or drinking water samples. Effluent water is not consumed by humans.

Tritium

Monthly samples from location K1-1 were analyzed for tritium activity (Table C–III.1, Appendix C). Tritium activity was detected in eight samples. The values ranged from <171 to 99,600 pCi/l. The elevated results were a result of TMI releasing radwaste treatment system effluent water under permitted discharges in accordance with NRC regulations. These results are from the liquid discharge mixing basin. The concentrations detected agree with those obtained from the TMINS Effluent Monitoring Program. The concentrations were well below any regulatory limits.

Strontium

Semiannual samples from location K1-1 were analyzed for Sr-89 and Sr-90 (Table C–III.1, Appendix C). No strontium activity was detected. The highest MDC was calculated at 5.0 pCi/l for Sr-89 and at 0.7 pCi/l for Sr-90.

Gamma Spectrometry

Samples from location K1-1 were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). All nuclides were less than the MDC.

4. Storm Water

Monthly grabs from the storm water collection basin (EDCB) were

composited quarterly. The following analyses were performed:
Tritium

All samples from location EDCB were analyzed for tritium activity (Table C–IV.1, Appendix C). Tritium activity was detected in three samples. The values ranged from <188 to 480 pCi/l and were due to airborne releases of H-3 from TMI. Concentrations detected were consistent with those detected in previous years.

Gamma Spectrometry

Samples from location EDCB were analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). All nuclides were less than the MDC.

5. Ground Water

Quarterly, semiannual and annual grab samples were collected at 27 locations (48S, GP-1, GP-6, GP-8, MS-22, OSF, OS-18, GP-9, GP-12, MS-2, MS-5, MS-20, NW-A, NW-B, NW-C, NW-CW, OS-14, RW-1, RW-2, E1-2, MS-1, MS-4, MS-7, MS-8, MS-19, MS-21 and N2-1). The following analyses were performed:

Tritium

All samples from the locations were analyzed for tritium activity (Table C–V.1, Appendix C). Tritium activity was detected in 44 of 55 samples. The values ranged from 168 to 5,280 pCi/l. In June 2006, water with tritium activity was found leaking from a manhole in TMI's North Parking Lot. The results of the investigation determined that plant related water had leaked into a telephone equipment room and flowed through conduit to the manhole. The leak developed in a 4" condensate tank underground de-ice line. Backfill material caused a flaw in the external pipe coating which caused localized corrosion and a through wall leak. The line was excavated and repaired. Offsite groundwater tritium concentrations were unaffected by this event. In addition during 2006, Exelon initiated a fleetwide Enironmental Assessment program. Comprehensive groundwater studies and reports were developed. The results from these special investigations and studies are discussed in Appendix F. As a result of this assessment and the NEI initiative on groundwater protection, TMI developed a new Radiological Groundwater Protection Program (RGPP) that was implemented by the end of the year. For 2007, this more comprehensive groundwater program will replace TMI's previous

groundwater monitoring program.

Strontium

Annual samples from six locations (48S, OSF, MS-2, MS-5, MS-8 and OS-14) were analyzed for Sr-90 (Table C–V.2, Appendix C). No Sr-90 activity was detected. The highest MDC was calculated at <0.7 pCi/l.

Gamma Spectrometry

Quarterly samples from two locations (48S and OSF) and annual composite samples from eight locations (MS-2, MS-5, MS-8, MS-20, MS-22, OS-14, RW-1 and RW-2) and annual grab samples from two locations (E1-2 and N2-1) were analyzed for gamma emitting nuclides (Table C–V.2, Appendix C). All nuclides were less than the MDC.

6. Fish

Fish samples comprised of bottom feeders and predators were collected at two locations (IND and BKG) semiannually. Location IND could be affected by TMINS' effluent releases. The following analyses were performed:

Strontium

The edible portions of fish samples from both locations were analyzed for Sr-89 and Sr-90. (Table C–VI.1, Appendix C). No strontium activity was detected. The highest MDC was calculated at <34 pCi/kg wet for Sr-89 and at <5 pCi/kg wet for Sr-90.

Gamma Spectrometry

The edible portions of fish samples from both locations were analyzed for gamma emitting nuclides (Table C–VI.2, Appendix C). Naturally occurring K-40 was found at all stations and ranged from 2,440 to 3,910 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

7. Sediment

Aquatic sediment samples were collected at three locations (A1-3, J2-1 and K1-3) semiannually. In addition, location EDCB was sampled annually. Of these locations two (J2-1 and K1-3) could be

affected by TMINS' effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from all four locations were analyzed for gamma emitting nuclides (Table C–VII.1, Appendix C). Potassium-40 was found at all stations and ranged from 12,600 to 19,800 pCi/kg dry. No TMINS fission or activation products were found.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from seven locations on a weekly basis. Six locations (E1-2, F1-3, G2-1, A3-1, M2-1 and H3-1) were indicator stations located in the highest D/Q sectors and the nearest communities to TMI. One sample (Q15-1) represents the control location at a remote distance from TMINS . The following analyses were performed:

Gross Beta

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

Detectable gross beta activity was observed at all locations. Comparison of results aid in determining the effects, if any, resulting from the operation of TMINS. The results from the closest to the site boundary locations (Group I) ranged from 7 to 29 E–3 pCi/m^3 with a mean of 17 E–3 pCi/m^3. The results from the intermediate offsite locations (Group II) ranged from <6 to 34 E–3 pCi/m^3 with a mean of 18 E–3 pCi/m^3. The results from the Control location (Group III) ranged from <6 to 34 E–3 pCi/m^3 with a mean of 18 E–3 pCi/m^3. Comparison of the 2006 air particulate data with previous years data indicate no effects from the operation of TMINS (Figure C–6, Appendix C). In addition a comparison of the weekly mean values for 2006 indicate no notable differences between indicator and control stations. (Figure C–7, Appendix C).

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–VIII.3, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in 19 of 28 samples. These values ranged from <22 to 143 E–3 pCi/m^3. All other nuclides were less than the MDC.

b. Airborne Iodine

Continuous air samples were collected from seven (A3-1, E1-2, F1-3, G2-1, H3-1, M2-1, and Q15-1) locations and analyzed weekly for I-131 (Table C–IX.1, Appendix C). All results were less than the MDC.

2. Terrestrial

a. Milk

Samples were collected from four locations (K15-3, D2-1, E2-2, and G2-1) biweekly March through November and monthly December through February. Station F4-1 was sampled quarterly. The following analyses were performed:

Iodine–131

Milk samples from all locations were analyzed for concentrations of I-131 (Table C–X.1, Appendix C). All results were less than the MDC.

Strontium

Milk samples from all locations were composited quarterly and analyzed for Sr-89 and Sr-90 (Table C–X.2, Appendix C). No Sr-89 activity was detected. Sr-90 activity was detected. The values ranged from 0.5 to 2.9 pCi/l. The activity detected was consistent with those detected in the pre–operational years (Figure C–8, Appendix C).

Gamma Spectrometry

Milk samples from all locations were analyzed for concentrations of gamma emitting nuclides (Table C–X.3, Appendix C).

Naturally occurring K-40 activity was found in all samples. The values ranged from 1070 to 1,530 pCi/l. All other nuclides were less than the MDC.

b. Food Products

Samples were collected from two locations (B10-2, E1-2, H1-2, ESE1, ESE2, and ESE3) annually. The following analyses were performed:

Strontium

Each food product sample was analyzed for concentrations of Sr-90 (Table C–XI.1, Appendix C). Sr-90 activity was detected in one weed leaf at a concentration of 5.6 pCi/kg wet.

Gamma Spectrometry

Each food product sample was analyzed for concentrations of gamma emitting nuclides (Table C–XI.1, Appendix C).

Naturally occurring K-40 activity was found in all samples. The values ranged from 2,240 to 5,060 pCi/l. All other nuclides were less than the MDC.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic 814 ($CaSO_4$) thermoluminescent dosimeters. Ninety TLD locations were established around the site. Results of TLD measurements are listed in Tables C–XII.1 to C–XII.3, Appendix C.

All TLD measurements but one were below 10 mR/standard month, with a range of 3.6 to 10.2 mR/standard month. A comparison of the Site Boundary and Intermediate Distance data to the Control Location data, indicate that the ambient gamma radiation levels from the Control Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 were consistently higher. The historical ambient gamma radiation data from Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 were plotted along with similar data from the Site, Intermediate Distance and Outer Ring Locations (Figure C–9, Appendix C). Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 have a historical high bias,

but tracked with the data from all three groups, this bias is most likely due to radon and other naturally occurring nuclides, e.g. K-40, emanating from the ground.

D. Land Use Survey

A Land Use Survey conducted in the September and October 2006 growing season around the Three Mile Island Nuclear Station (TMINS) was performed by Normandeau Associates, RMC Environmental Services Division for AmerGen to comply with Sections 2.15 and 3.4.2 of the Plant's Offsite Dose Calculation Manual (ODCM). The purpose of the survey was to document the nearest resident, milk-producing animal and garden of greater than 500 ft2 in each of the sixteen 22 ½ degree sectors around the site. There were no changes required to the TMINS REMP, as a result of this survey. The nearest residence in the West sector changed from 560 m to 1120 m based on the residence survey. The results of this survey are summarized below.

Distance in Miles from the TMINS Reactor Buildings			
Sector	Residence Miles	Garden Miles	Milk Farm Miles
1 N	1.1	1.6	2.1
2 NNE	0.7	0.9	-
3 NE	0.5	0.6	4.1
4 ENE	0.5	0.5	1.1
5 E	0.4	0.5	1.1
6 ESE	1.1	0.5	3.2
7 SE	0.7	0.5	1.4
8 SSE	0.7	0.8	-
9 S	2.3	2.4	-
10 SSW	0.6	1.6	4.9
11 SW	0.5	1.9	-
12 WSW	0.5	1.4	-
13 W	0.7	1.4	-
14 WNW	0.4	0.6	3.7
15 NW	0.4	1.3	-
16 NNW	1.1	2.4	-

E. Radiological Impact of TMINS Operations

An assessment of potential radiological impact indicated that radiation doses to the public from 2006 operations at TMINS were well below all applicable regulatory limits and were significantly less than doses received from natural sources of radiation. The 2006 whole body dose potentially received by an assumed maximum exposed individual from TMI-1 and

TMI-2 liquid and airborne effluents was conservatively calculated to be 0.025 mrem. This dose is equivalent to <0.01% of the dose that an individual living in the TMI area receives each year from natural background radiation.

1. Determination of Radiation Doses to the Public

Dose assessments can be performed by using either effluent data and an environmental transport model or environmental sample data. To the extent possible, doses to the public are based on the direct measurement of dose rates from external sources and the measurement of radionuclide concentrations in environmental media which may contribute to an internal dose of radiation. Thermoluminescent dosimeters (TLDs) positioned in the environment around TMINS provide measurements to determine external radiation doses to humans. Samples of air, water and food products are used to determine internal doses.

The quantity of radioactive materials released during normal operations are typically too small to be measured once distributed in the offsite environment. Therefore, the potential offsite doses are more effectively calculated for TMINS operations using a computerized model that predicts concentrations of radioactive materials in the environment and subsequent radiation doses based on measured effluents.

Doses are calculated using an advanced "class A" dispersion model. This model incorporates the guidelines and methodology set forth by the USNRC in Regulatory Guide 1.109. Due to the conservative assumptions that are used in the model, the calculated doses are generally higher than the doses based on actual environmental sample concentrations.

Therefore, the model predicts doses that are higher than actual doses received by people. The type and amount of radioactivity released from TMINS is calculated using measurements from effluent sample analyses. Once released, the dispersion of radionuclides in the environment is readily determined by computer modeling.

Airborne releases are diluted and carried away from the site by atmospheric diffusion which continuously acts to disperse radioactivity. Variables that affect atmospheric dispersion include wind speed, temperature at different elevations, terrain, and shift in wind direction. A weather station on the north end of TMI is linked to a

data logger that permanently records the meteorological data.

Computer models also are used to predict the downstream dilution and travel times for liquid releases into the Susquehanna River. Actual monthly Susquehanna River flows are obtained from FirstEnergy Corp. at the York Haven Hydroelectric Station.

The human exposure pathways also are included in the model and are depicted in Figure 1. The exposure pathways that are considered for the discharge of TMINS liquid effluents are consumption of drinking water and fish, and shoreline exposure. The exposure pathways considered for the discharge of TMINS airborne effluents are plume exposure, inhalation, cow milk consumption, goat milk consumption, fruit and vegetable consumption, meat consumption and land deposition.

Numerous data files are used in the calculations that describe the area around TMI in terms of population distribution and foodstuffs production. Data files include such information as the distance from the plant stack to the site boundary in each sector, the population groupings, milk cows, milk goats, gardens of more than 500 square feet, meat animals, downstream drinking water users, and crop yields.

When determining the dose to humans, it is necessary to consider all applicable pathways and all exposed tissues, summing the dose from each to provide the total dose for each organ as well as the whole body from a given radionuclide. Dose calculations involve determining the energy absorbed per unit mass in the various tissues. Thus, for radionuclides taken into the body, the metabolism of the radionuclide in the body must be known along with the physical characteristics of the nuclide such as energies, types of radiations emitted and half-life. The dose assessment model also contains dose conversion factors for the radionuclides for each of four age groups (adults, teenagers, children and infants) and eight organs (total body, thyroid, liver, skin, kidney, lung, bone and GI tract).

Doses are calculated for what is termed the "maximum hypothetical individual". This individual is assumed to be affected by the combined maximum environmental concentrations wherever they occur.

For liquid releases, the maximum hypothetical individual would consume 193 gallons of Susquehanna River water per year from the first downstream drinking water supplier, eat 46 pounds of fish each year that reside in the plant discharge area and stand 67 hours per year on the shoreline influenced by the plant discharge.

For airborne releases, the maximum hypothetical individual would live at the location of highest radionuclide concentration for inhalation and direct plume exposure. Additionally, this individual each year would consume 106 gallons of cow milk, 141 pounds of leafy vegetables, 1389 pounds of non-leafy vegetables and fruits and 243 pounds of meat produced at the locations with the highest predicted radionuclide concentrations. Consumption of goat milk is not included, since this exposure pathway does not currently exist.

2. Result of Dose Calculations

The maximum hypothetical doses due to 2006 TMI-1 and TMI-2 liquid and airborne effluents are summarized in Tables 1 and 2. Table 1 compares the calculated maximum hypothetical individual doses to the USNRC 10 CFR 50 App. I guidelines. This table also compares the calculated doses (to an individual of the public) from effluents and direct radiation to USEPA 40 CFR 190 dose limits.

Table 2 presents the maximum hypothetical whole body doses to an individual.

As shown in Table 1, the doses calculated for 2006 operations at TMINS were well below the Federal dose limits (USEPA 40 CFR 190) and the guidelines of USNRC 10 CFR 50 App. I. This conclusion was supported by radionuclide concentrations detected in actual environmental samples.

Doses from natural background radiation provide a baseline for assessing the potential public health significance of radioactive effluents. Natural background radiation from cosmic, terrestrial and natural radionuclides in the human body (not including radon), averages about 100 mrem/yr (Ref. 5). Additionally, the average individual living in the United States receives an annual dose of about 2,400 mrem to the lung from natural radon gas. This lung dose is considered to be equivalent to a whole (or total) body dose of 200 mrem (Ref. 5). Therefore, the average person in the United States receives a whole body dose of about 300 mrem/yr from natural background radiation sources.

As shown on Table 2, the maximum hypothetical whole body dose received by an individual from 2006 TMI-1 and TMI-2 liquid and airborne effluents combined was conservatively calculated to be 0.025 mrem. This dose is equivalent to <0.01% percent of the dose that an individual living in the TMI area receives each year from natural background radiation (300 mrem).

The low doses calculated for 2006 TMINS operations were the result of efforts to maintain releases "as low as reasonably achievable" (ALARA).

In conclusion, radioactive materials related to TMINS operations were detected in environmental samples, but the measured concentrations were low and consistent with measured effluents. The environmental sample results verified that the doses received by the public from TMINS effluents in 2006 were well below applicable dose limits and only a small fraction of the doses received from natural background radiation. Additionally, the results indicated that there was no permanent buildup of radioactive materials in the environment and no increase in background radiation levels.

Therefore, based on the results of the radiological environmental monitoring program (REMP) and the doses calculated from measured effluents, TMINS operations in 2006 did not have any adverse effects on the health of the public or on the environment.

TABLE 1

Calculated Maximum Hypothetical Doses to an Individual from 2006 TMI-1 and TMI-2 Liquid and Airborne Effluents

	Maximum Hypothetical Doses To An Individual		
	USNRC 10 CFR 50 APP. I Guidelines (mrem/yr)	**Calculated Dose (mrem/yr) TMI-1**	**TMI-2**
From Radionuclides In Liquid Releases	3 total body, or	1.35E-2	4.39E-4
	10 any organ	1.41E-2	6.90E-4
From Radionuclides In Airborne Releases (Noble Gases)	5 total body, or	7.91E-6	0*
	15 skin	1.54E-4	0*
From Radionuclides In Airborne Releases (Iodines, Tritium and Particulates)	15 any organ	1.07E-2	3.97E-5

*No noble gases were released from TMI-2.

	USEPA 40 CFR 190 Limits (mrem/yr)	**Calculated Dose (mrem/yr) TMI-1 and TMI-2 Combined****
Total from Site	75 thyroid	0.25
	25 total body or other organs	0.26

* *This sums together TMI-1 and TMI-2 maximum doses regardless of age group for different pathways. The combined doses include those due to radioactive effluents and direct radiation from TMINS. The direct radiation dose is calculated from environmental TLD data. For this calculation, exposure is assumed to be equal to dose.

The direct radiation dose from 2006 TMINS operations was 0.2 mrem. This dose was based on a maximum net fence-line exposure rate of 3 mR/std month and a shoreline/fence-line occupancy factor of 67 hours (Regulatory Guide 1.109). The combination of the maximum organ dose from TMI-1 and TMI-2 effluents (0.03 mrem) and the dose from direct radiation (0.2 mrem) yielded a maximum hypothetical dose of 0.26 mrem.

TABLE 2

Calculated Whole Body Doses to the Maximum Individual From 2006 TMI-1 and TMI-2 Liquid and Airborne Effluents

	Calculated Maximum Individual Whole Body Dose (mrem/yr)	
	TMI-1	**TMI-2**
From Radionuclides In Liquid Releases	1.35E-2	4.39E-4
From Radionuclides in Airborne Releases (Noble Gases)	7.91E-6	0*
From Radionuclides In Airborne Releases (Iodines, Tritium and Particulates)	1.06E-2	3.97E-5

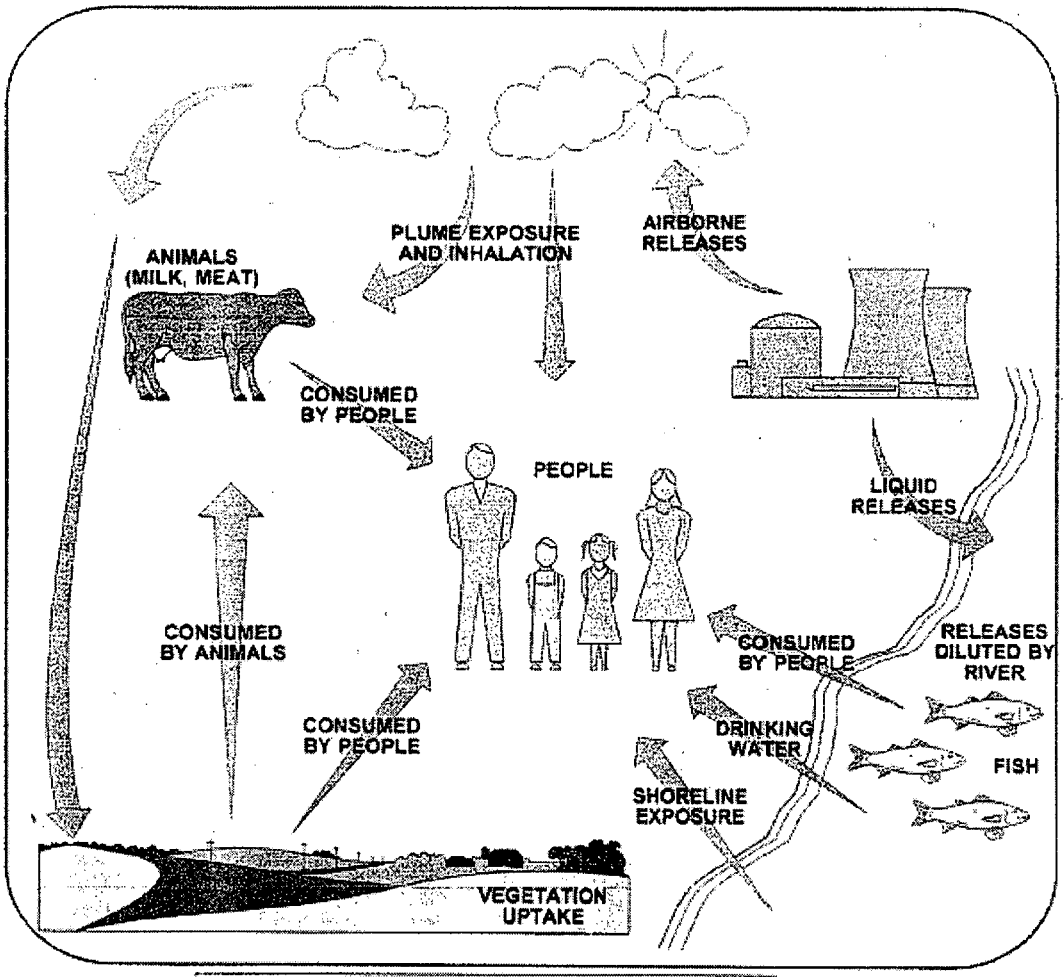
*No noble gases were released from TMI-2.

Individual Whole Body Dose Due to TMI-1 and TMI-2 Operations: 0.025 mrem/yr

Individual Whole Body Dose Due to Natural Background Radiation 300 mrem/yr

Figure 1

Exposure Pathways For Radionuclides Routinely Released From TMINS



PREDOMINANT RADIONUCLIDES

NOBLE GASES (Xe,Kr)
Plume exposure

RADIOIODINES (I-131, I-133)
Inhalation and consumption of milk, water, fruits, and vegetables

RADIOSTRONTIUMS (Sr-89, Sr-90)
Consumption of milk, meat, fruits, and vegetables

ACTIVATION PRODUCTS (Co-60, Mn-54)
Shoreline exposure

RADIOCESIUMS (Cs-134, Cs-137)
Shoreline exposure and consumption of milk, meat, fish, water, fruits, and vegetables

TRITIUM (H-3)
Inhalation and consumption of water, milk, fruits, and vegetables

F. 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 E). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's 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 ± 20% of the reference value. Performance is acceptable with warning when a mean result falls in the range from ±20% to ±30% of the reference value (i.e., 20% < bias < 30%). If the bias is greater than 30%, the results are deemed not acceptable.

For the primary laboratory, 24 out of 28 analytes met the specified acceptance criteria. Four samples did not meet the specified acceptance criteria for the following reasons:

1. Teledyne Brown Engineering's MAPEP Series 15 January 2006 soil

Cs-134 was evaluated as a false positive, although TBE considered the result a non-detect due to the peak not being identified by the gamma software. MAPEP suggests the Bi-214 is not being differentiated from the Cs-134 peak. When the ratio of activity to uncertainty exceeds 3, TBE will use a key line analysis rather than a weighted mean analysis when evaluating MAPEP non-detects.

2. Teledyne Brown Engineering's MAPEP Series 15 January 2006 Sr-90 in vegetation result of 2.22 Bq/kg exceeded the upper acceptance range of 2.029 Bq/kg. The samples were analyzed in triplicate and the results averaged. One high result of 2.43 Bq/kg biased the submitted results on the high side. TBE was unable to determine the cause for the higher result. The Sr-90 in vegetation results for MAPEP Series 14 and MAPEP Series 16 were acceptable. No client samples were analyzed during the MAPEP Series 14 time period.

3. Teledyne Brown Engineering's MAPEP Series 15 January 2006 Pu-238 and Pu-239/240 in vegetation result of 2.22 Bq/kg failed the required acceptance ranges. TBE was evaluating the current preparation method for vegetation samples, which proved insufficient for the analyses. TBE does not perform isotopic Pu on client's vegetation samples.

For the secondary laboratory, 20 out of 25 analytes met the specified acceptance criteria. Seven samples did not meet the specified acceptance criteria for the following reasons:

1. Environmental Inc.'s ERA November 2006 water I-131 result of 28.4 pCi/L exceeded the upper control limit of 27.3 pCi/L. The reported result was an average of three analyses, results ranged from 25.36 pCi/L to 29.23 pCi/L. A fourth analysis was performed, with a result of 24.89 pCi/L.

2. Environmental Inc.'s MAPEP January 2006 vegetation Pu-238 result of 0.08 Bq/sample exceeded the lower control limit of 0.10 Bq/sample due to incomplete dissolution of the sample.

3. Environmental Inc.'s MAPEP January 2006 air particulate Pu-238 result of 0.03 Bq/sample exceeded the lower control limit of 0.05 Bq/sample due to incomplete dissolution of the sample.

4. Environmental Inc.'s MAPEP January 2006 soil Pu-238, Pu-239/240, U-233/234 and U-238 results of 14.6, 14.6, 13.5 and 15.4 Bq/kg, respectively, exceeded the lower control limits of 42.81,

32.09, 25.9 and 27.2 Bq/kg, respectively, due to incomplete dissolution of the sample.

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. Three Mile Island Nuclear Station, Unit 1, Technical Specifications, DPR 50.
2. Three Mile Island Nuclear Station, Unit 2, PDMS Technical Specifications, DPR 73.
3. Radiation Management Corporation. "Three Mile Island Nuclear Station, Preoperational Radiological Environmental Monitoring Program, January 1, 1974 - June5, 1974." RMC-TR-75-17, January 1975.
4. AmerGen. "Three Mile Island Nuclear Station Offsite Dose Calculation Manual (ODCM)."
5. National Council of Radiation Protection and Measurements Report No. 93. "Ionizing Radiation Exposure of the Population of the United States." 1987.

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APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2006

Name of Facility: THREE MILE ISLAND NUCLEAR STATION
Location of Facility: MIDDLETOWN COUNTY, PA
DOCKET NUMBER: 50-289 & 50-320
REPORTING PERIOD: 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	H-3	24	200	1927 (8/12) (<164/9830)	170 (0/12) (<133/<189)	1927 (8/12) (<164/9830)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	I-131	12	1	N/A	0.6 (2/12) (< 0.4/ 1.0)	0.6 (2/12) (< 0.4/ 1.0)	A3-2 CONTROL SWATARA CREEK 2.5 MILES N OF SITE	0
	GAMMA	24						
	MN-54		15	4 (0/12) (<1/<7)	4 (0/12) (<1/<8)	4 (0/12) (<1/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	CO-58		15	4 (0/12) (<1/<8)	5 (0/12) (<1/<8)	5 (0/12) (<1/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	FE-59		30	10 (0/12) (<2/<15)	9 (0/12) (<2/<17)	10 (0/12) (<2/<15)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	CO-60		15	4 (0/12) (<1/<7)	5 (0/12) (<1/<8)	5 (0/12) (<1/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	ZN-65		30	10 (0/12) (<1/<17)	10 (0/12) (<1/<22)	10 (0/12) (<1/<22)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	NB-95		15	5 (0/12) (<1/<8)	5 (0/12) (<1/<9)	5 (0/12) (<1/<9)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0

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SURFACE WATER (PCI/LITER)	ZR-95		30	8 (0/12) (<2/<13)	8 (0/12) (<1/<14)	8 (0/12) (<2/<13)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	CS-134		15	5 (0/12) (<1/<8)	5 (0/12) (<1/<10)	5 (0/12) (<1/<10)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	CS-137		18	5 (0/12) (<1/<8)	4 (0/12) (<1/<8)	5 (0/12) (<1/<8)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	BA-140		60	28 (0/12) (<10/<37)	27 (0/12) (<12/<40)	28 (0/12) (<10/<37)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	LA-140		15	9 (0/12) (<3/<13)	9 (0/12) (<4/<13)	9 (0/12) (<3/<13)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
DRINKING WATER (PCI/LITER)	GR-B	36	4	2.8 (15/24) (< 1.7/ 4.1)	2.3 (5/12) (1.9/ 3.3)	2.9 (8/12) (< 1.7/ 4.1)	G15-2 INDICATOR WRIGHTS WATER SUPPLY 13.6 MILES SE OF SITE	0
	I-131	36	1	0.6 (0/24) (< 0.3/< 1.2)	0.6 (0/12) (< 0.3/< 1.4)	0.6 (0/12) (< 0.3/< 1.4)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	H-3	36	200	171 (2/24) (<134/193)	168 (0/12) (<133/<181)	173 (2/12) (<135/193)	G15-3 INDICATOR LANCASTER WATER AUTHORITY 14.8 MILES SE OF SITE	0

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DRINKING WATER (PCI/LITER)	GAMMA	36						
	MN-54		15	4 (0/24) (<1/<7)	4 (0/12) (<1/<7)	4 (0/12) (<1/<7)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	CO-58		15	4 (0/24) (<2/<8)	5 (0/12) (<2/<9)	5 (0/12) (<2/<9)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	FE-59		30	9 (0/24) (<3/<16)	10 (0/12) (<4/<18)	10 (0/12) (<4/<18)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	CO-60		15	4 (0/24) (<1/<8)	5 (0/12) (<2/<8)	5 (0/12) (<2/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	ZN-65		30	9 (0/24) (<3/<19)	11 (0/12) (<3/<18)	11 (0/12) (<3/<18)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	NB-95		15	4 (0/24) (<2/<8)	5 (0/12) (<2/<8)	5 (0/12) (<2/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	ZR-95		30	8 (0/24) (<3/<14)	9 (0/12) (<3/<14)	9 (0/12) (<3/<14)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	CS-134		15	4 (0/24) (<1/<10)	5 (0/12) (<1/<10)	5 (0/12) (<1/<10)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0

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DRINKING WATER (PCI/LITER)	CS-137		18	4 (0/24) (<1/<7)	5 (0/12) (<2/<8)	5 (0/12) (<2/<8)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	BA-140		60	29 (0/24) (<10/<44)	32 (0/12) (<12/<42)	32 (0/12) (<12/<42)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
	LA-140		15	10 (0/24) (<3/<14)	10 (0/12) (<4/<14)	10 (0/12) (<4/<14)	Q9-1 CONTROL STEELTON WATER COMPANY 8.5 MILES NW OF SITE	0
EFFLUENT WATER (PCI/LITER)	GR-B	12	4	4.8 (11/12) (< 2.2/ 7.9)	N/A	4.8 (11/12) (< 2.2/ 7.9)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	I-131	12	1	0.6 (1/12) (< 0.4/< 0.9)	N/A	0.6 (1/12) (< 0.4/< 0.9)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	H-3	12	200	19609 (8/12) (<171/99600)	N/A	19609 (8/12) (<171/99600)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	SR-89	2	5	3.6 (0/2) (< 2.2/< 5.0)	N/A	3.6 (0/2) (< 2.2/< 5.0)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	SR-90	2	1	0.6 (0/2) (< 0.6/< 0.7)	N/A	0.6 (0/2) (< 0.6/< 0.7)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0

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EFFLUENT WATER (PCI/LITER)	GAMMA	12						
	MN-54		15	4 (0/12) (<1/<8)	N/A	4 (0/12) (<1/<8)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	CO-58		15	5 (0/12) (<2/<8)	N/A	5 (0/12) (<2/<8)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	FE-59		30	10 (0/12) (<4/<19)	N/A	10 (0/12) (<4/<19)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	CO-60		15	5 (0/12) (<1/<10)	N/A	5 (0/12) (<1/<10)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	ZN-65		30	11 (0/12) (<3/<21)	N/A	11 (0/12) (<3/<21)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	NB-95		15	5 (0/12) (<2/<8)	N/A	5 (0/12) (<2/<8)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	ZR-95		30	9 (0/12) (<3/<14)	N/A	9 (0/12) (<3/<14)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	CS-134		15	5 (0/12) (<1/<9)	N/A	5 (0/12) (<1/<9)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0

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EFFLUENT WATER (PCI/LITER)	CS-137		18	5 (0/12) (<1/<10)	N/A	5 (0/12) (<1/<10)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	BA-140		60	32 (0/12) (<13/<40)	N/A	32 (0/12) (<13/<40)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	LA-140		15	10 (0/12) (<4/<14)	N/A	10 (0/12) (<4/<14)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
STORM WATER (PCI/LITER)	H-3	4	200	290 (3/4) (<188/480)	N/A	290 (3/4) (<188/480)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	GAMMA	4						
	MN-54		15	4 (0/4) (<2/<7)	N/A	4 (0/4) (<2/<7)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	CO-58		15	4 (0/4) (<2/<7)	N/A	4 (0/4) (<2/<7)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	FE-59		30	9 (0/4) (<4/<13)	N/A	9 (0/4) (<4/<13)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	CO-60		15	5 (0/4) (<2/<9)	N/A	5 (0/4) (<2/<9)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0

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STORM WATER (PCI/LITER)	ZN-65		30	9 (0/4) (<3/<15)	N/A	9 (0/4) (<3/<15)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	NB-95		15	5 (0/4) (<2/<7)	N/A	5 (0/4) (<2/<7)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	ZR-95		30	7 (0/4) (<3/<11)	N/A	7 (0/4) (<3/<11)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	CS-134		15	4 (0/4) (<2/<7)	N/A	4 (0/4) (<2/<7)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	CS-137		18	4 (0/4) (<2/<7)	N/A	4 (0/4) (<2/<7)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	BA-140		60	24 (0/4) (<12/<34)	N/A	24 (0/4) (<12/<34)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	LA-140		15	8 (0/4) (<4/<11)	N/A	8 (0/4) (<4/<11)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
GROUND WATER (PCI/LITER)	H-3	61	200	693 (44/61) (168/5280)	N/A	4840 (2/2) (4400/5280)	RW-2 INDICATOR ONSITE WELL	0

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GROUND WATER (PCI/LITER)	SR-90	6	1	0.6 (0/6) (< 0.4/< 0.7)	N/A	0.7 (0/1) (< 0.7)	OS-14 INDICATOR ONSITE WELL	0
	GAMMA	18						
	MN-54		15	3 (0/18) (<0/<7)	N/A	5 (0/4) (<2/<7)	48S INDICATOR ONSITE WELL	0
	CO-58		15	3 (0/18) (<0/<6)	N/A	5 (0/1) (<5)	N2-1 INDICATOR GOLDSBORO MARINA 1.2 MILES W OF SITE	0
	FE-59		30	6 (0/18) (<1/<14)	N/A	10 (0/4) (<4/<14)	48S INDICATOR ONSITE WELL	0
	CO-60		15	3 (0/18) (<0/<8)	N/A	5 (0/4) (<1/<8)	48S INDICATOR ONSITE WELL	0
	ZN-65		30	7 (0/18) (<1/<20)	N/A	12 (0/4) (<4/<20)	OSF INDICATOR ONSITE WELL	0
	NB-95		15	3 (0/18) (<0/<8)	N/A	6 (0/4) (<2/<8)	OSF INDICATOR ONSITE WELL	0
	ZR-95		30	5 (0/18) (<1/<11)	N/A	9 (0/4) (<4/<11)	OSF INDICATOR ONSITE WELL	0

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GROUND WATER (PCI/LITER)	CS-134		15	3 (0/18) (<0/<11)	N/A	6 (0/4) (<2/<11)	OSF INDICATOR ONSITE WELL	0
	CS-137		18	3 (0/18) (<0/<9)	N/A	9 (0/1) (<9)	MS-22 INDICATOR ONSITE WELL	0
	BA-140		60	23 (0/18) (<11/<49)	N/A	35 (0/1) (<35)	N2-1 INDICATOR GOLDSBORO MARINA 1.2 MILES W OF SITE	0
	LA-140		15	8 (0/18) (<3/<15)	N/A	12 (0/4) (<6/<15)	OSF INDICATOR ONSITE WELL	0
BOTTOM FEEDER (FISH) (PCI/KG WET)	SR-89	4		15 (0/2) (<5/<25)	12 (0/2) (<5/<18)	15 (0/2) (<5/<25)	INDB INDICATOR YORK HAVEN DAM DOWNSTREAM OF DISCHARGE	0
	SR-90	4	5	3 (0/2) (<1/<5)	3 (0/2) (<2/<4)	3 (0/2) (<1/<5)	INDB INDICATOR YORK HAVEN DAM DOWNSTREAM OF DISCHARGE	0
	GAMMA K-40	4	N/A	3405 (2/2) (3250/3560)	2460 (2/2) (2440/2480)	3405 (2/2) (3250/3560)	INDB INDICATOR YORK HAVEN DAM DOWNSTREAM OF DISCHARGE	0
	MN-54		130	59 (0/2) (<52/<66)	77 (0/2) (<71/<83)	77 (0/2) (<71/<83)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0

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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
BOTTOM FEEDER (FISH) (PCI/KG WET)	CO-58		130	76 (0/2) (<65/<87)	86 (0/2) (<79/<93)	86 (0/2) (<79/<93)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	FE-59		260	163 (0/2) (<132/<193)	219 (0/2) (<184/<253)	219 (0/2) (<184/<253)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CO-60		130	53 (0/2) (<49/<58)	72 (0/2) (<70/<74)	72 (0/2) (<70/<74)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	ZN-65		260	136 (0/2) (<101/<170)	152 (0/2) (<112/<192)	152 (0/2) (<112/<192)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CS-134		100	70 (0/2) (<57/<84)	79 (0/2) (<67/<91)	79 (0/2) (<67/<91)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CS-137		100	64 (0/2) (<50/<78)	80 (0/2) (<77/<82)	80 (0/2) (<77/<82)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
PREDATOR (FISH) (PCI/KG WET)	SR-89	4		19 (0/2) (<5/<32)	19 (0/2) (<5/<34)	19 (0/2) (<5/<34)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	SR-90	4	5	4 (0/2) (<3/<4)	4 (0/2) (<4/<4)	4 (0/2) (<4/<4)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2006

Name of Facility: THREE MILE ISLAND NUCLEAR STATION — **DOCKET NUMBER:** 50-289 & 50-320
Location of Facility: MIDDLETOWN COUNTY, PA — **REPORTING PERIOD:** 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
PREDATOR (FISH) (PCI/KG WET)	GAMMA	4						
	K-40		N/A	3505 (2/2) (3100/3910)	3805 (2/2) (3790/3820)	3805 (2/2) (3790/3820)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	MN-54		130	54 (0/2) (<45/<62)	70 (0/2) (<66/<74)	70 (0/2) (<66/<74)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CO-58		130	65 (0/2) (<45/<84)	82 (0/2) (<79/<86)	82 (0/2) (<79/<86)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	FE-59		260	156 (0/2) (<113/<198)	207 (0/2) (<204/<210)	207 (0/2) (<204/<210)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CO-60		130	60 (0/2) (<28/<93)	68 (0/2) (<58/<77)	68 (0/2) (<58/<77)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	ZN-65		260	137 (0/2) (<63/<210)	156 (0/2) (<117/<195)	156 (0/2) (<117/<195)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CS-134		100	60 (0/2) (<38/<82)	71 (0/2) (<55/<87)	71 (0/2) (<55/<87)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	CS-137		100	64 (0/2) (<46/<83)	72 (0/2) (<55/<88)	72 (0/2) (<55/<88)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2006

Name of Facility: THREE MILE ISLAND NUCLEAR STATION
Location of Facility: MIDDLETOWN COUNTY, PA
DOCKET NUMBER: 50-289 & 50-320
REPORTING PERIOD: 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SEDIMENT (PCI/KG DRY)	GAMMA	7						
	BE-7		N/A	2607 (4/6) (<1130/5200)	1640 (0/1) (<1640)	5200 (1/1) (5200)	A1-3 INDICATOR 0.5 MILES N OF SITE	0
	K-40		N/A	15733 (6/6) (12600/19800)	13400 (1/1) (13400)	19800 (1/1) (19800)	J2-1 INDICATOR YORK HAVEN DAM 1.5 MILES S OF SITE	0
	MN-54		N/A	103 (0/6) (<83/<122)	123 (0/1) (<123)	123 (0/1) (<123)	A1-3 CONTROL NORTH TIP OF TMI 0.5 MILES N OF SITE	0
	CO-58		N/A	127 (0/6) (<93/<160)	82 (0/1) (<82)	160 (0/1) (<160)	J2-1 INDICATOR YORK HAVEN DAM 1.5 MILES S OF SITE	0
	CO-60		N/A	110 (0/6) (<81/<136)	109 (0/1) (<109)	136 (0/1) (<136)	J2-1 INDICATOR YORK HAVEN DAM 1.5 MILES S OF SITE	0
	CS-134		150	119 (0/6) (<79/<138)	105 (0/1) (<105)	138 (0/1) (<138)	A1-3 CONTROL NORTH TIP OF TMI 0.5 MILES N OF SITE	0
	CS-137		180	130 (1/6) (<84/219)	155 (0/1) (<155)	219 (1/1) (219)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	364	10	17 (301/311) (<6/34)	18 (52/53) (<6/34)	19 (46/51) (<7/31)	A3-1 INDICATOR MIDDLETOWN 2.6 MILES N OF SITE	0

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2006

Name of Facility: THREE MILE ISLAND NUCLEAR STATION
Location of Facility: MIDDLETOWN COUNTY, PA
DOCKET NUMBER: 50-289 & 50-320
REPORTING PERIOD: 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
AIR PARTICULATE (E-3 PCI/CU.METER)	GAMMA	28						
	BE-7		N/A	81.7 (16/24) (<22.4/143)	78.7 (3/4) (54.8/<93.7)	101 (3/4) (61/143)	H3-1 INDICATOR FALMOUTH-COLLINS SUBSTATION 2.3 MILES SSE OF SITE	0
	MN-54		N/A	3 (0/24) (< 1.3/< 6.3)	3.5 (0/4) (< 1.9/< 6.4)	4 (0/4) (<3/<6)	G2-1 INDICATOR BECKER FARM 1.4 MILES SE OF SITE	0
	CO-58		N/A	4.7 (0/24) (< 1.7/<10)	4.9 (0/4) (< 2.5/< 9.0)	6 (0/4) (<3/<8)	G2-1 INDICATOR BECKER FARM 1.4 MILES SE OF SITE	0
	CO-60		N/A	3.2 (0/24) (< 1.4/< 8.1)	4 (0/4) (< 2.6/< 7.1)	4 (0/4) (<3/<8)	M2-1 INDICATOR FISHING CREEK; GOLDSBORO 1.3 MILES WSW OF SITE	0
	CS-134		10	2.5 (0/24) (< 1.2/< 4.2)	2.2 (0/4) (< 1.8/< 3.0)	3 (0/4) (<2/<4)	G2-1 INDICATOR BECKER FARM 1.4 MILES SE OF SITE	0
	CS-137		10	2.5 (0/24) (< 1.2/< 5.2)	2.8 (0/4) (< 1.8/< 5.3)	3 (0/4) (<2/<5)	G2-1 INDICATOR BECKER FARM 1.4 MILES SE OF SITE	0
AIR IODINE (E-3 PCI/CU.METER)	GAMMA	364						
	I-131		70	46 (0/311) (<15/<104)	47 (0/53) (<22/<69)	49 (0/51) (<15/<104)	A3-1 INDICATOR MIDDLETOWN 2.6 MILES N OF SITE	0

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DOCKET NUMBER: 50-289 & 50-320
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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
MILK (PCI/LITER)	I-131	96	1	0.5 (0/69) (< 0.2/< 1.2)	0.5 (0/27) (< 0.2/< 1.8)	0.6 (0/23) (< 0.2/< 1.8)	K15-3 CONTROL MEYER'S FARM 14.5 MILES SSW OF SITE	0
	SR-89	20	5	3.8 (0/12) (< 2.9/< 4.7)	3.5 (0/8) (< 1.5/< 5.0)	3.9 (0/4) (< 3.1/< 4.7)	G2-1 INDICATOR BECKER FARM 1.4 MILES SE OF SITE	0
	SR-90	20	1	0.9 (4/12) (< 0.5/ 2.9)	0.8 (4/8) (0.5/ 1.0)	1.2 (1/4) (< 0.5/ 2.9)	D2-1 INDICATOR ALWINE FARM 1.1 MILES ENE OF SITE	0
	GAMMA K-40	96	N/A	1291 (69/69) (1070/1510)	1352 (27/27) (1220/1530)	1363 (4/4) (1230/1480)	F4-1 CONTROL TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	CS-134		15	7 (0/69) (<3/<14)	7 (0/27) (<2/<12)	9 (0/4) (<6/<11)	F4-1 CONTROL TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	CS-137		18	7 (0/69) (<2/<13)	7 (0/27) (<2/<12)	9 (0/4) (<7/<11)	F4-1 CONTROL TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	BA-140		60	38 (0/69) (<11/<60)	38 (0/27) (<9/<57)	42 (0/4) (<34/<49)	F4-1 CONTROL TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	LA-140		15	11 (0/69) (<3/<15)	11 (0/27) (<3/<15)	12 (0/23) (<3/<15)	E2-2 INDICATOR NISSLEY FARM 1.1 MILES E OF SITE	0

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2006

Name of Facility: THREE MILE ISLAND NUCLEAR STATION
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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIREC	LOCATION WITH HIGHEST ANNUAL MEAN: NUMBER OF NONROUTINE REPORTED MEASUREMENTS
FOOD PRODUCT (PCI/KG WET)	SR-90	5	5	4 (1/4) (<2/6)	3 (0/1) (<3)	6 (1/1) (6)	ESE3 INDICATOR	0
	GAMMA	11						
	BE-7		N/A	558 (4/7) (<37/1630)	177 (1/4) (<36/585)	1630 (1/1) (1630)	ESE1 INDICATOR	0
	K-40		N/A	4260 (7/7) (1860/6710)	2878 (4/4) (2250/3870)	6710 (1/1) (6710)	ESE1 INDICATOR	0
	I-131		60	44 (0/7) (<30/<58)	39 (0/4) (<27/<56)	58 (0/1) (<58)	ESE1 INDICATOR	0
	CS-134		60	10 (0/7) (<3/<19)	7 (0/4) (<3/<18)	19 (0/1) (<19)	ESE1 INDICATOR	0
	CS-137		80	13 (0/7) (<3/<31)	8 (0/4) (<4/<20)	31 (0/1) (<31)	ESE1 INDICATOR	0
DIRECT RADIATION (MILLI-ROENTGEN/STD.MO.)	TLD-QUARTERLY	359	N/A	6 (315/315) (4/10)	6 (44/44) (4/9)	20 (4/4) (9/10)	H8-1 INDICATOR SAGINAW ROAD 7.4 MILES SSE OF SITE	0

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APPENDIX B

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

TABLE B-1: Location Designation and Identification System for the Three Mile Island Nuclear Station

XYY-Z- General code for identification of locations, where:

X - Angular Sector of Sampling Location. The compass is divided into 16 sectors of 22 1/2 degrees each with center at Three Mile Island's Units 1 and 2 off-gas vents. Sector A is centered due North, and others are alphabetical in a clockwise direction.

YY - Radial Zone of Sampling Location in miles.

Z - Station's Numerical Designation within sector and zone, using 1, 2, 3... in each sector and zone.

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2006

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
AQS	A1-3	1	0.5	359°	N of site off north tip of TMI in Susquehanna River
ID	A1-4	1	0.3	6°	N of Reactor Building on W fence adjacent to North Weather Station, TMI
AP,AI,ID	A3-1	2	2.7	357°	N of site at Mill Street Substation
SW	A3-2	2	2.7	356°	N of site at Swatara Creek, Middletown
ID	A5-1	2	4.4	3°	N of site on Vine Street Exit off Route 283
ID	A9-3	3	8.0	2°	N of site at Duke Street Pumping Station, Hummelstown
ID	B1-1	1	0.6	25°	NNE of site on light pole in middle of North Bridge, TMI
ID	B1-2	1	0.4	23°	NNE of Reactor Building on top of dike, TMI
ID	B2-1	2	1.9	17°	NNE of site on Sunset Dr. (off Hillsdale Rd.)
ID	B5-1	2	4.9	19°	NNE of site at intersection of School House and Miller Roads
ID	B10-1	3	9.4	21°	NNE of site at intersection of West Areba Avenue and Mill Street, Hershey
FP	B10-2	3	10	31°	NNE of site at Milton Hershey School, Hershey
ID	C1-1	1	0.7	37°	NE of site along Route 441 N
ID	C1-2	1	0.3	50°	NE of Reactor Building on top of dike, TMI
ID	C2-1	2	1.5	44°	NE of site at Middletown Junction
ID	C5-1	2	4.7	43°	NE of site on Kennedy Lane
ID	C8-1	3	7.1	48°	NE of site at Schenk's Church on School House Road
AQF	Control	-	-	-	All locations where finfish are collected above Dock St. Dam, Harrisburg
ID	D1-1	1	0.2	76°	ENE of Reactor Building on top of dike, TMI
ID	D1-2	1	0.5	67°	ENE of site off Route 441 along lane between garden center and residence
M	D2-1	2	1.1	62°	ENE of site at farm on Gingrich Road
ID	D2-2	2	1.6	74°	ENE of site along Hillsdale Rd. (S of Zion Rd.)
ID	D6-1	3	5.2	66°	ENE of site off Beagle Road
ID	D15-1	3	10.8	64°	ENE of site along Route 241, Lawn
AP,AI,ID,GW,FP	E1-2	1	0.4	97°	E of site at TMI Visitor's Center
ID	E1-4	1	0.2	97°	E of Reactor Building on top of dike, TMI
M	E2-2	2	1.1	96°	E of site at farm on Pecks Road
ID	E2-3	2	2.0	97°	E of site along Hillsdale Rd. (N of Creek Rd.)
ID	E5-1	2	4.7	82°	E of site at intersection of North Market Street (Route 230) and Zeager Road
ID	E7-1	3	6.7	88°	E of site along Hummelstown Street, Elizabethtown
ID	F1-1	1	0.5	117°	ESE of site near entrance to 500 kV Substation
ID	F1-2	1	0.2	112°	ESE of Reactor Building on top of dike midway within ISWSF, TMI
AP,AI	F1-3	1	0.6	112°	ESE of site in 500 kV Substation
ID	F1-4	1	0.2	122°	ESE of Reactor Building on top of dike, TMI
ID	F2-1	2	1.3	119°	ESE of site along Engle Road
M	F4-1	2	3.2	104°	ESE of site at farm on Turnpike Road
ID	F5-1	2	4.7	109°	ESE of site along Amosite Road
ID	F10-1	3	9.4	112°	ESE of site along Donegal Springs Road, Donegal Springs
ID	F25-1	3	22	106°	ESE of site at intersection of Steel Way and Loop Roads, Lancaster
ID	G1-2	1	0.7	145°	SE of site along Route 441 S
ID	G1-3	1	0.2	130°	SE of Reactor Building on top of dike, TMI
ID	G1-5	1	0.3	143°	SE of Reactor Building on top of dike, TMI
ID	G1-6	1	0.3	139°	SE of Reactor Building on top of dike, TMI
AI,AP,M	G2-1	2	1.4	126°	SE of site at farm on Becker Road
ID	G2-4	2	1.7	138°	SE of site on Becker Road
ID	G5-1	2	4.8	131°	SE of site at intersection of Bainbridge and Risser Roads
ID	G10-1	3	9.7	128°	SE of site at farm along Engles Tollgate Road, Marietta
ID	G15-1	3	14.4	126°	SE of site at Columbia Water Treatment Plant
DW	G15-2	3	13.3	129°	SE of site at Wrightsville Water Treatment Plant
DW	G15-3	3	15.7	124	SE of site at Lancaster Water Treatment Plant

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2006

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
ID	H1-1	1	0.5	167°	SSE of site, TMI
FP	H1-2	1	1.0	151°	SSE of site along Route 441, Red Hill Market
AP,AI,ID	H3-1	2	2.2	160°	SSE of site in Falmouth-Collins Substation
ID	H5-1	2	4.1	158°	SSE of site by Guard Shack at Brunner Island Steam Electric Station
ID	H8-1	3	7.4	163°	SSE of site along Saginaw Road, Starview
ID	H15-1	3	13.2	157°	SSE of site at intersection of Orchard and Stonewood Roads, Wilshire Hills
AQF	Indicator	-	-	-	All locations where finfish are collected downstream of the TMINS liquid discharge outfall
ID	J1-1	1	0.8	176°	S of site, TMI
SW	J1-2	1	0.5	188°	S of site downstream of the TMINS liquid discharge outfall in Susquehanna River
ID	J1-3	1	0.3	189°	S of Reactor Building just S of SOB, TMI
AQS	J2-1	2	1.4	179°	S of site in Susquehanna River just upstream of the York Haven Dam
ID	J3-1	2	2.7	179°	S of site at York Haven/Cly
ID	J5-1	2	4.9	181°	S of site along Canal Road, Conewago Heights
ID	J7-1	3	6.5	176°	S of site off of Maple Street, Manchester
ID	J15-1	3	12.6	183°	S of site in Met-Ed York Load Dispatch Station
EW	K1-1	1	0.2	210°	On site at RML-7 Main Station Discharge Building
AQS	K1-3	1	0.2	212°	SSW of site downstream of the TMINS liquid discharge outfall in the Susquehanna River
ID	K1-4	1	0.2	209°	SSW of Reactor Building on top of dike behind Warehouse 2, TMI
ID	K2-1	2	1.2	200°	SSW of site on S Shelley Island
ID	K3-1	2	2.0	206°	SSW of site along Rt. 262, N of Cly
ID	K5-1	2	4.9	202°	SSW of site along Conewago Creek Road, Strinestown
ID	K8-1	3	7.5	196°	SSW of site at intersection of Coppenhaffer Road and Route 295, Zions View
ID	K15-1	3	12.8	203°	SSW of site behind McDonald's and next to child care center, Weiglestown
M	K15-3	3	14.4	205°	SSW of site at farm along S Salem Church Rd, Dover
ID	L1-1	1	0.1	236°	SW of site on top of dike W of Mech. Draft Cooling Tower, TMI
ID	L1-2	1	0.5	221°	SW of site on Beech Island
ID	L2-1	2	1.8	224°	SW of site along Route 262
ID	L5-1	2	4.1	228°	SW of site at intersection of Stevens and Wilson Roads
ID	L8-1	3	8.0	225°	SW of site along Rohlers Church Rd., Andersontown
ID	L15-1	3	11.8	226°	SW of site on W side of Route 74, rear of church, Mt. Royal
ID	M1-1	1	0.1	250°	WSW of Reactor Building on SE corner of U-2 Screenhouse fence, TMI
ID	M1-2	1	0.4	252°	WSW of site on E side of Shelley Island, Lot #157
AP,AI,ID	M2-1	2	1.3	256°	WSW of site along Route 262 and adjacent to Fishing Creek, Goldsboro
ID	M5-1	2	4.3	249°	WSW of site at intersection of Lewisberry and Roxberry Roads, Newberrytown
ID	M9-1	3	8.7	243°	WSW of site along Alpine Road, Maytown
ID	N1-1	1	0.7	274°	W of site on W side of Shelley Island, between lots #13 and #14
ID	N1-3	1	0.1	274°	W of Reactor Building on fence adjacent to Screenhouse entrance gate, TMI
ID,GW	N2-1	2	1.2	261°	W of site at Goldsboro Marina
ID	N5-1	2	5.0	268°	W of site off of Old York Road along Robin Hood Drive
ID	N8-1	3	7.7	262°	W of site along Route 382, 1/2 mile north of Lewisberry
ID	N15-2	3	10.4	275°	W of site at intersection of Lisburn Road and Main Street, Lisburn
ID	P1-1	1	0.4	303°	WNW of site on Shelley Island

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2006

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
ID	P1-2	1	0.1	292°	WNW of Reactor Building on fence N of Unit 1 Screenhouse, TMI
ID	P2-1	2	2.0	283°	WNW of site along Route 262
ID	P5-1	2	5.0	284°	WNW of site at intersection of Valley Road (Route 262) and Beinhower Road
ID	P8-1	3	8.0	292°	WNW of site along Evergreen Road, Reesers Summit
ID	Q1-1	1	0.5	317°	NW of site on E side of Shelley Island
ID	Q1-2	1	0.2	321°	NW of Reactor Building on fence W of Warehouse 1, TMI
ID	Q2-1	2	1.9	310°	NW of site along access road along river
ID	Q5-1	2	5.0	317°	NW of site along Lumber Street, Highspire
SW,DW,ID	Q9-1	3	8.5	310°	NW of site at the Steelton Water Company
AP,AI,ID	Q15-1	3	13.4	309°	NW of site behind West Fairview Fire Dept. Social Hall (abandoned)
ID	R1-1	3	0.2	335°	NNW of Reactor Building along W fence, TMI
ID	R1-2	1	0.7	334°	NNW of site on central Henry Island
ID	R3-1	2	2.6	341°	NNW of site at Crawford Station, Middletown
ID	R5-1	2	4.9	339°	NNW of site at intersection of Spring Garden Drive and Route 441
ID	R9-1	3	8.0	341°	NNW of site at intersection of Derry and 66th Streets, Rutherford Heights
ID	R15-1	3	11.2	332°	NNW of site at intersection of Route 22 and Colonial Road, Colonial Park

IDENTIFICATION KEY

ID = Immersion Dose (TLD)
SW = Surface Water
AI = Air Iodine
AP = Air Particulate
FP = Food Products (Green Leafy Vegetation, Fruits, Vegetables)
GW = Ground Water (offsite)
DW = Drinking Water
M = Milk (Cow)
AFT = Finfish
AQS = Aquatic Sediment
EW = Effluent Water

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2006

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Surface Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Surface Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Surface Water	Iodine- 131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Drinking Water	Gross Beta	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2008 Gross alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue)
Drinking Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Drinking Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 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-131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Effluent Water	Iodine-131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Effluent Water	Gross Beta	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2008 Gross alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue)

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2006

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Effluent Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Effluent Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Effluent Water	Strontium 89/90	Semi-annual composite from monthly samples.	TBE, TBE-2023 Compositing of samples	2 gallon	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Storm Water	Gamma Spectroscopy	Quarterly composite of monthly grab samples	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	1 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Storm Water	Tritium	Quarterly composite of monthly grab samples	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	1 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Ground Water	Gamma Spectroscopy	Quarterly, Semi-Annual and Annual samples	ER-TMI-10 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station) TBE, TBE-2023 Compositing of samples	1 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Ground Water	Tritium	Quarterly, Semi-Annual and Annual samples, or as needed	EM-TMI-10 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	I gallon or 125 mL	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2006

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Ground Water	Strontium 89/90	Quarterly, Semi-Annual and Annual samples	ER-TMI-10 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station) TBE, TBE-2023 Compositing of samples	1 gallon	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Fish	Gamma Spectroscopy	Semi-annual samples collected via electroshocking or other techniques	ER-TMI-13 Collection of fish samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Fish	Strontium 89/90	Semi-annual samples collected via electroshocking or other techniques	ER-TMI-13 Collection of fish samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams (wet)	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Sediment	Gamma Spectroscopy	Semi-annual grab samples	ER-TMI-03 Collection of sediment samples for radiological analysis (Three Mile Island Nuclear Station)	500 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	ER-TMI-14 Collection of air particulate and air iodine samples for radiological analysis (Three Mile Island Nuclear Station)	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2008 Gross alpha and/or gross 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 3600 cubic meters)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Iodine	Gamma Spectroscopy	One-week composite of continuous air sampling through charcoal filter	ER-TMI-14 Collection of air particulate and air iodine samples for radiological analysis (Three Mile Island Nuclear Station)	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method)
Milk	I-131	Bi-weekly grab sample when cows are on pasture. Monthly all other times	ER-TMI-01 Collection of milk samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Milk	Strontium-	Quarterly composite	ER-TMI-01 Collection of milk samples for	2 gallon	TBE, TBE-2019 Radiostrontium analysis by ion exchange

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2006

	89/90	of Bi-weekly and monthly grab samples	radiological analysis (Three Mile Island Nuclear Station) TBE, TBE-2023 Compositing of samples		
Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Milk	Gamma Spectroscopy	Bi-weekly grab sample when cows are on pasture. Monthly all other times	ER-TMI-01 Collection of milk samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Gamma Spectroscopy	Annual grab sample	ER-TMI-04 Collection of vegetation samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Strontium-89/90	Annual grab sample	ER-TMI-04 Collection of vegetation samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams	TBE, TBE-2019 Radiostrontium analysis by ion exchange
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Panasonic 814 (containing 4 each $CaSO_4$ elements)	ER-TMI-02 Collection of TLD samples for radiological analysis (Three Mile Island Nuclear Station)	2 badges with 3 dosimeters	Global Dosimetry Solutions, Inc.

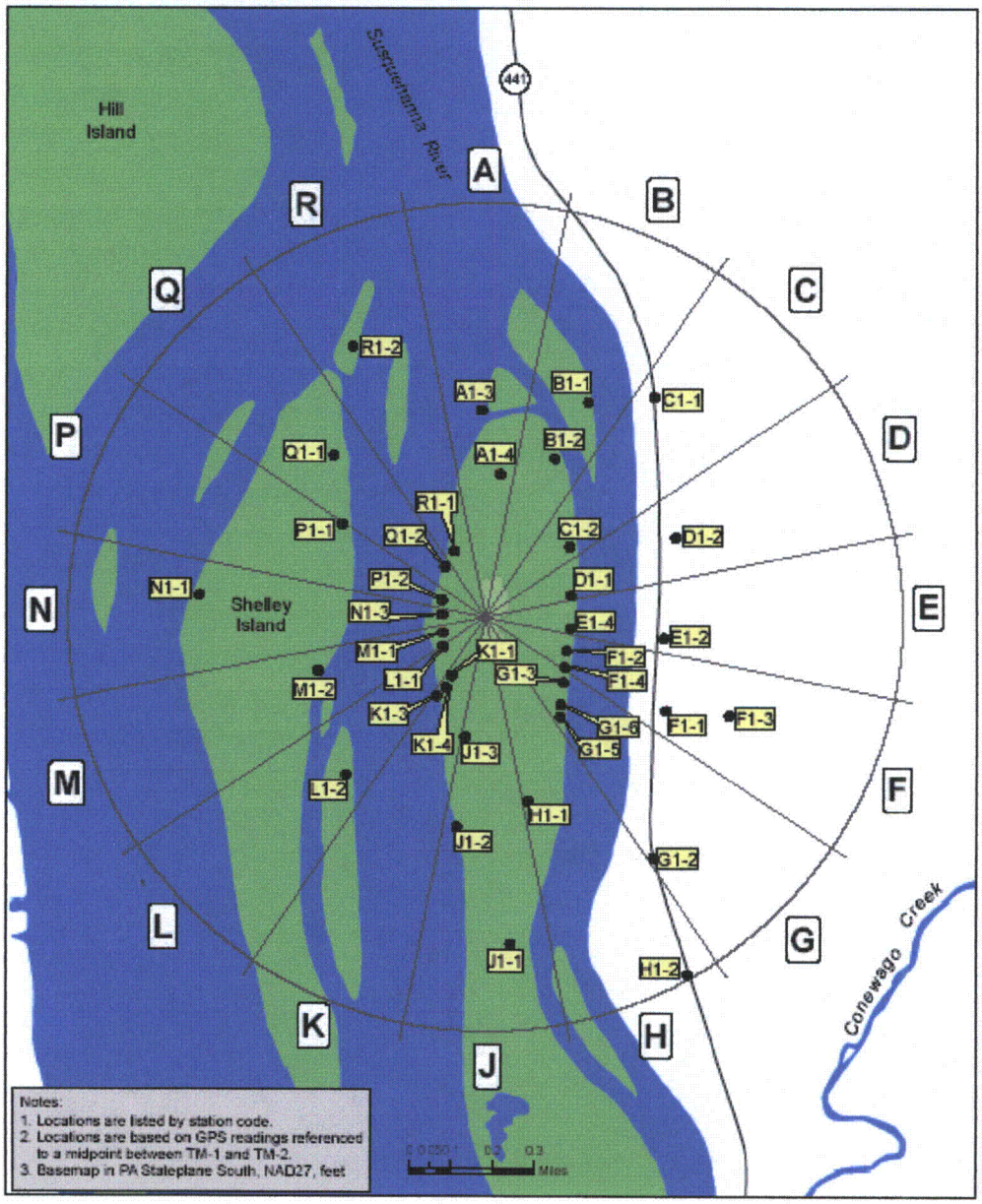


Figure B-1
Environmental Sampling Locations Within One
Mile of the Three Mile Island Nuclear Station, 2006

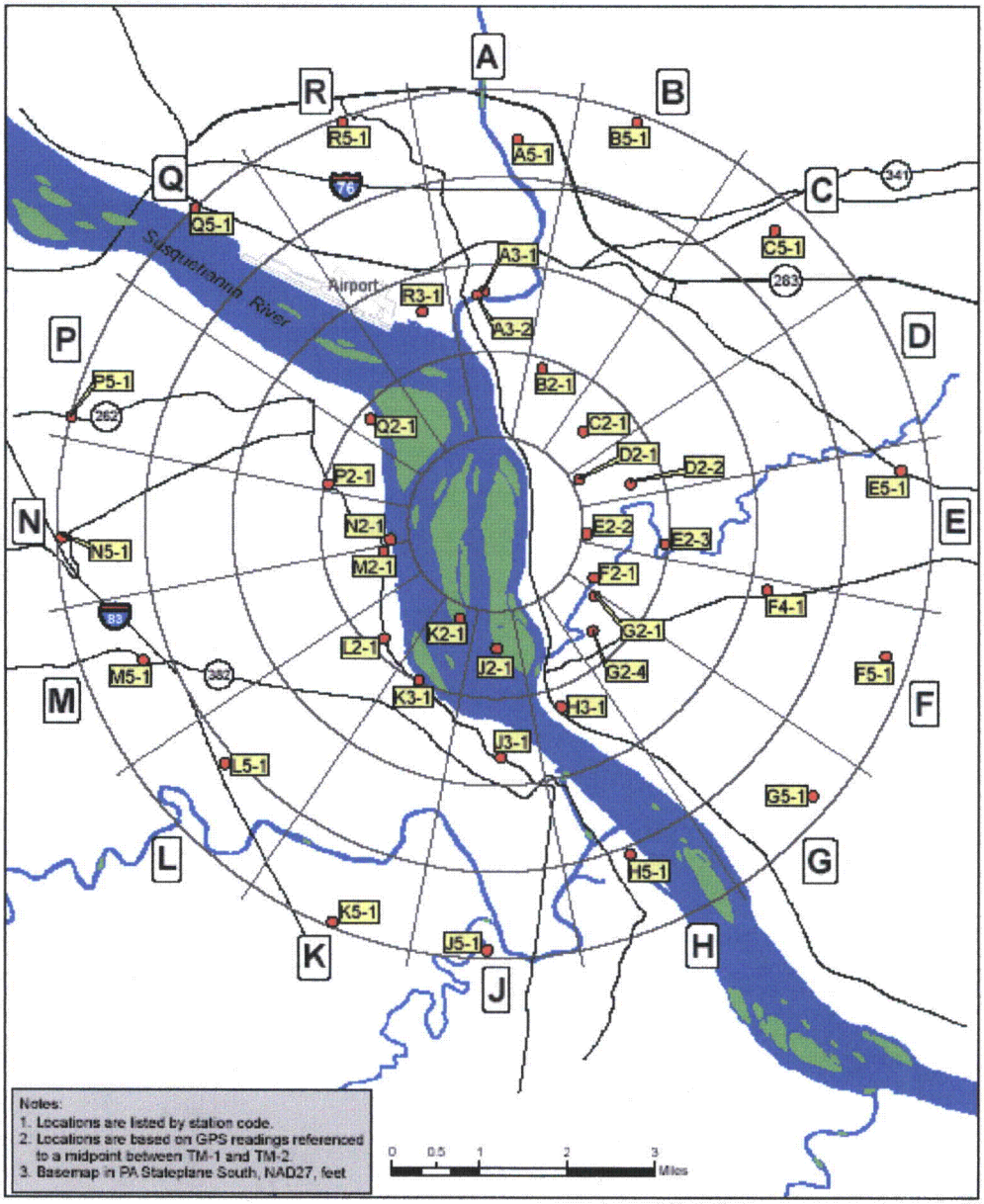


Figure B-2
Environmental Sampling Locations Between One and Five Miles of the Three Mile Island Nuclear Station, 2006

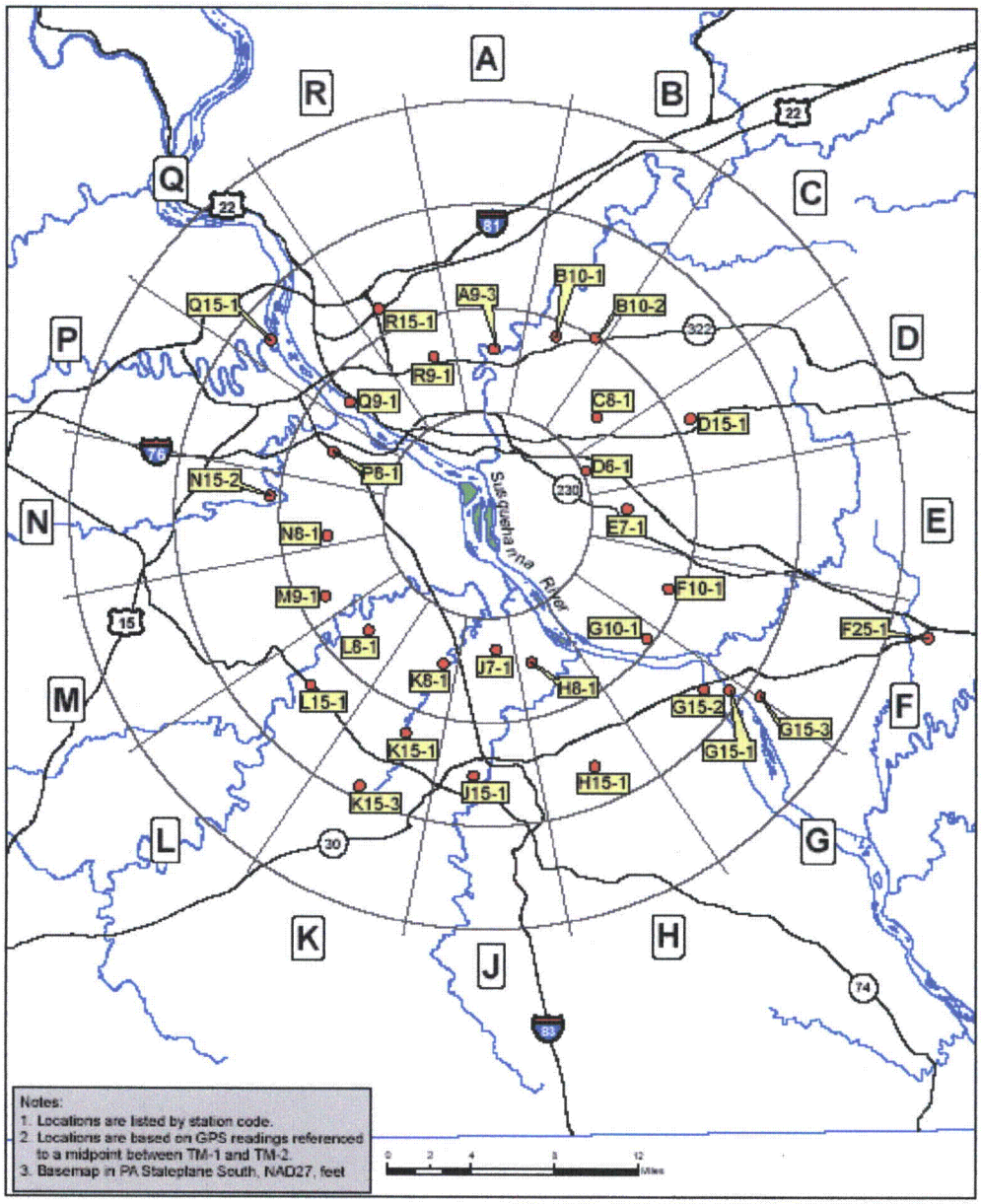


Figure B-3
Environmental Sampling Locations Greater than Five Miles of the Three Mile Island Nuclear Station, 2006

APPENDIX C

DATA TABLES AND FIGURES - PRIMARY LABORATORY

TABLE C-I.1 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	J1-2	Q9-1
01/03/06 - 01/31/06	575 ± 136	< 167
01/31/06 - 02/28/06	427 ± 121	< 177
02/28/06 - 03/28/06	1330 ± 173	< 133
03/28/06 - 05/02/06	< 171	< 173
05/02/06 - 05/30/06	< 175	< 173
05/30/06 - 06/26/06	< 187	< 184
06/26/06 - 08/01/06	277 ± 128	< 189
08/01/06 - 08/29/06	< 164	< 172
08/29/06 - 10/03/06	1050 ± 174	< 178
10/03/06 - 10/31/06	1240 ± 143	< 174
10/31/06 - 11/28/06	9830 ± 1020	< 184
11/28/06 - 01/02/07	7700 ± 808	< 141
MEAN	1927 ± 6508	170 ± 34

TABLE C-I.2 CONCENTRATIONS OF I-131 IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	A3-2
01/03/06 - 01/31/06	< 0.4
01/31/06 - 02/28/06	< 0.6
02/28/06 - 03/28/06	< 0.4
03/28/06 - 05/02/06	< 0.4
05/02/06 - 05/30/06	< 0.5
05/30/06 - 06/26/06	1.0 ± 0.4
06/26/06 - 08/01/06	0.8 ± 0.5
08/01/06 - 08/29/06	< 0.6
08/29/06 - 10/03/06	< 0.6
10/03/06 - 10/31/06	< 0.6
10/31/06 - 11/28/06	< 0.7
11/28/06 - 01/02/07	< 0.4
MEAN	0.6 ± 0.4

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
J1-2	01/03/06 - 01/31/06	< 7	< 6	< 14	< 7	< 16	< 7	< 13	< 8	< 7	< 31	< 10
	01/31/06 - 02/28/06	< 6	< 6	< 15	< 6	< 16	< 7	< 12	< 8	< 8	< 37	< 13
	02/28/06 - 03/28/06	< 6	< 8	< 14	< 6	< 17	< 8	< 13	< 8	< 7	< 37	< 9
	03/28/06 - 05/02/06	< 7	< 7	< 12	< 7	< 15	< 7	< 12	< 6	< 7	< 31	< 11
	05/02/06 - 05/30/06	< 3	< 4	< 8	< 3	< 7	< 4	< 6	< 4	< 3	< 35	< 11
	05/30/06 - 06/26/06	< 6	< 6	< 12	< 6	< 14	< 6	< 11	< 7	< 6	< 33	< 10
	06/26/06 - 08/01/06	< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 1	< 1	< 16	< 5
	08/01/06 - 08/29/06	< 3	< 3	< 8	< 3	< 6	< 3	< 5	< 3	< 3	< 26	< 8
	08/29/06 - 10/03/06	< 1	< 1	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 17	< 6
	10/03/06 - 10/31/06	< 3	< 4	< 10	< 4	< 8	< 4	< 9	< 4	< 4	< 29	< 12
	10/31/06 - 11/28/06	< 5	< 5	< 10	< 5	< 10	< 5	< 9	< 5	< 5	< 34	< 11
	11/28/06 - 01/02/07	< 2	< 2	< 4	< 3	< 3	< 2	< 4	< 2	< 2	< 10	< 3
	MEAN	4 ± 4	4 ± 5	10 ± 9	4 ± 5	10 ± 12	5 ± 5	8 ± 8	5 ± 6	5 ± 5	28 ± 18	9 ± 6
Q9-1	01/03/06 - 01/31/06	< 6	< 7	< 12	< 7	< 14	< 7	< 11	< 8	< 7	< 32	< 11
	01/31/06 - 02/28/06	< 7	< 7	< 13	< 8	< 19	< 7	< 13	< 9	< 7	< 31	< 11
	02/28/06 - 03/28/06	< 8	< 7	< 16	< 8	< 22	< 9	< 12	< 10	< 7	< 40	< 11
	03/28/06 - 05/02/06	< 6	< 7	< 12	< 7	< 15	< 7	< 12	< 7	< 6	< 31	< 12
	05/02/06 - 05/30/06	< 3	< 4	< 8	< 3	< 7	< 4	< 7	< 4	< 3	< 35	< 10
	05/30/06 - 06/26/06	< 8	< 8	< 17	< 8	< 18	< 7	< 14	< 9	< 8	< 40	< 13
	06/26/06 - 08/01/06	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 16	< 5
	08/01/06 - 08/29/06	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 1	< 2	< 17	< 6
	08/29/06 - 10/03/06	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 22	< 6
	10/03/06 - 10/31/06	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 3	< 3	< 22	< 8
	10/31/06 - 11/28/06	< 6	< 5	< 8	< 5	< 10	< 5	< 11	< 5	< 6	< 32	< 9
	11/28/06 - 01/02/07	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 2	< 2	< 12	< 4
	MEAN	4 ± 5	5 ± 5	9 ± #	5 ± 6	10 ± 14	5 ± 5	8 ± 9	5 ± 7	4 ± 5	27 ± 19	9 ± 6

TABLE C-II.1 **CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/03/06 - 01/31/06	< 2.3	< 2.2	< 2.1
01/31/06 - 02/28/06	3.3 ± 1.3	3.1 ± 1.3	3.0 ± 1.3
02/28/06 - 03/28/06	2.9 ± 1.5	< 2.1	< 2.1
03/28/06 - 05/02/06	< 2.2	< 2.1	2.6 ± 1.5
05/02/06 - 05/30/06	3.5 ± 1.6	2.5 ± 1.4	3.3 ± 1.4
05/30/06 - 06/26/06	2.4 ± 1.4	2.7 ± 1.5	< 2.1
06/26/06 - 08/01/06	< 2.2	< 2.3	< 2.2
08/01/06 - 08/29/06	3.4 ± 1.6	3.0 ± 1.4	< 2.0
08/29/06 - 10/03/06	4.1 ± 1.6	4.1 ± 1.6	< 1.9
10/03/06 - 10/31/06	< 1.7	3.6 ± 1.4	1.9 ± 1.2
10/31/06 - 11/28/06	3.8 ± 1.4	2.8 ± 1.3	2.8 ± 1.3
11/28/06 - 01/02/07	3.0 ± 1.5	< 2.1	< 2.1
MEAN	2.9 ± 1.5	2.7 ± 1.3	2.3 ± 0.9

TABLE C-II.2 **CONCENTRATIONS OF I-131 IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/03/06 - 01/31/06	< 0.5	< 0.3	< 0.3
01/31/06 - 02/28/06	< 0.7	< 0.7	< 0.5
02/28/06 - 03/28/06	< 0.3	< 0.4	< 0.4
03/28/06 - 05/02/06	< 0.5	< 0.4	< 0.4
05/02/06 - 05/30/06	< 0.5	< 0.6	< 0.5
05/30/06 - 06/26/06	< 1.2 (1)	< 0.8	< 1.4 (1)
06/26/06 - 08/01/06	< 0.8	< 0.8	< 0.7
08/01/06 - 08/29/06	< 0.6	< 0.6	< 0.7
08/29/06 - 10/03/06	< 0.5	< 0.5	< 0.5
10/03/06 - 10/31/06	< 0.6	< 0.5	< 0.5
10/31/06 - 11/28/06	< 0.6	< 0.8	< 0.8
11/28/06 - 01/02/07	< 0.4	< 0.5	< 0.5
MEAN	0.6 ± 0.5	0.6 ± 0.4	0.6 ± 0.6

TABLE C-II.3 **CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/03/06 - 01/31/06	< 165	< 166	< 163
01/31/06 - 02/28/06	< 177	< 177	< 176
02/28/06 - 03/28/06	< 134	< 135	< 133
03/28/06 - 05/02/06	< 174	< 172	< 172
05/02/06 - 05/30/06	< 173	< 172	< 173
05/30/06 - 06/26/06	< 181	< 186	< 181
06/26/06 - 08/01/06	< 178	< 178	< 176
08/01/06 - 08/29/06	< 173	< 174	< 167
08/29/06 - 10/03/06	< 176	< 174	< 172
10/03/06 - 10/31/06	< 177	193 ± 116	< 177
10/31/06 - 11/28/06	< 182	< 182	< 180
11/28/06 - 01/02/07	< 144	172 ± 98.3	< 144
MEAN	170 ± 30	173 ± 28	168 ± 30

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-II.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	NB-95	ZR-95	Cs-134	Cs-137	Ba-140	La-140
G15-2	01/03/06 - 01/31/06	< 7	< 7	< 16	< 7	< 15	< 8	< 12	< 8	< 7	< 29	< 12
	01/31/06 - 02/28/06	< 7	< 7	< 15	< 8	< 18	< 7	< 11	< 10	< 7	< 36	< 13
	02/28/06 - 03/28/06	< 2	< 3	< 6	< 2	< 6	< 3	< 5	< 3	< 2	< 23	< 8
	03/28/06 - 05/02/06	< 7	< 7	< 13	< 8	< 15	< 7	< 12	< 8	< 7	< 34	< 12
	05/02/06 - 05/30/06	< 3	< 3	< 8	< 4	< 7	< 4	< 6	< 3	< 3	< 32	< 11
	05/30/06 - 06/26/06	< 6	< 5	< 12	< 6	< 13	< 6	< 9	< 6	< 6	< 28	< 10
	06/26/06 - 08/01/06	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 41	< 14
	08/01/06 - 08/29/06	< 3	< 4	< 7	< 3	< 7	< 4	< 7	< 3	< 3	< 27	< 9
	08/29/06 - 10/03/06	< 1	< 2	< 3	< 1	< 3	< 2	< 3	< 1	< 1	< 14	< 5
	10/03/06 - 10/31/06	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 3	< 3	< 22	< 7
	10/31/06 - 11/28/06	< 5	< 5	< 12	< 5	< 9	< 6	< 9	< 5	< 5	< 32	< 10
	11/28/06 - 01/02/07	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 2	< 2	< 10	< 3
	MEAN	4 ± 5	4 ± 4	9 ± 8	4 ± 5	9 ± 10	4 ± 4	7 ± 7	4 ± 6	4 ± 4	27 ± 18	9 ± 6
G15-3	01/03/06 - 01/31/06	< 5	< 6	< 12	< 7	< 14	< 6	< 12	< 8	< 7	< 29	< 10
	01/31/06 - 02/28/06	< 6	< 6	< 14	< 6	< 17	< 6	< 12	< 8	< 7	< 33	< 11
	02/28/06 - 03/28/06	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 3	< 3	< 25	< 8
	03/28/06 - 05/02/06	< 7	< 8	< 13	< 7	< 19	< 7	< 14	< 9	< 7	< 39	< 13
	05/02/06 - 05/30/06	< 4	< 4	< 10	< 4	< 9	< 5	< 9	< 5	< 4	< 43	< 14
	05/30/06 - 06/26/06	< 5	< 6	< 12	< 6	< 12	< 7	< 11	< 6	< 6	< 31	< 12
	06/26/06 - 08/01/06	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 2	< 2	< 44	< 14
	08/01/06 - 08/29/06	< 3	< 4	< 8	< 4	< 6	< 3	< 6	< 3	< 3	< 27	< 9
	08/29/06 - 10/03/06	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 16	< 5
	10/03/06 - 10/31/06	< 3	< 3	< 8	< 3	< 7	< 4	< 6	< 3	< 3	< 27	< 9
	10/31/06 - 11/28/06	< 5	< 5	< 11	< 5	< 10	< 6	< 9	< 4	< 5	< 31	< 10
	11/28/06 - 01/02/07	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 11	< 3
	MEAN	4 ± 3	4 ± 4	9 ± 7	4 ± 4	9 ± 10	5 ± 4	8 ± 7	4 ± 5	4 ± 4	30 ± 20	10 ± 6

TABLE C-II.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95	Nb-95	Cs-134	Cs-137	Ba-140	La-140
Q9-1	01/03/06 - 01/31/06	< 7	< 7	< 18	< 8	< 17	< 8	< 13	< 10	< 8	< 42	< 10
	01/31/06 - 02/28/06	< 7	< 9	< 16	< 7	< 18	< 8	< 13	< 9	< 8	< 35	< 13
	02/28/06 - 03/28/06	< 6	< 6	< 13	< 6	< 18	< 7	< 10	< 9	< 6	< 29	< 10
	03/28/06 - 05/02/06	< 7	< 8	< 15	< 8	< 17	< 8	< 14	< 7	< 8	< 41	< 14
	05/02/06 - 05/30/06	< 3	< 3	< 8	< 3	< 7	< 4	< 6	< 3	< 3	< 32	< 11
	05/30/06 - 06/26/06	< 6	< 7	< 15	< 6	< 13	< 6	< 12	< 7	< 6	< 35	< 11
	06/26/06 - 08/01/06	< 1	< 2	< 5	< 2	< 3	< 2	< 4	< 1	< 2	< 39	< 12
	08/01/06 - 08/29/06	< 3	< 3	< 7	< 3	< 7	< 4	< 7	< 3	< 4	< 28	< 8
	08/29/06 - 10/03/06	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 1	< 2	< 17	< 5
	10/03/06 - 10/31/06	< 3	< 4	< 9	< 4	< 8	< 4	< 7	< 3	< 4	< 30	< 10
	10/31/06 - 11/28/06	< 6	< 5	< 12	< 6	< 11	< 7	< 10	< 6	< 6	< 40	< 14
	11/28/06 - 01/02/07	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 12	< 4
	MEAN	4 ± 4	5 ± 5	10 ± 10	5 ± 5	11 ± 12	5 ± 5	9 ± 8	5 ± 6	5 ± 5	32 ± 19	10 ± 6

TABLE C-III.1 **CONCENTRATIONS OF GROSS BETA, IODINE-131, TRITIUM, AND STRONTIUM IN EFFLUENT WATER SAMPLES FOR STATION K1-1 COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Gross Beta	I-131	H-3	Sr-89	Sr-90
01/03/06 - 01/31/06	< 2.2	< 0.4	3920 ± 353		
01/31/06 - 02/28/06	4.5 ± 1.5	< 0.7	2710 ± 176		
02/28/06 - 03/28/06	5.1 ± 1.9	< 0.4	5460 ± 581		
03/28/06 - 05/02/06	3.4 ± 1.8	< 0.4	< 174		
05/02/06 - 05/30/06	4.6 ± 1.6	< 0.5	< 189	< 5.0	< 0.7
05/30/06 - 06/26/06	5.1 ± 1.8	0.8 ± 0.4	< 188		
06/26/06 - 08/01/06	7.9 ± 2.1	< 0.9	28700 ± 661		
08/01/06 - 08/29/06	7.5 ± 2.1	< 0.6	< 171		
08/29/06 - 10/03/06	6.1 ± 1.9	< 0.6	13800 ± 1450		
10/03/06 - 10/31/06	4.4 ± 1.6	< 0.6	17300 ± 914		
10/31/06 - 11/28/06	4.1 ± 1.4	< 0.7	99600 ± 9970	< 2.2	< 0.6
11/28/06 - 01/02/07	2.5 ± 1.6	< 0.5	63100 ± 6210		
MEAN	4.8 ± 3.5	0.6 ± 0.3	19609 ± 62242	3.6 ± 3.9	0.6 ± 0.2

TABLE C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN EFFLUENT WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
K1-1	01/03/06 - 01/31/06	< 8	< 8	< 19	< 10	< 21	< 8	< 14	< 9	< 10	< 39	< 14
	01/31/06 - 02/28/06	< 7	< 8	< 15	< 6	< 16	< 8	< 13	< 9	< 8	< 40	< 12
	02/28/06 - 03/28/06	< 5	< 6	< 13	< 7	< 15	< 7	< 11	< 8	< 6	< 34	< 11
	03/28/06 - 05/02/06	< 6	< 7	< 13	< 7	< 16	< 7	< 12	< 7	< 7	< 36	< 12
	05/02/06 - 05/30/06	< 3	< 4	< 8	< 3	< 8	< 4	< 7	< 4	< 3	< 37	< 12
	05/30/06 - 06/26/06	< 6	< 6	< 12	< 6	< 14	< 6	< 11	< 7	< 6	< 35	< 10
	06/26/06 - 08/01/06	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 40	< 12
	08/01/06 - 08/29/06	< 4	< 4	< 7	< 3	< 7	< 4	< 7	< 4	< 4	< 31	< 10
	08/29/06 - 10/03/06	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 21	< 7
	10/03/06 - 10/31/06	< 3	< 3	< 8	< 3	< 7	< 4	< 5	< 3	< 3	< 24	< 6
	10/31/06 - 11/28/06	< 5	< 5	< 11	< 5	< 13	< 6	< 11	< 5	< 6	< 40	< 12
	11/28/06 - 01/02/07	< 3	< 3	< 5	< 3	< 5	< 3	< 5	< 3	< 3	< 13	< 4
	MEAN	4 ± 4	5 ± 5	10 ± 9	5 ± 5	11 ± 12	5 ± 4	9 ± 8	5 ± 5	5 ± 5	32 ± 17	10 ± 6

TABLE C-IV.1 **CONCENTRATIONS OF TRITIUM AND GAMMA EMITTERS IN STORM WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	H-3	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
EDCB	01/31/06 - 03/28/06	480 ± 126	< 7	< 7	< 13	< 9	< 15	< 7	< 11	< 7	< 7	< 31	< 11
	05/02/06 - 06/26/06	< 188	< 6	< 6	< 13	< 7	< 14	< 7	< 11	< 6	< 7	< 34	< 11
	08/01/06 - 10/03/06	253 ± 124	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 2	< 2	< 18	< 6
	10/31/06 - 01/02/07	240 ± 100	< 2	< 2	< 5	< 3	< 5	< 3	< 4	< 2	< 2	< 12	< 4
	MEAN	223 ± 351	4 ± 5	4 ± 5	9 ± 9	5 ± 7	9 ± 12	5 ± 5	7 ± 8	4 ± 5	4 ± 5	24 ± 21	8 ± 7

TABLE C-V.1 CONCENTRATIONS OF TRITIUM IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STATION CODE	03/09/06	06/08/06	09/08/06	12/09/06	MEAN
48S	236 ± 135	< 178	< 182 *	< 179 *	194 ± 56
GP-1	305 ± 158	(1)	196 ± 118*	459 ± 138*	320 ± 264
GP-6	1220 ± 193	530 ± 129	319 ± 127*	< 186	564 ± 920
GP-8	462 ± 148	580 ± 136	456 ± 136*	< 189	422 ± 331
GP-9	601 ± 158	545 ± 129	262 ± 123*	< 188	399 ± 409
MS-22	492 ± 159	1080 ± 161	964 ± 161*	501 ± 135*	759 ± 614
OSF	586 ± 157	303 ± 125	397 ± 133*	328 ± 125*	404 ± 256
OS-18	463 ± 156	472 ± 145	< 181 *	< 187 *	326 ± 327
GP-12		(1)		< 184	184
MS-2		214 ± 123		295 ± 124*	255 ± 115
MS-5		< 179		< 175 *	177 ± 6
MS-8		831 ± 155		< 181 *	506 ± 919
MS-20		486 ± 131		269 ± 124*	378 ± 307
NW-A		1460 ± 203		1130 ± 182*	1295 ± 467
NW-B		1060 ± 166		278 ± 124*	
NW-C		3410 ± 391		3090 ± 369*	3250 ± 453
NW-CW		1340 ± 194		1050 ± 175*	1195 ± 410
OS-14		168 ± 106		< 186 *	177 ± 25
RW-1		330 ± 119		< 185 *	258 ± 205
RW-2		5280 ± 570		4400 ± 503*	4840 ± 1245
E1-2		< 186			
MS-1		1370 ± 199			
MS-4		288 ± 126			
MS-7		238 ± 113			
MS-19		< 188			
MS-21		436 ± 125			
N2-1		< 174			

* INDICATES DISTILLED ANALYSIS

(1) SAMPLES WERE UNAVAILABLE; THE WELLS WERE DRY.

TABLE C-V.2 CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-90	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
48S	03/09/06	< 0.6	< 5	< 6	< 14	< 8	< 19	< 7	< 11	< 9	< 6	< 34	< 13
	06/09/06		< 4	< 5	< 10	< 4	< 10	< 5	< 9	< 5	< 5	< 41	< 13
	09/08/06		< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 12	< 4
	12/10/06		< 7	< 6	< 13	< 8	< 11	< 7	< 11	< 6	< 6	< 31	< 11
	MEAN		5 ± 4	5 ± 4	10 ± 9	5 ± 6	11 ± 13	5 ± 5	8 ± 8	5 ± 6	5 ± 4	30 ± 25	10 ± 9
OSF	03/09/06	< 0.6	< 5	< 5	< 13	< 5	< 20	< 7	< 11	< 11	< 6	< 33	< 13
	06/09/06		< 5	< 6	< 12	< 5	< 11	< 6	< 10	< 6	< 5	< 49	< 15
	09/08/06		< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 15	< 6
	12/10/06		< 4	< 6	< 11	< 6	< 13	< 8	< 11	< 5	< 5	< 36	< 13
	MEAN		4 ± 3	5 ± 4	10 ± 7	5 ± 4	12 ± 13	6 ± 5	9 ± 7	6 ± 7	5 ± 3	33 ± 28	12 ± 8
E1-2	06/06/06		< 3	< 4	< 8	< 3	< 7	< 4	< 7	< 4	< 4	< 26	< 9
MS-2	06/08/06	< 0.4	< 1	< 2	< 4	< 1	< 2	< 2	< 3	< 1	< 1	< 13	< 3
MS-5	06/08/06	< 0.5	< 0.3	< 0.5	< 1	< 0.3	< 1	< 0.5	< 1	< 0.3	< 0.4	< 12	< 3
MS-8	06/08/06	< 0.7	< 0.4	< 1	< 1	< 0.3	< 1	< 1	< 1	< 0.3	< 0.4	< 12	< 4
MS-20	06/08/06		< 0.4	< 1	< 1	< 0.4	< 1	< 1	< 1	< 0.3	< 0.4	< 11	< 4
MS-22	03/09/06		< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 1	< 9	< 12	< 4
N2-1	06/06/06		< 4	< 5	< 10	< 4	< 10	< 5	< 8	< 5	< 5	< 35	< 11
OS-14	06/09/06	< 0.7	< 0.4	< 0.4	< 1	< 0.3	< 1	< 1	< 1	< 0.3	< 0.3	< 11	< 3
RW-1	06/08/06		< 0.4	< 1	< 1	< 0.4	< 1	< 1	< 1	< 0.4	< 0.4	< 12	< 4
RW-2	06/08/06		< 0.4	< 1	< 1	< 0.4	< 1	< 1	< 1	< 0.3	< 0.4	< 13	< 4

TABLE C-VI.1 **CONCENTRATIONS OF STRONTIUM IN PREDATOR & BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-89	Sr-90
INDP	PREDATOR		
	06/15/06	< 32	< 3
	11/14/06	< 5	< 4
	MEAN	19 ± 39	4 ± 2
INDB	BOTTOM FEEDER		
	06/09/06	< 25	< 1
	11/06/06	< 5	< 5
	MEAN	15 ± 28	3 ± 5
BKGP	PREDATOR		
	06/12/06	< 34	< 4
	10/05/06	< 5	< 4
	MEAN	19 ± 40	4 ± 1
BKGB	BOTTOM FEEDER		
	06/12/06	< 18	< 2
	10/05/06	< 5	< 4
	MEAN	12 ± 19	3 ± 2

TABLE C-VI.2 **CONCENTRATIONS OF GAMMA EMITTERS IN PREDATOR & BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
INDP	PREDATOR								
	06/15 - 06/15/2006	3910 ± 802	< 62	< 84	< 198	< 93	< 210	< 82	< 83
	11/14 - 11/14/2006	3100 ± 781	< 45	< 45	< 113	< 28	< 63	< 38	< 46
	MEAN	3505 ± 1146	54 ± 25	65 ± 54	156 ± 120	60 ± 92	137 ± 207	60 ± 63	64 ± 52
INDB	BOTTOM FEEDER								
	06/09 - 06/09/2006	3560 ± 994	< 66	< 87	< 193	< 58	< 170	< 84	< 78
	11/06 - 11/06/2006	3250 ± 719	< 52	< 65	< 132	< 49	< 101	< 57	< 50
	MEAN	3405 ± 438	59 ± 20	76 ± 31	163 ± 86	53 ± 12	136 ± 98	70 ± 39	64 ± 40
BKGP	PREDATOR								
	06/12 - 06/12/2006	3790 ± 987	< 74	< 86	< 210	< 77	< 195	< 87	< 88
	10/05 - 10/05/2006	3820 ± 943	< 66	< 79	< 204	< 58	< 117	< 55	< 55
	MEAN	3805 ± 42	70 ± 11	82 ± 10	207 ± 8	68 ± 27	156 ± 110	71 ± 44	72 ± 46
BKGB	BOTTOM FEEDER								
	06/12 - 06/12/2006	2440 ± 642	< 83	< 93	< 184	< 70	< 192	< 91	< 82
	10/05 - 10/05/2006	2480 ± 1070	< 71	< 79	< 253	< 74	< 112	< 67	< 77
	MEAN	2460 ± 57	77 ± 17	86 ± 21	219 ± 98	72 ± 5	152 ± 113	79 ± 33	80 ± 8

TABLE C-VII.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Mn-54	Co-58	Co-60	Cs-134	Cs-137
A1-3							
	06/09/06	14200 ± 1220	< 104	< 118	< 103	< 138	< 104
	10/10/06	13400 ± 2290	< 123	< 82	< 109	< 105	< 155
	MEAN	13800 ± 1131	114 ± 27	100 ± 51	106 ± 8	122 ± 47	130 ± 72
J2-1							
	06/09/06	19800 ± 1750	< 122	< 146	< 109	< 132	< 120
	10/10/06	19600 ± 2840	< 121	< 160	< 136	< 136	< 147
	MEAN	19700 ± 283	122 ± 1	153 ± 20	123 ± 38	134 ± 6	134 ± 38
K1-3							
	06/09/06	12800 ± 1230	< 89	< 93	< 81	< 129	< 84
	10/10/06	12600 ± 2190	< 97	< 136	< 124	< 102	< 107
	MEAN	12700 ± 283	93 ± 11	115 ± 60	103 ± 61	116 ± 38	96 ± 33
EDCB							
	10/10/06	15400 ± 1580	< 83	< 107	< 109	< 79	219 ± 87

TABLE C-VIII.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

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

	GROUP I		GROUP II				GROUP III
COLLECTION PERIOD	E1-2	F1-3	A3-1	G2-1	H3-1	M2-1	Q15-1
12/28/05 - 01/04/06	18 ± 5	15 ± 5	19 ± 5	12 ± 5	15 ± 5	18 ± 5	15 ± 5
01/04/06 - 01/11/06	20 ± 5	20 ± 5	18 ± 5	18 ± 5	16 ± 5	22 ± 5	13 ± 5
01/11/06 - 01/18/06	15 ± 5	17 ± 5	16 ± 5	20 ± 5	18 ± 5	20 ± 9	17 ± 5
01/18/06 - 01/25/06	14 ± 5	21 ± 5	17 ± 5	16 ± 5	11 ± 5	13 ± 5	15 ± 5
01/25/06 - 02/01/06	16 ± 5	15 ± 5	20 ± 5	18 ± 5	16 ± 5	22 ± 5	20 ± 5
02/01/06 - 02/08/06	17 ± 5	20 ± 5	19 ± 5	17 ± 5	20 ± 5	19 ± 5	17 ± 5
02/08/06 - 02/15/06	18 ± 5	17 ± 5	13 ± 5	17 ± 5	18 ± 5	16 ± 5	16 ± 5
02/15/06 - 02/22/06	21 ± 5	24 ± 5	27 ± 5	22 ± 5	26 ± 5	21 ± 5	27 ± 5
02/22/06 - 03/01/06	16 ± 5	14 ± 5	15 ± 5	16 ± 5	18 ± 5	14 ± 5	18 ± 6
03/01/06 - 03/08/06	12 ± 5	11 ± 5	(1)	14 ± 5	16 ± 5	10 ± 5	11 ± 5
03/08/06 - 03/15/06	15 ± 5	14 ± 5	14 ± 5	15 ± 5	18 ± 5	17 ± 5	17 ± 5
03/15/06 - 03/22/06	12 ± 5	14 ± 5	< 21	15 ± 5	17 ± 5	11 ± 5	11 ± 5
03/22/06 - 03/29/06	10 ± 4	11 ± 4	11 ± 5	9 ± 5	12 ± 5	10 ± 5	15 ± 5
03/29/06 - 04/05/06	18 ± 5	15 ± 4	27 ± 8	20 ± 5	20 ± 5	18 ± 5	19 ± 5
04/05/06 - 04/12/06	14 ± 5	14 ± 5	< 16	13 ± 5	14 ± 5	17 ± 5	18 ± 5
04/12/06 - 04/19/06	11 ± 5	11 ± 5	17 ± 5	(1)	12 ± 5	14 ± 5	12 ± 5
04/19/06 - 04/25/06	10 ± 5	9 ± 5	< 9	12 ± 5	7 ± 5	< 7	12 ± 5
04/25/06 - 05/02/06	9 ± 5	7 ± 4	(1)	8 ± 5	12 ± 5	13 ± 5	10 ± 5
05/02/06 - 05/10/06	13 ± 4	16 ± 4	13 ± 5	17 ± 5	15 ± 4	13 ± 5	12 ± 5
05/10/06 - 05/17/06	7 ± 5	7 ± 4	< 8	< 7	< 7	8 ± 5	8 ± 5
05/17/06 - 05/24/06	7 ± 4	9 ± 4	< 7	9 ± 5	< 6	< 6	< 6
05/24/06 - 05/31/06	24 ± 5	18 ± 5	22 ± 5	19 ± 5	21 ± 5	21 ± 5	21 ± 5
05/31/06 - 06/07/06	12 ± 5	13 ± 5	14 ± 5	11 ± 5	11 ± 5	15 ± 5	13 ± 5
06/07/06 - 06/14/06	9 ± 4	9 ± 4	9 ± 4	14 ± 6	13 ± 5	12 ± 5	10 ± 5
06/14/06 - 06/21/06	20 ± 5	24 ± 5	22 ± 5	(1)	17 ± 5	19 ± 5	18 ± 5
06/21/06 - 06/27/06	11 ± 5	14 ± 5	31 ± 6	18 ± 6	11 ± 5	13 ± 5	13 ± 5
06/27/06 - 07/04/06	19 ± 5	18 ± 5	17 ± 5	22 ± 6	17 ± 5	19 ± 5	18 ± 5
07/04/06 - 07/12/06	26 ± 4	26 ± 4	27 ± 4	25 ± 5	27 ± 4	26 ± 4	27 ± 4
07/12/06 - 07/19/06	22 ± 5	22 ± 5	29 ± 6	(1)	24 ± 5	22 ± 5	29 ± 6
07/19/06 - 07/26/06	16 ± 5	18 ± 5	19 ± 5	(1)	18 ± 5	20 ± 6	18 ± 5
07/26/06 - 08/02/06	28 ± 6	25 ± 6	26 ± 6	(1)	34 ± 6	27 ± 6	30 ± 6
08/02/06 - 08/09/06	25 ± 5	22 ± 5	18 ± 5	23 ± 5	19 ± 5	20 ± 5	22 ± 5
08/09/06 - 08/16/06	21 ± 5	23 ± 5	20 ± 5	26 ± 7	19 ± 5	17 ± 5	22 ± 5
08/16/06 - 08/23/06	22 ± 5	19 ± 5	17 ± 5	19 ± 5	14 ± 5	20 ± 5	17 ± 5
08/23/06 - 08/30/06	18 ± 5	21 ± 5	26 ± 6	27 ± 6	21 ± 5	22 ± 5	19 ± 5
08/30/06 - 09/06/06	11 ± 5	9 ± 5	10 ± 5	10 ± 5	9 ± 5	13 ± 5	9 ± 5
09/06/06 - 09/13/06	24 ± 5	23 ± 5	26 ± 6	14 ± 5	24 ± 6	19 ± 5	22 ± 5
09/13/06 - 09/20/06	13 ± 5	20 ± 5	21 ± 5	13 ± 5	17 ± 5	16 ± 5	20 ± 5
09/20/06 - 09/27/06	18 ± 5	15 ± 5	21 ± 5	16 ± 5	22 ± 6	18 ± 5	19 ± 5
09/27/06 - 10/04/06	21 ± 5	15 ± 5	22 ± 5	18 ± 5	22 ± 5	20 ± 5	22 ± 5
10/04/06 - 10/11/06	19 ± 5	18 ± 5	18 ± 5	13 ± 5	15 ± 5	16 ± 5	21 ± 6
10/11/06 - 10/18/06	18 ± 5	19 ± 5	18 ± 5	20 ± 5	19 ± 5	17 ± 5	18 ± 5
10/18/06 - 10/25/06	14 ± 5	21 ± 5	17 ± 5	9 ± 5	16 ± 5	16 ± 5	15 ± 5
10/25/06 - 10/31/06	13 ± 5	9 ± 5	15 ± 5	8 ± 5	13 ± 5	12 ± 5	8 ± 5
10/31/06 - 11/07/06	25 ± 5	25 ± 5	23 ± 5	21 ± 5	27 ± 5	26 ± 5	25 ± 5
11/07/06 - 11/15/06	14 ± 5	15 ± 5	16 ± 5	17 ± 5	12 ± 4	13 ± 4	14 ± 5
11/15/06 - 11/21/06	16 ± 6	17 ± 6	10 ± 5	16 ± 6	16 ± 6	13 ± 6	21 ± 6
11/21/06 - 11/28/06	24 ± 5	25 ± 5	28 ± 6	18 ± 5	25 ± 5	23 ± 5	34 ± 6
11/28/06 - 12/06/06	28 ± 5	26 ± 5	28 ± 5	29 ± 5	27 ± 5	27 ± 5	27 ± 5
12/06/06 - 12/12/06	28 ± 6	29 ± 6	23 ± 6	25 ± 6	24 ± 6	24 ± 6	24 ± 6
12/12/06 - 12/20/06	24 ± 5	24 ± 5	23 ± 5	27 ± 5	23 ± 5	20 ± 5	24 ± 5
12/20/06 - 12/27/06	19 ± 5	23 ± 5	17 ± 5	19 ± 5	20 ± 5	18 ± 5	20 ± 5
12/27/06 - 01/03/07	19 ± 5	18 ± 5	19 ± 5	23 ± 5	19 ± 5	18 ± 5	26 ± 5
MEAN	17 ± 11	17 ± 11	19 ± 12	17 ± 11	18 ± 11	17 ± 10	18 ± 12

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VIII.2 MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS (E-3 PCI/CU METER) IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

GROUP I - CLOSEST TO THE SITE BOUNDARY				GROUP II - INTERMEDIATE OFFSITE				GROUP III - CONTROL LOCATIONS			
COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD	COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD	COLLECTION PERIOD	MIN.	MAX.	MEAN ± 2 SD
12/28/05 - 02/01/06	14	21	17 ± 5	12/28/05 - 02/01/06	11	22	17 ± 6	12/28/05 - 02/01/06	13	20	16 ± 5
02/01/06 - 03/01/06	14	24	18 ± 6	02/01/06 - 03/01/06	13	27	18 ± 8	02/01/06 - 03/01/06	16	27	20 ± 10
03/01/06 - 03/29/06	10	15	12 ± 4	03/01/06 - 03/29/06	< 9	21	14 ± 7	03/01/06 - 03/29/06	11	17	14 ± 6
03/29/06 - 05/02/06	7	18	12 ± 7	03/29/06 - 05/02/06	< 7	27	14 ± 10	03/29/06 - 05/02/06	10	19	14 ± 8
05/02/06 - 05/31/06	7	24	13 ± 13	05/02/06 - 05/31/06	< 6	22	12 ± 12	05/02/06 - 05/31/06	< 6	21	12 ± 13
05/31/06 - 06/27/06	9	24	14 ± 11	05/31/06 - 06/27/06	9	31	15 ± 11	05/31/06 - 06/27/06	10	18	13 ± 7
06/27/06 - 08/02/06	16	28	22 ± 8	06/27/06 - 08/02/06	17	34	24 ± 9	06/27/06 - 08/02/06	18	30	25 ± 12
08/02/06 - 08/30/06	18	25	21 ± 4	08/02/06 - 08/30/06	14	27	20 ± 7	08/02/06 - 08/30/06	17	22	20 ± 5
08/30/06 - 09/27/06	9	24	17 ± 11	08/30/06 - 09/27/06	9	26	17 ± 10	08/30/06 - 09/27/06	9	22	17 ± 11
09/27/06 - 10/31/06	9	21	17 ± 8	09/27/06 - 10/31/06	8	22	16 ± 7	09/27/06 - 10/31/06	8	22	17 ± 12
10/31/06 - 11/28/06	14	25	20 ± 10	10/31/06 - 11/28/06	10	28	19 ± 12	10/31/06 - 11/28/06	14	34	24 ± 17
11/28/06 - 01/03/07	18	29	24 ± 8	11/28/06 - 01/03/07	17	29	23 ± 7	11/28/06 - 01/03/07	20	27	24 ± 6
12/28/05 - 01/03/07	7	29	17 ± 8	12/28/05 - 01/03/07	< 6	34	18 ± 7	12/28/05 - 01/03/07	< 6	34	18 ± 9

TABLE C-VIII.3 CONCENTRATION OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

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

STC	COLLECTION PERIOD	Be-7	Mn-54	Co-58	Co-60	Cs-134	Cs-137
A3-1	12/28 - 03/29/06	< 96	< 4	< 2	< 4	< 3	< 4
	03/29 - 06/27/06	96 ± 71	< 3	< 10	< 3	< 3	< 3
	06/27 - 09/27/06	84 ± 27	< 2	< 3	< 3	< 2	< 2
	09/27 - 01/03/07	53 ± 18	< 1	< 2	< 1	< 1	< 2
	MEAN	82 ± 41	3 ± 3	4 ± 8	3 ± 2	2 ± 2	3 ± 2
E1-2	12/28 - 03/29/06	< 62	< 4	< 8	< 4	< 3	< 3
	03/29 - 06/27/06	< 97	< 3	< 6	< 3	< 2	< 2
	06/27 - 09/27/06	66 ± 39	< 2	< 3	< 2	< 2	< 2
	09/27 - 01/03/07	64 ± 19	< 3	< 2	< 2	< 3	< 2
	MEAN	72 ± 33	3 ± 2	5 ± 6	3 ± 2	3 ± 2	2 ± 1
F1-3	12/28 - 03/29/06	118 ± 53	< 5	< 9	< 4	< 3	< 4
	03/29 - 06/27/06	< 93	< 2	< 4	< 2	< 1	< 2
	06/27 - 09/27/06	74 ± 25	< 1	< 3	< 2	< 2	< 1
	09/27 - 01/03/07	47 ± 19	< 2	< 3	< 2	< 3	< 3
	MEAN	83 ± 60	3 ± 3	5 ± 6	2 ± 2	2 ± 1	2 ± 3
G2-1	12/28 - 03/29/06	114 ± 50	< 6	< 7	< 6	< 4	< 5
	03/29 - 06/27/06	< 106	< 3	< 8	< 3	< 2	< 3
	06/27 - 09/27/06	95 ± 46	< 3	< 5	< 4	< 3	< 2
	09/27 - 01/03/07	42 ± 33	< 3	< 3	< 3	< 3	< 3
	MEAN	89 ± 65	4 ± 3	6 ± 4	4 ± 3	3 ± 2	3 ± 3
H3-1	12/28 - 03/29/06	< 110	< 4	< 7	< 4	< 4	< 2
	03/29 - 06/27/06	143 ± 52	< 3	< 7	< 3	< 2	< 2
	06/27 - 09/27/06	88 ± 33	< 2	< 3	< 2	< 2	< 2
	09/27 - 01/03/07	61 ± 19	< 2	< 3	< 3	< 2	< 3
	MEAN	101 ± 69	3 ± 2	5 ± 5	3 ± 2	3 ± 2	2 ± 1
M2-1	12/28 - 03/29/06	< 85	< 6	< 9	< 8	< 4	< 4
	03/29 - 06/27/06	< 22	< 2	< 2	< 3	< 2	< 2
	06/27 - 09/27/06	80 ± 28	< 3	< 3	< 3	< 2	< 2
	09/27 - 01/03/07	64 ± 23	< 2	< 3	< 3	< 2	< 2
	MEAN	63 ± 57	3 ± 4	4 ± 7	4 ± 5	2 ± 2	3 ± 2
Q15-1	12/28 - 03/29/06	84 ± 48	< 6	< 9	< 7	< 3	< 5
	03/29 - 06/27/06	< 94	< 3	< 5	< 4	< 2	< 2
	06/27 - 09/27/06	83 ± 37	< 3	< 3	< 3	< 2	< 2
	09/27 - 01/03/07	55 ± 20	< 2	< 2	< 3	< 2	< 2
	MEAN	79 ± 33	3 ± 4	5 ± 6	4 ± 4	2 ± 1	3 ± 3

TABLE C-IX.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

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

	GROUP I		GROUP II				GROUP III
COLLECTION PERIOD	E1-2	F1-3	A3-1	G2-1	H3-1	M2-1	Q15-1
12/28/05 - 01/04/06	< 23	< 23	< 21.4	< 25	< 24	< 21	< 22
01/04/06 - 01/11/06	< 31	< 31	< 32.9	< 33	< 31	< 33	< 34
01/11/06 - 01/18/06	< 32	< 32	< 25.2	< 34	< 33	< 53	< 26
01/18/06 - 01/25/06	< 32	< 31	< 37.7	< 34	< 18	< 44	< 39
01/25/06 - 02/01/06	< 38	< 37	< 32.3	< 40	< 38	< 33	< 33
02/01/06 - 02/08/06	< 30	< 30	< 30.7	< 32	< 30	< 31	< 31
02/08/06 - 02/15/06	< 51	< 50	< 41.3	< 54	< 51	< 37	< 37
02/15/06 - 02/22/06	< 28	< 28	< 24.8	< 30	< 28	< 25	< 25
02/22/06 - 03/01/06	< 39	< 38	< 44.5	< 41	< 39	< 45	< 45
03/01/06 - 03/08/06	< 40	< 39	(1)	< 42	< 40	< 44	< 44
03/08/06 - 03/15/06	< 23	< 23	< 31.1	< 24	< 23	< 31	< 32
03/15/06 - 03/22/06	< 37	< 37	< 104 (1)	< 39	< 21	< 33	< 34
03/22/06 - 03/29/06	< 44	< 43	< 55.1	< 46	< 44	< 56	< 56
03/29/06 - 04/05/06	< 26	< 25	< 55.1	< 27	< 32	< 34	< 34
04/05/06 - 04/12/06	< 45	< 44	< 69.1	< 47	< 45	< 27	< 28
04/12/06 - 04/19/06	< 44	< 44	< 39.9	(1)	< 45	< 41	< 41
04/19/06 - 04/25/06	< 48	< 47	< 48.1	< 51	< 48	< 38	< 39
04/25/06 - 05/02/06	< 33	< 33	(1)	< 35	< 48	< 49	< 50
05/02/06 - 05/10/06	< 52	< 51	< 48.3	< 41	< 52	< 43	< 44
05/10/06 - 05/17/06	< 47	< 47	< 61.2	< 50	< 48	< 56	< 56
05/17/06 - 05/24/06	< 63	< 62	< 66.5	< 69	< 65	< 59	< 60
05/24/06 - 05/31/06	< 58	< 57	< 59.5	< 61	< 57	< 60	< 61
05/31/06 - 06/07/06	< 65	< 64	< 63.1	< 69	< 62	< 63	< 64
06/07/06 - 06/14/06	< 52	< 51	< 62.3	< 56	< 52	< 63	< 64
06/14/06 - 06/21/06	< 45	< 44	< 42.9	(1)	< 45	< 43	< 44
06/21/06 - 06/27/06	< 39	< 30	< 48.9	< 41	< 38	< 39	< 49
06/27/06 - 07/04/06	< 38	< 38	< 57	< 40	< 38	< 58	< 59
07/04/06 - 07/12/06	< 35	< 43	< 39.9	< 55	< 44	< 40	< 40
07/12/06 - 07/19/06	< 68	< 68	< 60.9	(1)	< 70	< 62	< 61
07/19/06 - 07/26/06	< 63	< 63	< 67.1	(1)	< 63	< 66	< 66
07/26/06 - 08/02/06	< 44	< 44	< 48.1	(1)	< 45	< 49	< 48
08/02/06 - 08/09/06	< 38	< 38	< 33.8	< 40	< 43	< 42	< 42
08/09/06 - 08/16/06	< 45	< 45	< 46.5	< 63	< 46	< 47	< 46
08/16/06 - 08/23/06	< 34	< 27	< 46	< 34	< 47	< 46	< 45
08/23/06 - 08/30/06	< 56	< 55	< 55	< 57	< 57	< 55	< 54
08/30/06 - 09/06/06	< 60	< 60	< 69.5	< 61	< 60	< 70	< 69
09/06/06 - 09/13/06	< 64	< 64	< 51.2	< 66	< 65	< 52	< 51
09/13/06 - 09/20/06	< 38	< 38	< 38.3	< 39	< 39	< 38	< 38
09/20/06 - 09/27/06	< 68	< 68	< 63.9	< 70	< 65	< 64	< 64
09/27/06 - 10/04/06	< 35	< 34	< 34.4	< 35	< 30	< 30	< 29
10/04/06 - 10/11/06	< 59	< 58	< 64.5	< 60	< 59	< 65	< 64
10/11/06 - 10/18/06	< 48	< 48	< 62.7	< 49	< 63	< 63	< 62
10/18/06 - 10/25/06	< 48	< 47	< 63.8	< 49	< 39	< 47	< 63
10/25/06 - 10/31/06	< 53	< 53	< 68	< 54	< 53	< 68	< 67
10/31/06 - 11/07/06	< 47	< 47	< 51.4	< 48	< 52	< 52	< 51
11/07/06 - 11/15/06	< 32	< 32	< 29.3	< 33	< 30	< 29	< 29
11/15/06 - 11/21/06	< 69	< 68	< 65.8	< 70	< 69	< 66	< 65
11/21/06 - 11/28/06	< 57	< 57	< 47	< 58	< 57	< 49	< 48
11/28/06 - 12/06/06	< 38	< 38	< 40.3	< 29	< 39	< 39	< 39
12/06/06 - 12/12/06	< 57	< 57	< 66.9	< 59	< 58	< 67	< 66
12/12/06 - 12/20/06	< 35	< 35	< 15	< 31	< 30	< 30	< 30
12/20/06 - 12/27/06	< 43	< 42	< 39.8	< 43	< 41	< 40	< 39
12/27/06 - 01/03/07	< 35	< 34	< 42.9	< 35	< 35	< 43	< 43
MEAN	45 ± 25	44 ± 25	49 ± 33	46 ± 26	45 ± 26	47 ± 26	47 ± 27

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-X.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

	CONTROL FARM	INDICATOR FARMS			
COLLECTION PERIOD	K15-3	D2-1	E2-2	F4-1	G2-1
01/04/06	< 0.4	< 0.3	< 0.4		< 0.4
02/01/06	< 0.3	< 0.2	< 0.4		< 0.3
03/01/06	< 0.6	< 0.3	< 0.6		< 0.5
03/15/06	< 0.6	< 0.3	< 0.6		< 0.4
03/29/06	< 0.6	< 0.5	< 0.4	< 0.3	< 0.4
04/12/06	< 0.6	< 1.0	< 0.9		< 0.9
04/26/06	< 0.5	< 0.3	< 0.6		< 0.5
05/10/06	< 0.4	< 0.4	< 0.4		< 0.4
05/24/06	< 0.3	< 0.4	< 0.2		< 0.2
06/07/06	< 1.8 (1)	< 1.0	< 1.2 (1)		< 1.2 (1)
06/21/06	< 0.8	< 0.8	< 0.9	< 0.7	< 1.2 (1)
07/05/06	< 0.5	< 0.4	< 0.6		< 0.4
07/19/06	< 0.6	< 0.7	< 0.6		< 0.8
08/02/06	< 0.7	< 0.6	< 0.6		< 0.6
08/16/06	< 0.3	< 0.3	< 0.5		< 0.4
08/30/06	< 0.4	< 0.8	< 0.6		< 0.4
09/13/06	< 0.2	< 0.2	< 0.2		< 0.2
09/27/06	< 0.5	< 0.3	< 0.3	< 0.4	< 0.4
10/11/06	< 0.6	< 0.5	< 0.5		< 0.5
10/25/06	< 0.6	< 0.4	< 0.7		< 0.5
11/07/06	< 0.4	< 0.6	< 0.5		< 0.6
11/21/06	< 0.9	< 0.8	< 0.7		< 0.6
12/06/06	< 0.4	< 0.3	< 0.4	< 0.4	< 0.3
MEAN	0.6 ± 0.5	0.5 ± 0.4	0.6 ± 0.4	0.5 ± 0.5	0.5 ± 0.5

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-X.2 CONCENTRATIONS OF STRONTIUM IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CONTROL FARM K15-3		INDICATOR FARMS D2-1		E2-2		F4-1		G2-1	
	Sr-89	Sr-90	Sr-89	Sr-90	Sr-89	Sr-90	Sr-89	Sr-90	Sr-89	Sr-90
01/04/06 - 03/29/06	< 3.5	< 0.8	< 3.4	< 0.8	< 3.9	< 0.9	< 1.5	1.0 ± 0.4	< 3.9	< 0.8
03/29/06 - 06/21/06	< 2.9	< 0.6	< 4.4	2.9 ± 0.6	< 3.8	1.2 ± 0.5	< 5.0	< 0.8	< 3.1	0.6 ± 0.3
07/05/06 - 09/27/06	< 3.8	< 0.8	< 2.9	< 0.5	< 3.7	0.8 ± 0.5	< 4.6	0.9 ± 0.6	< 4.7	< 0.8
10/11/06 - 12/06/06	< 2.6	0.5 ± 0.3	< 4.5	< 0.7	< 3.7	< 0.5	< 4.5	0.9 ± 0.5	< 4.0	< 0.6
MEAN	3.2 ± 1.1	0.7 ± 0.3	3.8 ± 1.6	1.2 ± 2.3	3.8 ± 0.2	0.9 ± 0.6	3.9 ± 3.2	0.9 ± 0.1	3.9 ± 1.3	0.7 ± 0.3

TABLE C-X.3 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137	Ba-140	La-140
D2-1	01/04/06	1310 ± 150	< 4	< 4	< 19	< 4
	02/01/06	1240 ± 138	< 9	< 8	< 32	< 9
	03/01/06	1220 ± 138	< 9	< 8	< 33	< 11
	03/15/06	1370 ± 158	< 10	< 9	< 37	< 12
	03/29/06	1380 ± 207	< 11	< 13	< 42	< 13
	04/12/06	1310 ± 49.6	< 3	< 3	< 13	< 4
	04/26/06	1140 ± 138	< 9	< 9	< 35	< 12
	05/10/06	1220 ± 150	< 10	< 9	< 42	< 13
	05/24/06	1510 ± 66.8	< 4	< 4	< 40	< 12
	06/07/06	1240 ± 73.9	< 4	< 4	< 37	< 11
	06/21/06	1200 ± 119	< 10	< 10	< 43	< 14
	07/05/06	1280 ± 177	< 13	< 11	< 42	< 15
	07/19/06	1350 ± 157	< 8	< 8	< 39	< 11
	08/02/06	1400 ± 148	< 6	< 6	< 35	< 8
	08/16/06	1490 ± 203	< 8	< 9	< 42	< 10
	08/30/06	1420 ± 196	< 7	< 9	< 39	< 10
	09/13/06	1160 ± 137	< 6	< 6	< 30	< 12
	09/27/06	1200 ± 121	< 4	< 6	< 25	< 6
	10/11/06	1220 ± 109	< 4	< 4	< 48	< 13
	10/25/06	1360 ± 105	< 4	< 4	< 44	< 15
	11/07/06	1390 ± 113	< 3	< 3	< 53	< 15
	11/21/06	1310 ± 124	< 3	< 4	< 43	< 14
	12/06/06	1390 ± 148	< 5	< 5	< 27	< 11
	MEAN	1309 ± 204	7 ± 6	7 ± 6	36 ± 19	11 ± 6
E2-2	01/04/06	1260 ± 144	< 10	< 9	< 37	< 11
	02/01/06	1170 ± 142	< 10	< 10	< 37	< 11
	03/01/06	1270 ± 136	< 8	< 7	< 29	< 8
	03/15/06	1280 ± 137	< 10	< 9	< 39	< 13
	03/29/06	1280 ± 156	< 10	< 9	< 38	< 14
	04/12/06	1270 ± 43.3	< 3	< 2	< 11	< 3
	04/26/06	1120 ± 134	< 10	< 9	< 36	< 11
	05/10/06	1290 ± 134	< 11	< 9	< 40	< 14
	05/24/06	1340 ± 62	< 4	< 4	< 34	< 10
	06/07/06	1400 ± 76.6	< 4	< 4	< 39	< 12
	06/21/06	1450 ± 161	< 9	< 10	< 46	< 14
	07/05/06	1410 ± 212	< 14	< 12	< 57	< 11
	07/19/06	1430 ± 137	< 8	< 8	< 39	< 13
	08/02/06	1400 ± 140	< 5	< 6	< 34	< 12
	08/16/06	1070 ± 165	< 7	< 8	< 35	< 14
	08/30/06	1260 ± 160	< 7	< 7	< 41	< 14
	09/13/06	1340 ± 141	< 5	< 7	< 33	< 11
	09/27/06	1160 ± 159	< 6	< 7	< 28	< 10
	10/11/06	1360 ± 116	< 4	< 4	< 49	< 15
	10/25/06	1390 ± 146	< 5	< 6	< 59	< 14
	11/07/06	1340 ± 109	< 4	< 4	< 60	< 14
	11/21/06	1390 ± 96.7	< 4	< 4	< 44	< 15
	12/06/06	1150 ± 156	< 6	< 7	< 43	< 12
	MEAN	1297 ± 212	7 ± 6	7 ± 5	39 ± 21	12 ± 5

TABLE C-X.3 **CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137	Ba-140	La-140
F4-1	03/29/06	1480 ± 189	< 11	< 11	< 44	< 13
	06/21/06	1390 ± 172	< 11	< 10	< 49	< 12
	09/27/06	1350 ± 149	< 6	< 8	< 34	< 7
	12/06/06	1230 ± 191	< 7	< 7	< 40	< 13
	MEAN	1363 ± 207	9 ± 6	9 ± 4	42 ± 12	11 ± 6
G2-1	01/04/06	1170 ± 126	< 9	< 8	< 30	< 10
	02/01/06	1170 ± 157	< 13	< 10	< 43	< 13
	03/01/06	1250 ± 149	< 10	< 11	< 44	< 12
	03/15/06	1220 ± 127	< 8	< 8	< 33	< 9
	03/29/06	1310 ± 165	< 11	< 9	< 44	< 13
	04/12/06	1230 ± 47.7	< 3	< 3	< 13	< 4
	04/26/06	1220 ± 127	< 9	< 8	< 32	< 9
	05/10/06	1220 ± 52.2	< 3	< 3	< 29	< 9
	05/24/06	1150 ± 62.8	< 3	< 4	< 33	< 11
	06/07/06	1270 ± 73.4	< 4	< 4	< 35	< 10
	06/21/06	1260 ± 148	< 9	< 9	< 40	< 14
	07/05/06	1470 ± 144	< 10	< 8	< 35	< 10
	07/19/06	1280 ± 123	< 8	< 7	< 36	< 13
	08/02/06	1310 ± 203	< 8	< 8	< 59	< 14
	08/16/06	1440 ± 195	< 7	< 8	< 28	< 7
	08/30/06	1270 ± 167	< 6	< 8	< 36	< 8
	09/13/06	1260 ± 134	< 5	< 7	< 37	< 10
	09/27/06	1340 ± 193	< 6	< 8	< 25	< 9
	10/11/06	1320 ± 130	< 5	< 6	< 53	< 14
	10/25/06	1250 ± 104	< 3	< 4	< 40	< 15
	11/07/06	1110 ± 101	< 4	< 4	< 58	< 14
	11/21/06	1290 ± 107	< 3	< 4	< 46	< 14
	12/06/06	1310 ± 142	< 5	< 6	< 31	< 10
	MEAN	1264 ± 169	7 ± 6	7 ± 5	38 ± 21	11 ± 6
K15-3	01/04/06	1300 ± 150	< 10	< 9	< 34	< 11
	02/01/06	1370 ± 130	< 8	< 7	< 31	< 9
	03/01/06	1530 ± 136	< 9	< 8	< 34	< 7
	03/15/06	1270 ± 150	< 11	< 9	< 39	< 12
	03/29/06	1410 ± 191	< 12	< 12	< 41	< 13
	04/12/06	1350 ± 41.4	< 2	< 2	< 9	< 3
	04/26/06	1480 ± 144	< 10	< 9	< 38	< 12
	05/10/06	1430 ± 139	< 8	< 9	< 40	< 13
	05/24/06	1310 ± 80.8	< 5	< 4	< 40	< 11
	06/07/06	1270 ± 85.3	< 4	< 4	< 36	< 10
	06/21/06	1410 ± 201	< 12	< 11	< 50	< 15
	07/05/06	1500 ± 141	< 11	< 11	< 44	< 14
	07/19/06	1330 ± 91	< 4	< 5	< 22	< 7
	08/02/06	1220 ± 221	< 9	< 9	< 57	< 12
	08/16/06	1280 ± 181	< 6	< 7	< 33	< 9
	08/30/06	1400 ± 151	< 6	< 8	< 34	< 11
	09/13/06	1380 ± 145	< 6	< 6	< 41	< 11
	09/27/06	1280 ± 162	< 6	< 6	< 30	< 8
	10/11/06	1300 ± 113	< 4	< 4	< 48	< 15
	10/25/06	1340 ± 109	< 3	< 4	< 38	< 12
	11/07/06	1300 ± 101	< 4	< 4	< 57	< 14
	11/21/06	1290 ± 107	< 4	< 5	< 44	< 15
	12/06/06	1300 ± 135	< 6	< 6	< 30	< 7
	MEAN	1350 ± 162	7 ± 6	7 ± 5	38 ± 21	11 ± 6

TABLE C-XI.1 **CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-90	K-40	I-131	Cs-134	Cs-137
B10-2 Tomatoes	07/27/06		2270 ± 115	< 40	< 5	< 5
B10-2 Sweet Corn	07/27/06		2250 ± 86	< 27	< 3	< 4
B10-2 Corn Leaf	08/10/06	< 3	3120 ± 365	< 32	< 18	< 20
B10-2 Red Beets	08/21/06		3870 ± 142	< 56	< 3	< 4
	MEAN		2878 ± 1552	39 ± 25	7 ± 14	8 ± 16
E1-2 Tomatoes	07/27/06		2240 ± 93.7	< 33	< 4	< 4
E1-2 Sweet Corn	07/27/06		2820 ± 122	< 40	< 5	< 5
E1-2 Corn Leaf	08/10/06	< 2	5060 ± 147	< 30	< 5	< 5
	MEAN		3373 ± 2978	34 ± 10	5 ± 1	5 ± 1
H1-2 Red Beets	08/21/06		4830 ± 141	< 55	< 3	< 3
	MEAN		4830	55	3	3
ESE1 Elephant Ear Leaves	10/10/06	< 3	6710 ± 727	< 58	< 19	< 31
ESE2 Grape Leaves	10/10/06		1860 ± 416	< 48	< 18	< 22
ESE3	10/10/06	6 ± 3	6300 ± 538	< 46	< 18	< 20
	MEAN	5 ± 3	4957 ± 5379	51 ± 13	18 ± 2	24 ± 12

TABLE C-XII.1 QUARTERLY TLD RESULTS FOR THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. MONTH

STATION CODE	MEAN ± 2 S. D.	01/13 - 04/14/06	04/14 - 07/14/06	07/14 - 10/21/06	10/21 - 01/12/07
A1-4	5.4 ± 0.8	5.3	5.0	5.9	5.3
A3-1	6.1 ± 0.6	5.7	6.1	6.4	6.0
A5-1	6.6 ± 0.5	6.9	6.5	6.7	6.3
A9-3	5.6 ± 0.4	5.4	5.5	5.9	5.7
B1-1	5.7 ± 0.4	5.4	5.6	5.9	5.8
B1-2	5.6 ± 0.3	5.5	5.6	5.8	5.6
B2-1	5.6 ± 0.3	5.4	5.6	5.8	5.6
B5-1	6.5 ± 0.7	6.3	6.3	7.0	6.4
B10-1	6.2 ± 0.9	5.9	5.8	6.8	6.2
C1-1	6.2 ± 0.9	6.0	5.8	6.8	6.1
C1-2	5.5 ± 0.6	5.2	5.2	5.8	5.7
C2-1	6.4 ± 1.8	6.1	5.8	7.7	5.9
C5-1	6.5 ± 0.9	6.1	6.4	7.1	6.2
C8-1	6.7 ± 0.7	6.4	6.6	7.2	6.5
D1-1	5.7 ± 0.5	5.5	5.6	6.0	5.5
D1-2	6.2 ± 0.9	6.2	5.9	6.8	5.8
D2-2	7.2 ± 0.7	7.1	7.1	7.7	6.9
D6-1	7.2 ± 0.8	6.9	7.0	7.8	7.0
D15-1	6.6 ± 0.8	6.3	6.3	7.0	6.9
E1-2	5.7 ± 0.6	5.5	5.5	6.1	5.6
E1-4	5.4 ± 0.5	5.6	5.2	5.7	5.2
E2-3	6.8 ± 0.4	6.6	6.9	7.1	6.7
E5-1	6.0 ± 0.4	5.9	5.7	6.1	6.1
E7-1	6.5 ± 0.8	6.0	6.4	7.0	6.4
F1-1	6.1 ± 0.9	5.8	5.8	6.7	6.0
F1-2	5.9 ± 0.5	5.7	5.7	6.2	5.8
F1-4	5.5 ± 0.5	5.4	5.4	5.8	5.2
F2-1	6.9 ± 0.8	6.8	6.5	7.4	6.7
F5-1	7.1 ± 0.8	6.7	7.0	7.7	7.0
F10-1	7.6 ± 0.6	7.2	7.8	7.6	7.8
F25-1	6.5 ± 0.1	6.5	6.6	6.5	6.5
G1-2	6.3 ± 0.7	6.1	6.5	6.7	6.0
G1-3	5.4 ± 0.9	5.1	5.1	6.0	5.5
G1-5	5.6 ± 0.7	5.3	5.5	6.1	5.6
G1-6	5.9 ± 0.2	5.9	6.0	5.8	5.9
G2-4	7.4 ± 0.6	7.3	7.0	7.6	7.6
G5-1	6.0 ± 0.6	5.8	5.7	6.4	5.9
G10-1	8.5 ± 0.7	8.6	8.1	8.9	8.3
G15-1	6.7 ± 0.5	6.4	6.6	7.0	6.8
H1-1	6.1 ± 0.6	5.9	5.9	6.5	6.1
H3-1	5.2 ± 0.8	4.8	5.1	5.8	5.2
H5-1	5.4 ± 0.5	5.2	5.2	5.7	5.3
H8-1	9.2 ± 1.5	8.5	9.2	10.2	8.9
H15-1	5.4 ± 0.5	5.2	5.2	5.7	5.3
J1-1	5.6 ± 0.6	5.5	5.4	6.0	5.4

TABLE C-XII.1 QUARTERLY TLD RESULTS FOR THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. MONTH

STATION CODE	MEAN ± 2 S. D.	01/13 - 04/14/05	04/14 - 07/14/05	07/14 - 10/13/05	10/13 - 01/13/06
J1-3	5.2 ± 0.7	5.1	4.8	5.6	5.3
J3-1	6.1 ± 1.0	5.8	5.6	6.7	6.2
J5-1	6.8 ± 1.0	6.7	6.3	7.5	6.7
J7-1	7.3 ± 1.3	6.6	7.0	7.7	8.0
J15-1	7.0 ± 0.8	6.9	6.9	7.6	6.7
K1-4	5.8 ± 0.4	5.7	5.8	6.1	5.6
K2-1	6.7 ± 0.4	6.4	6.8	6.9	6.7
K3-1	5.8 ± 0.8	5.4	6.1	6.1	5.4
K5-1	6.9 ± 0.6	6.6	7.0	7.2	6.7
K8-1	6.6 ± 0.7	6.3	6.7	7.0	6.3
K15-1	6.3 ± 0.5	6.2	6.4	6.6	6.0
L1-1	6.1 ± 0.8	5.8	6.1	6.6	5.7
L1-2	5.6 ± 0.4	5.4	5.6	5.8	5.4
L2-1	6.3 ± 0.8	6.0	6.4	6.8	6.0
L5-1	5.9 ± 0.4	5.9	6.0	6.1	5.6
L8-1	6.4 ± 0.6	6.2	6.5	6.7	6.1
L15-1	6.4 ± 0.5	6.1	6.4	6.7	6.4
M1-1	5.7 ± 0.9	5.8	5.8	6.2	5.1
M1-2	6.2 ± 1.1	5.5	6.3	6.8	6.0
M2-1	5.5 ± 0.4	5.3	5.6	5.7	5.3
M5-1	6.0 ± 0.8	5.4	6.2	6.3	6.0
M9-1	7.3 ± 1.7	6.2	7.6	8.2	7.0
N1-1	5.6 ± 1.4	4.7	5.7	6.4	5.6
N1-3	5.7 ± 0.8	5.3	6.0	6.1	5.4
N2-1	6.2 ± 1.4	5.2	6.4	6.8	6.3
N5-1	5.2 ± 1.5	4.1	5.6	5.8	5.4
N8-1	6.4 ± 1.4	5.4	6.7	7.0	6.3
N15-2	6.7 ± 1.5	5.7	7.0	7.4	6.6
P1-1	5.8 ± 1.6	4.6	6.1	6.4	6.0
P1-2	5.6 ± 0.5	5.6	5.3	5.9	5.5
P2-1	6.7 ± 1.5	5.8	7.1	7.5	6.5
P5-1	5.5 ± 1.3	4.8	5.8	(1)	6.0
P8-1	5.2 ± 1.2	4.4	5.1	5.9	5.3
Q1-1	5.8 ± 1.4	4.9	5.7	6.6	6.0
Q1-2	5.1 ± 0.9	4.5	4.9	5.3	5.5
Q2-1	5.4 ± 1.3	4.5	5.3	6.0	5.6
Q5-1	5.1 ± 1.3	4.7	5.5	4.4	5.8
Q9-1	5.9 ± 1.0	5.2	5.7	6.3	6.2
Q15-1	6.3 ± 1.2	5.4	6.4	6.7	6.5
R1-1	5.3 ± 1.1	4.7	5.2	6.0	5.4
R1-2	5.3 ± 1.1	4.6	5.3	5.8	5.6
R3-1	6.6 ± 0.9	6.0	6.8	7.0	6.5
R5-1	6.4 ± 1.0	5.7	6.6	6.8	6.5
R9-1	6.2 ± 1.1	5.4	6.4	6.7	6.3
R15-1	5.1 ± 2.4	4.8	5.8	6.3	3.6

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-XII.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, OFFSITE AND CONTROL LOCATIONS FOR THREE MILE ISLAND NUCLEAR STATION, 2006

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

STATION CODE	SITE BOUNDARY ± 2 S. D.	OFFSITE	CONTROL
JAN-MAR	5.4 ± 0.7	5.8 ± 1.7	6.4 ± 2.0
APR-JUN	5.5 ± 0.8	6.2 ± 1.5	6.7 ± 1.2
JUL-SEP	6.0 ± 0.6	6.7 ± 1.7	7.3 ± 2.1
OCT-DEC	5.5 ± 0.5	6.2 ± 1.4	6.5 ± 2.3

TABLE C-XII.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. MONTH

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S. D.	PRE-OP MEAN ± 2 S. D.
SITE BOUNDARY	80	4.5	6.6	5.6 ± 0.8	4.8 ± 1.5
OFFSITE	235	4.1	10.2	6.2 ± 1.7	5.2 ± 1.5
CONTROL	44	3.6	8.9	6.7 ± 2.0	5.8 ± 1.7

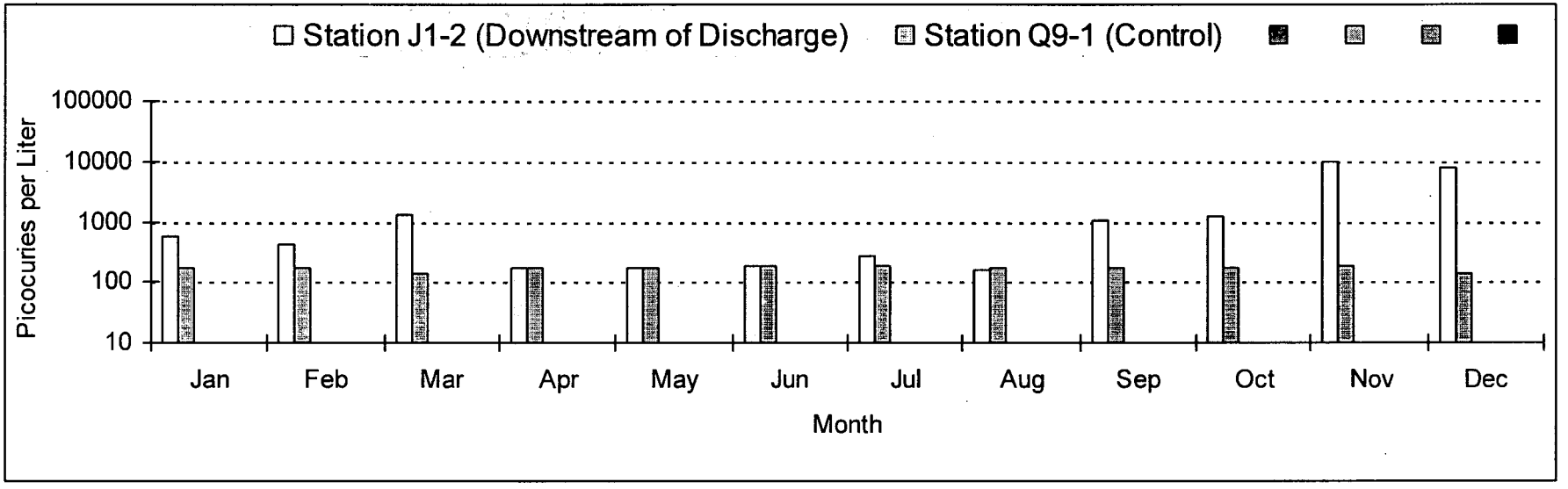
THE PRE-OPERATIONAL MEAN WAS CALCULATED FROM MONTHLY TLD READINGS 1980 TO 1985.

SITE BOUNDARY STATIONS - A1-4, B1-1, B1-2, C1-2, D1-1, E1-4, F1-2, F1-4, G1-3, G1-5, G1-6, H1-1, J1-1, J1-3, K1-4, L1-1, M1-1, N1-3, P1-2, Q1-2, R1-1

OFFSITE STATIONS - A3-1, A5-1, A9-3, B2-1, B5-1, B10-1, C1-1, C2-1, C5-1, C8-1, D1-2, D2-2, D6-1, E1-2, E2-3, E5-1, E7-1, F1-1, F2-1, F5-1, F10-1, G1-2, G2-4, G5-1, H3-1, H5-1, H8-1, J3-1, J5-1, J7-1, K2-1, K3-1, K5-1, K8-1, L1-2, L2-1, L5-1, L8-1, M1-2, M2-1, M5-1, M9-1, N1-1, N2-1, N5-1, N8-1, P1-1, P2-1, P5-1, P8-1, Q1-1, Q2-1, Q5-1, Q9-1, R1-2, R3-1, R5-1, R9-1

CONTROL STATIONS - D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, R15-1

FIGURE C-1
Monthly Tritium Concentrations in Surface Water and Effluent Water
Three Mile Island Nuclear Station, 2006



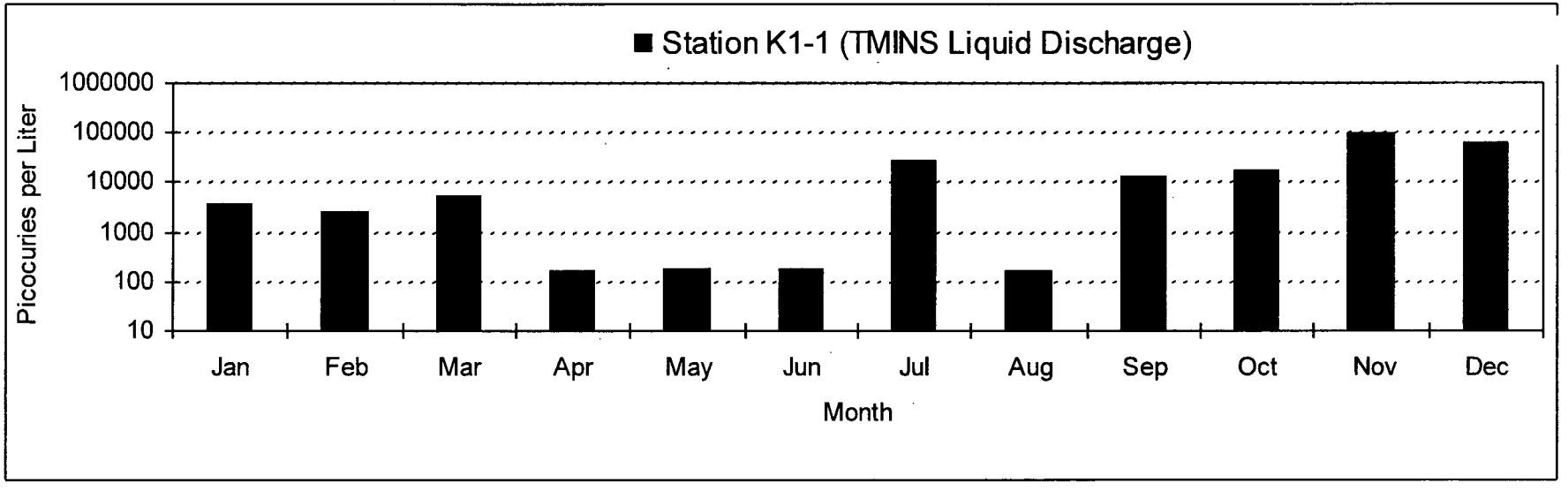


FIGURE C-2
Mean Quarterly Tritium Concentrations in Surface Water
Three Mile Island Nuclear Station, 1974 - 2006

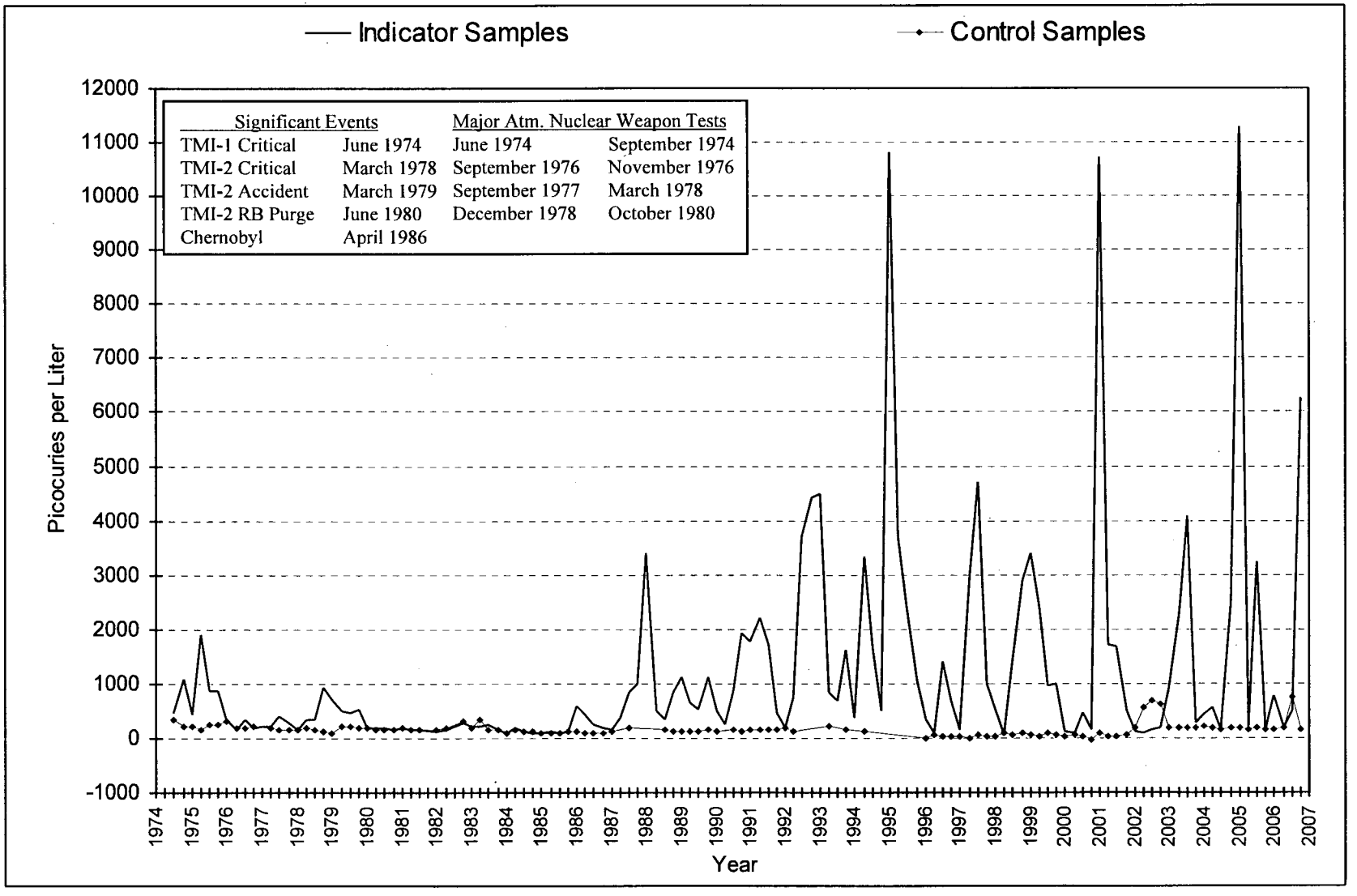


FIGURE C-3
Mean Monthly Gross Beta Concentrations in Drinking Water
Three Mile Island Nuclear Station, 2006

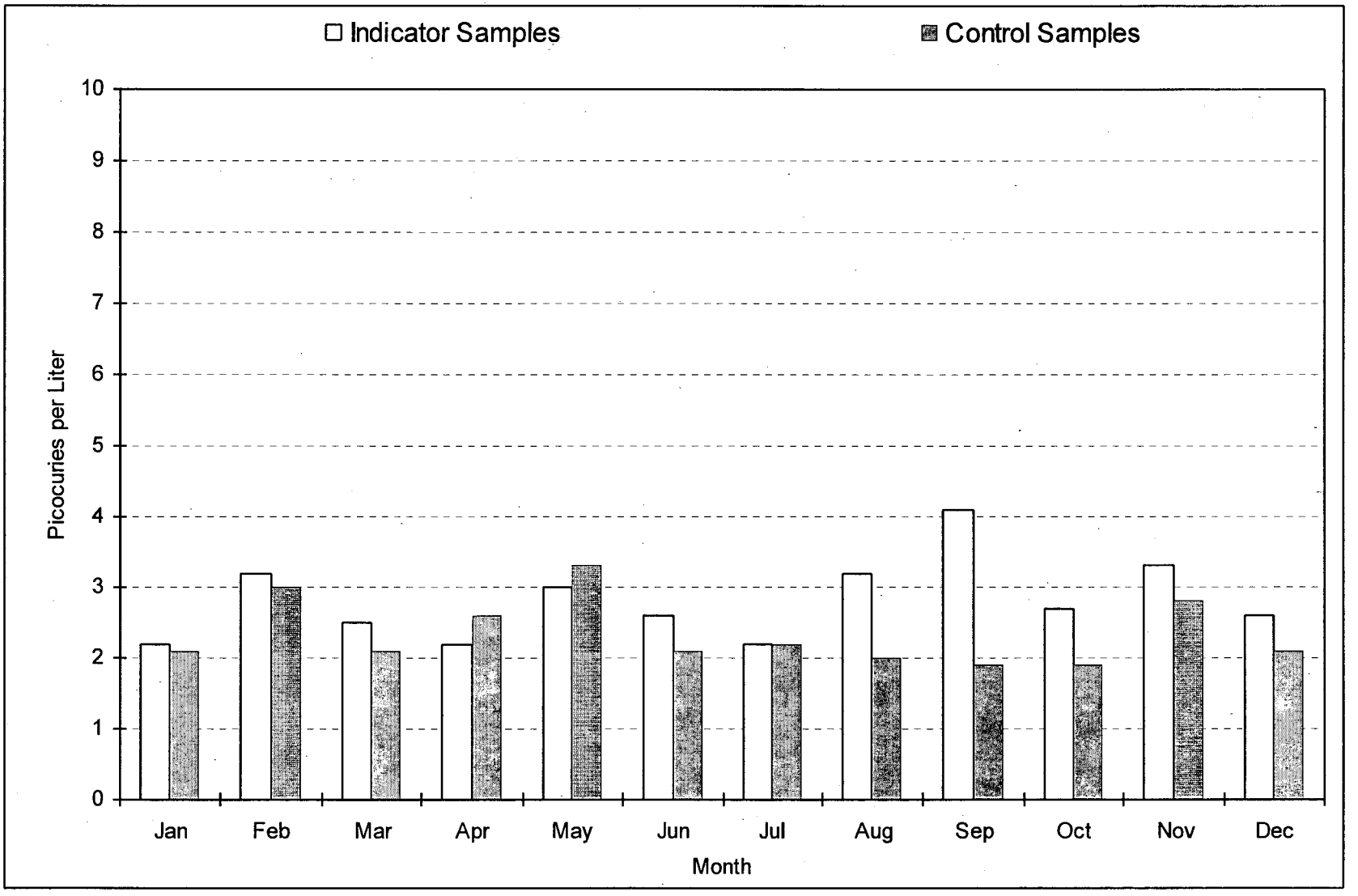
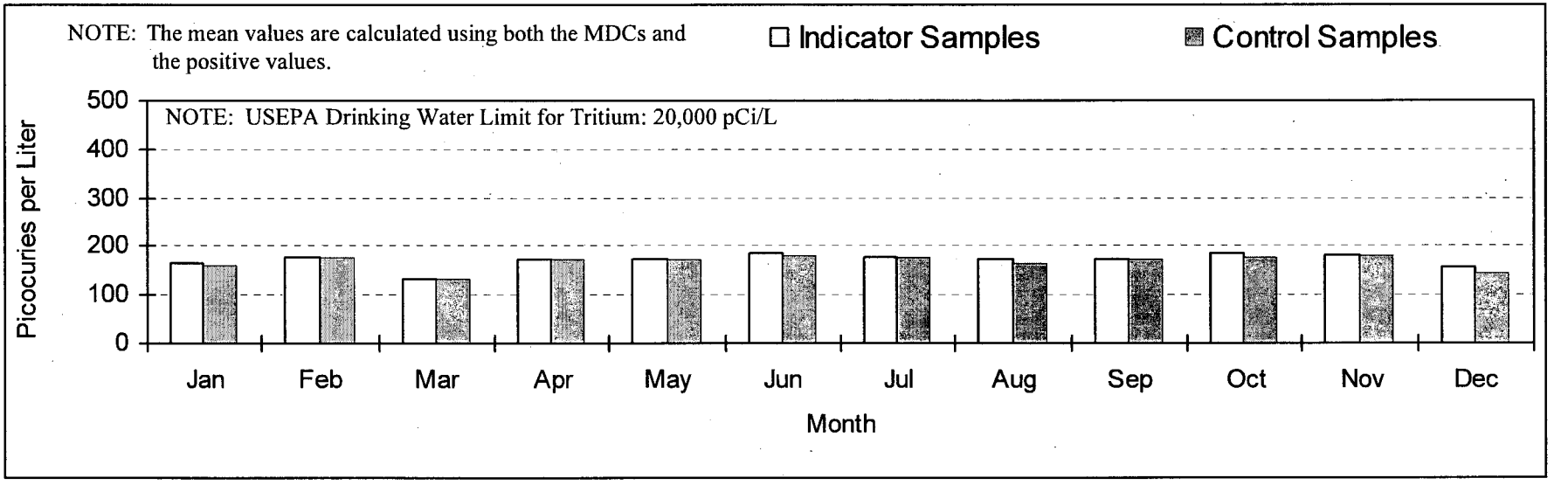


FIGURE C-4

Mean Monthly Tritium Concentrations in Drinking Water and Effluent Water

Three Mile Island Nuclear Station, 2006



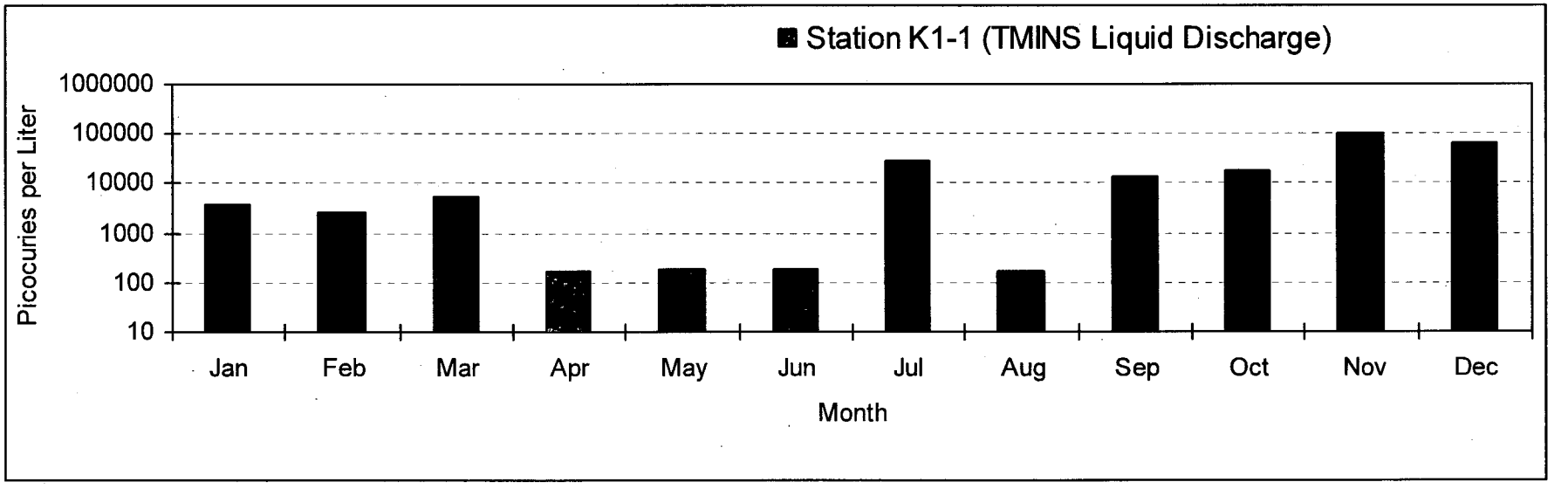


FIGURE C-5
Mean Cesium-137 Concentrations in Aquatic Sediments
Three Mile Island Nuclear Station, 1984 - 2006

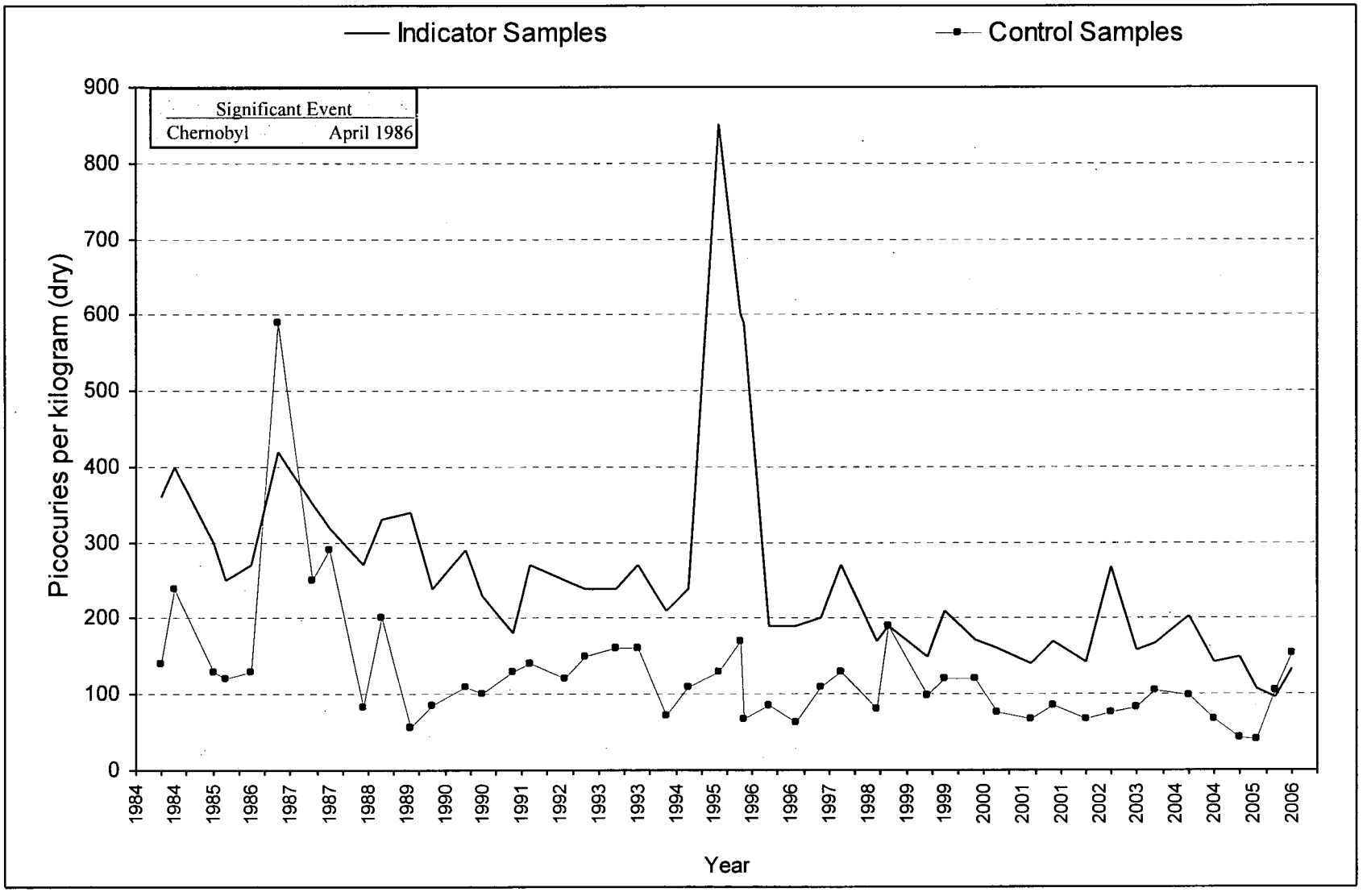


FIGURE C-6
Mean Quarterly Gross Beta Concentrations in Air Particulates
Three Mile Island Nuclear Station, 1972 - 2006

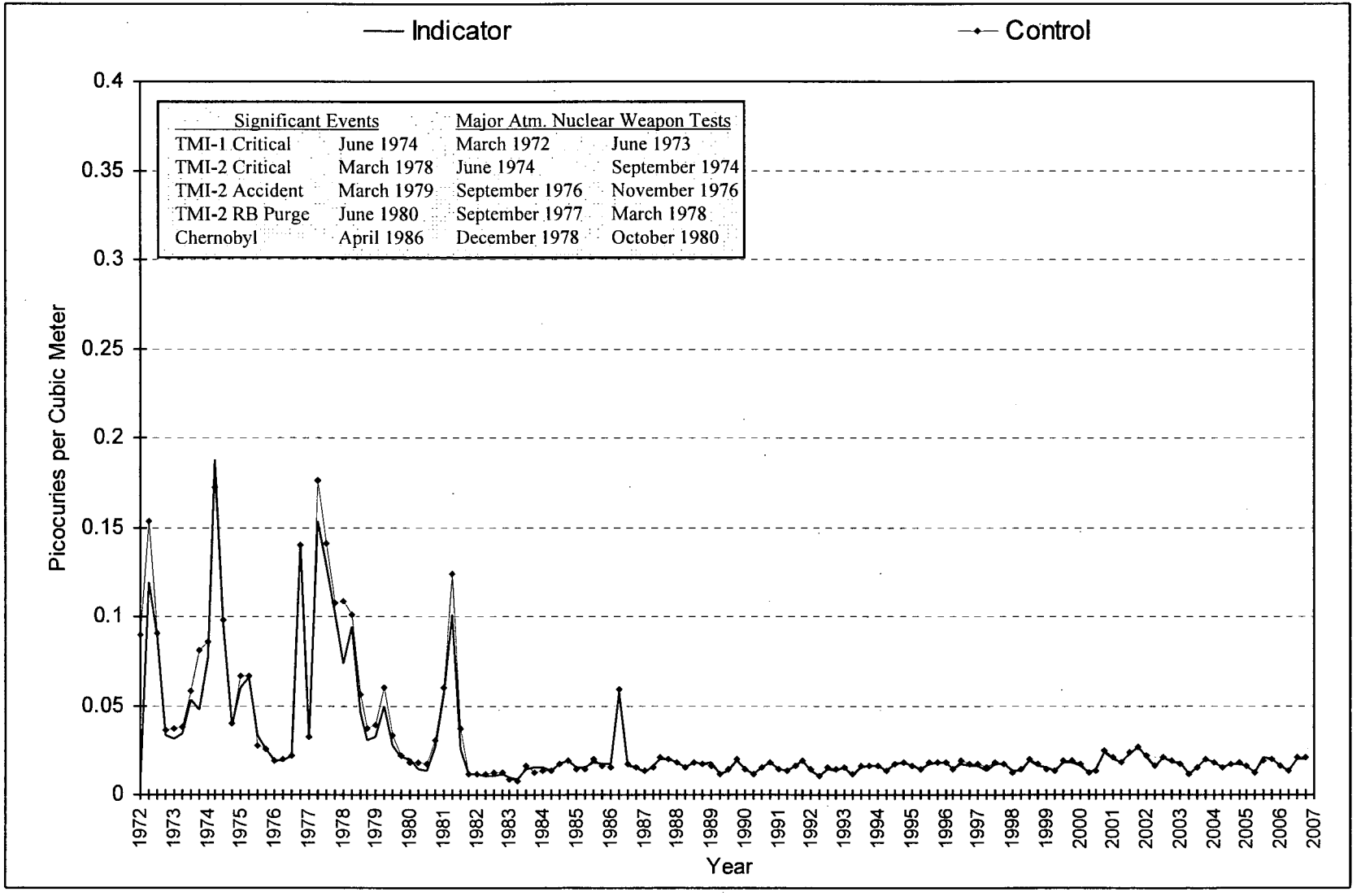


FIGURE C-7
Mean Weekly Gross Beta Concentrations in Air Particulates
Three Mile Island Nuclear Station, 2006

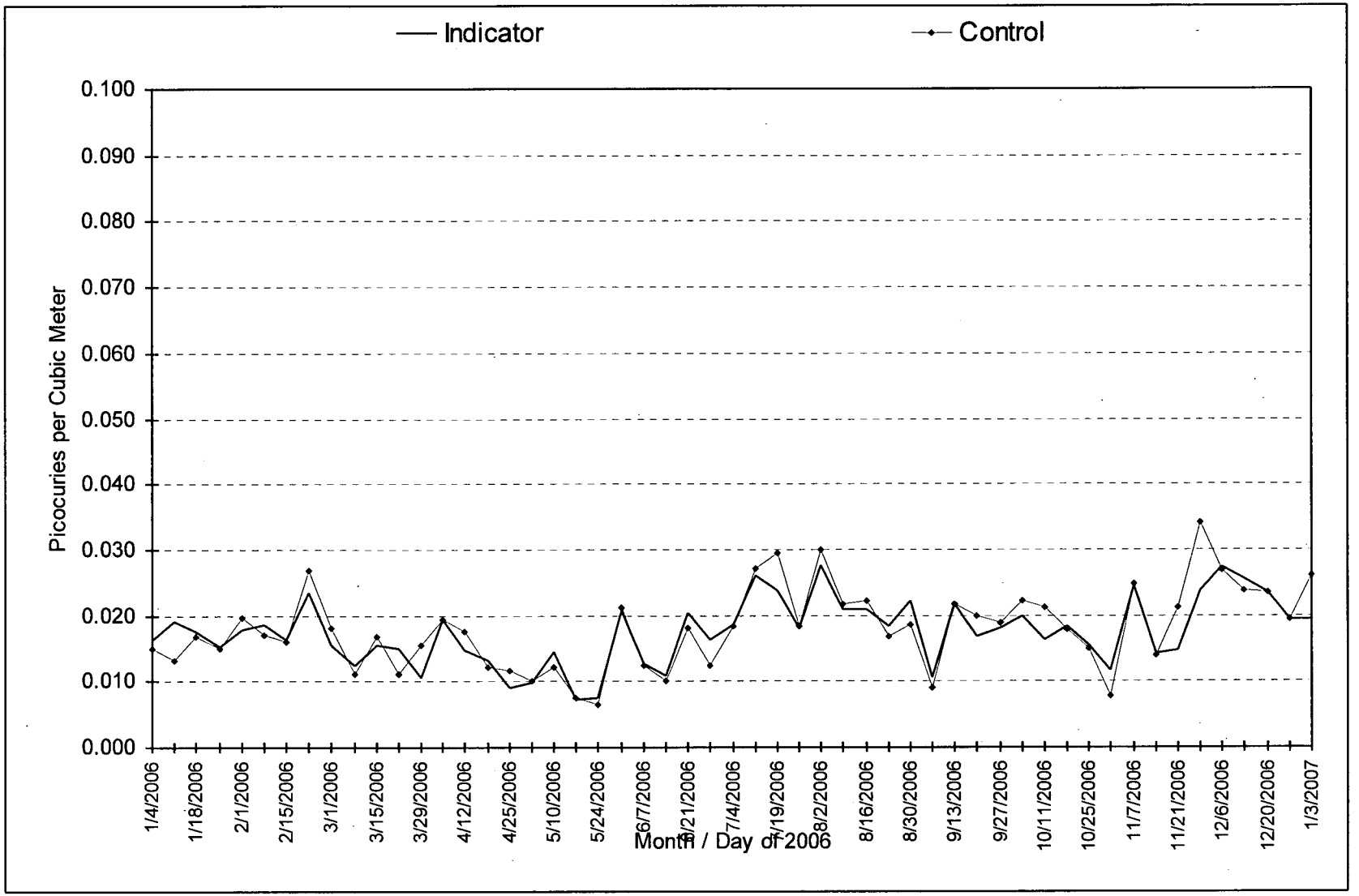


FIGURE C-8
Mean Quarterly Strontium-90 Concentrations in Cow Milk
Three Mile Island Nuclear Station, 1979 - 2006

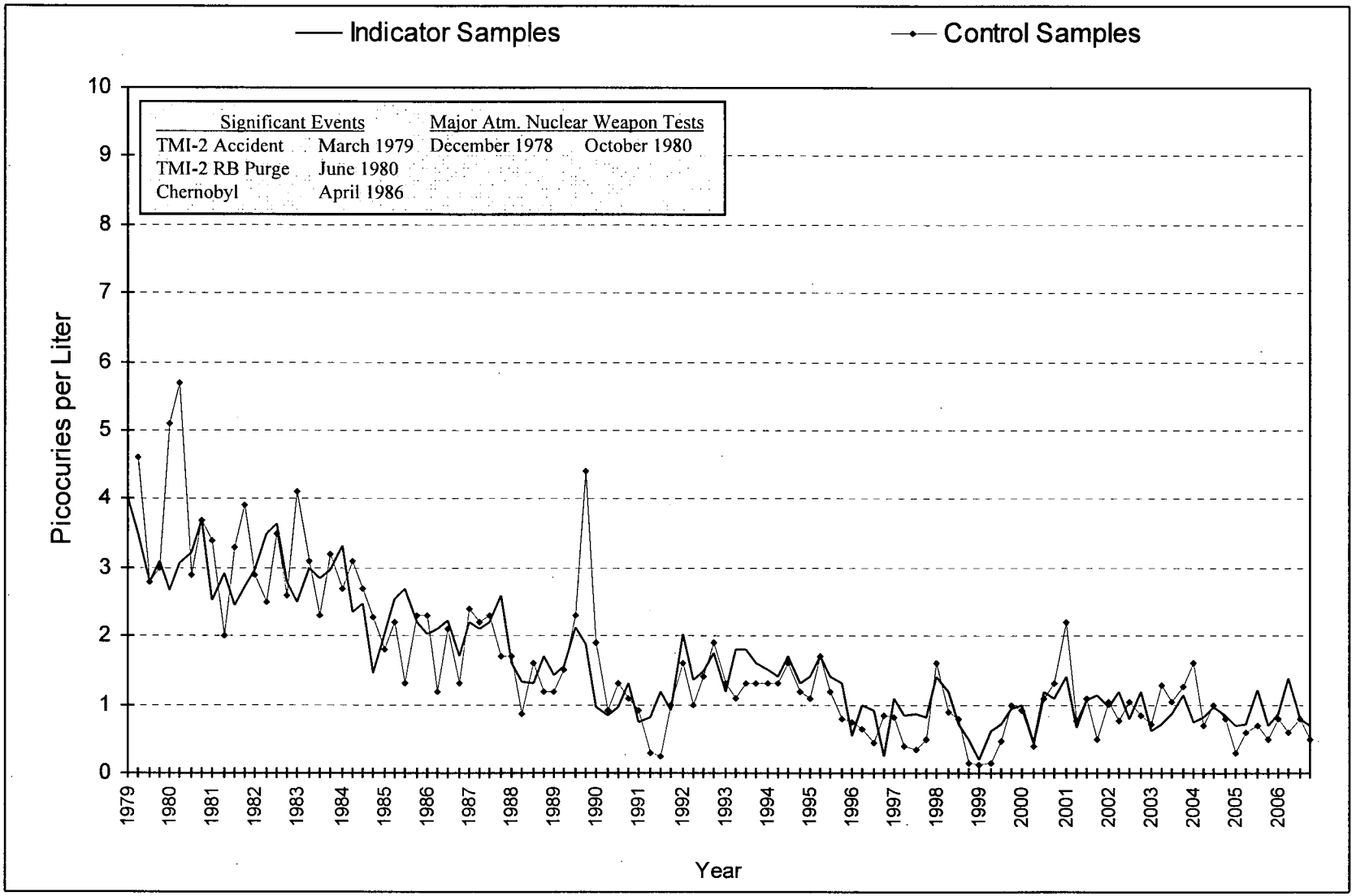
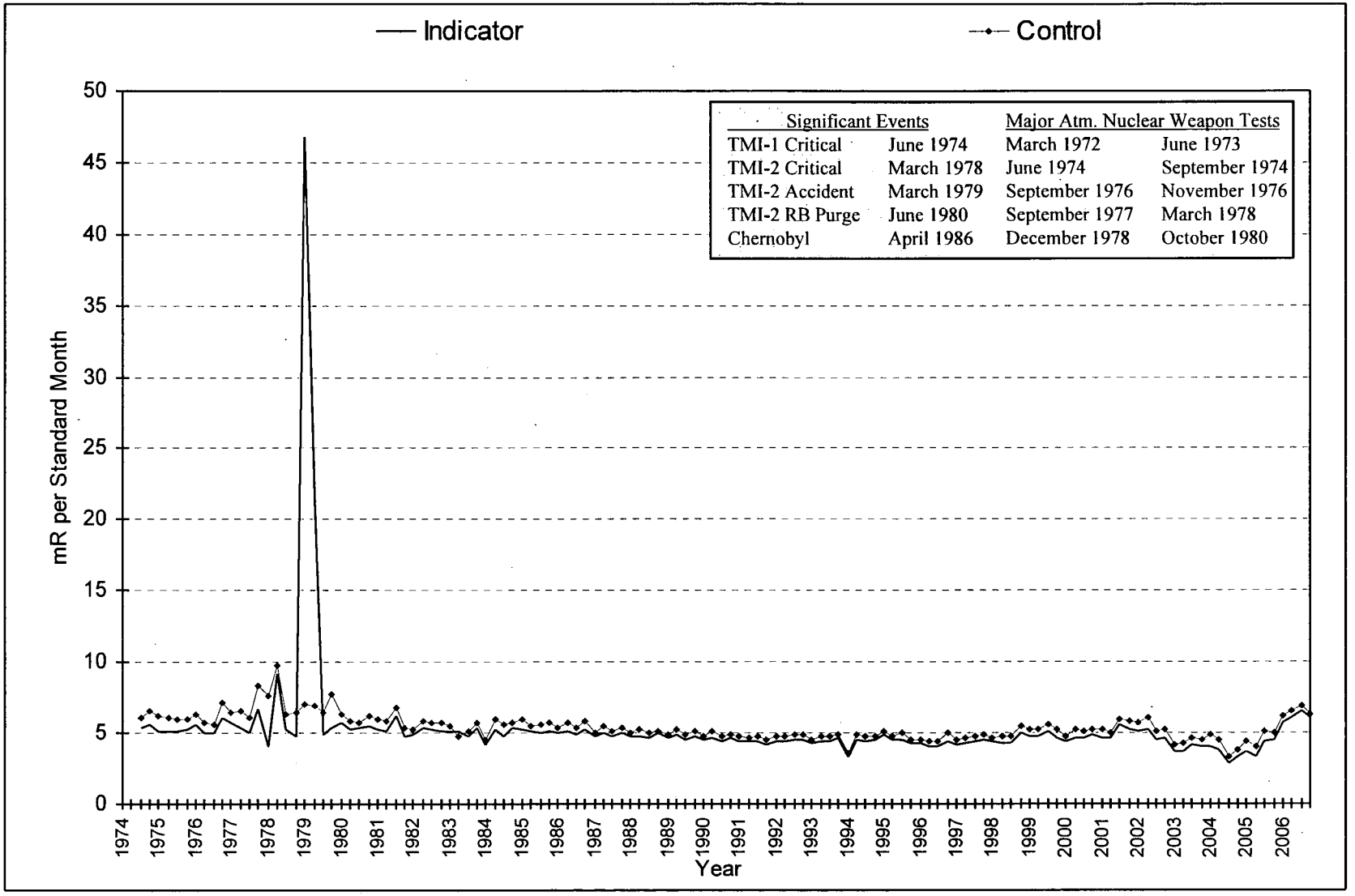


FIGURE C-9
Mean Quarterly Gamma Exposure Rates
Three Mile Island Nuclear Station, 1974 - 2006



Significant Events		Major Atm. Nuclear Weapon Tests	
TMI-1 Critical	June 1974	March 1972	June 1973
TMI-2 Critical	March 1978	June 1974	September 1974
TMI-2 Accident	March 1979	September 1976	November 1976
TMI-2 RB Purge	June 1980	September 1977	March 1978
Chernobyl	April 1986	December 1978	October 1980

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APPENDIX D

DATA TABLES AND FIGURES
COMPARISON LABORATORY

The following section contains data and figures illustrating the analyses performed by the quality control laboratory, Environmental Inc. (Env). Duplicate samples were obtained from several locations and media and split between the primary laboratory, Teledyne Brown Engineering (TBE) and Environmental Inc. (Env). Comparison of the results for most media were within expected ranges.

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TABLE D-I.1 CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/03/06 - 01/31/06	< 1.9
01/31/06 - 02/28/06	< 0.9
02/28/06 - 03/28/06	< 1.7
03/28/06 - 05/02/06	3 ± 1.0
05/02/06 - 05/30/06	< 1.8
05/30/06 - 06/26/06	1.2 ± 0.5
06/26/06 - 08/01/06	1.4 ± 0.6
08/01/06 - 08/29/06	2.5 ± 1.0
08/29/06 - 10/03/06	3.8 ± 1.1
10/03/06 - 10/31/06	2.3 ± 1.1
10/31/06 - 11/28/06	2.1 ± 1.0
11/28/06 - 01/02/07	< 1.8
MEAN	2.0 ± 1.6

TABLE D-I.2 CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/03/06 - 01/31/06	< 151
01/31/06 - 02/28/06	< 159
02/28/06 - 03/28/06	< 159
03/28/06 - 05/02/06	< 133
05/02/06 - 05/30/06	136 ± 71
05/30/06 - 06/26/06	126 ± 90
06/26/06 - 08/01/06	< 138
08/01/06 - 08/29/06	< 132
08/29/06 - 10/03/06	< 182
10/03/06 - 10/31/06	< 147
10/31/06 - 11/28/06	< 171
11/28/06 - 01/02/07	< 146
MEAN	148 ± 34

TABLE D-I.3 CONCENTRATIONS OF IODINE-131 IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/03/06 - 01/31/06	< 0.2
01/31/06 - 02/28/06	< 0.3
02/28/06 - 03/28/06	< 0.4
03/28/06 - 05/02/06	< 0.3
05/02/06 - 05/30/06	< 0.3
05/30/06 - 06/26/06	< 0.2
06/26/06 - 08/01/06	< 0.3
08/01/06 - 08/29/06	< 0.5
08/29/06 - 10/03/06	< 0.4
10/03/06 - 10/31/06	< 0.3
10/31/06 - 11/28/06	< 0.4
11/28/06 - 01/02/07	< 0.3
MEAN	0.3 ± 0.2

TABLE D-I.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95	Nb-95	Cs-134	Cs-137	Ba-140	La-140
Q9-1Q	01/03/06 - 01/31/06	< 3.9	< 2.0	< 5.0	3.2 ± 1.9	< 6.7	< 5.6	< 2.9	< 3.6	< 2.2	< 13	< 1.4
	01/31/06 - 02/28/06	< 3.0	< 2.4	< 8.7	< 4.2	< 7.5	< 9.2	< 4.6	< 6.2	< 4.6	< 17	< 1.6
	02/28/06 - 03/28/06	< 1.8	< 2.2	< 5.4	< 2.7	< 3.7	< 3.9	< 1.7	< 2.9	< 1.5	< 10	< 2.8
	03/28/06 - 05/02/06	< 2.0	< 3.3	< 7.8	< 3.0	< 7.3	< 5.1	< 1.6	< 3.0	< 2.3	< 15	< 3.9
	05/02/06 - 05/30/06	< 4.6	< 4.0	< 7.6	< 4.4	< 9.6	< 7.9	< 3.6	< 5.3	< 4.1	< 22	< 3.4
	05/30/06 - 06/26/06	< 5.8	< 5.0	< 11.4	< 3.8	< 7.7	< 9.6	< 4.3	< 5.0	< 3.0	< 12	< 3.0
	06/26/06 - 08/01/06	< 2.7	< 1.6	< 4.0	< 2.6	< 3.0	< 3.9	< 3.0	< 2.7	< 2.9	< 8	< 2.6
	08/01/06 - 08/29/06	< 2.5	< 2.2	< 5.1	< 1.2	< 4.0	< 4.2	< 2.0	< 2.5	< 2.1	< 7	< 2.7
	08/29/06 - 10/03/06	< 2.1	< 2.6	< 7.7	< 3.0	< 5.2	< 4.5	< 2.7	< 4.7	< 2.6	< 16	< 3.6
	10/03/06 - 10/31/06	< 1.6	< 2.5	< 5.3	< 3.5	< 4.2	< 5.5	< 3.0	< 3.9	< 2.1	< 11	< 1.8
	10/31/06 - 11/28/06	< 2.6	< 1.7	< 6.9	< 2.6	< 4.6	< 3.6	< 3.2	< 4.7	< 3.2	< 13	< 1.4
	11/28/06 - 01/02/07	< 3.4	< 2.7	< 6.6	< 3.5	< 3.8	< 3.8	< 2.7	< 3.7	< 3.4	< 18	4.5 ± 2.4
	MEAN	3.0 ± 2.5	2.7 ± 2.0	6.8 ± 4.1	3.0 ± 1.8	5.6 ± 4.2	5.6 ± 4.3	2.9 ± 1.9	4.0 ± 2.3	2.8 ± 1.8	13 ± 8	2.6 ± 1.7

TABLE D-I.5 CONCENTRATIONS OF TRITIUM, STRONTIUM, AND GAMMA EMITTERS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	H-3	Sr-90	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95	Nb-95	Cs-134	Cs-137	Ba-140	La-140
MS-2Q	01/16/06	311 ± 107												
	03/28/06	331 ± 100												
	06/08/06	306 ± 81												
	12/09/06	288 ± 87	< 0.5	< 2	0.3 ± 2.1	< 8	< 3	< 7	< 4	< 4	< 5	< 4	< 25	< 3

TABLE D-I.6 CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-89	Sr-90	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
INDPQ	11/14/06	< 10	< 4.7	2881 ± 289	< 7	< 11	< 35	< 16	27 ± 23	< 16	< 12

TABLE D-I.7 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137
J2-1Q	10/10/06	3435 ± 212	< 7	< 7

TABLE D-I.8 CONCENTRATIONS OF GAMMA EMITTERS AND STRONTIUM IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	I-131	Cs-134	Cs-137	Sr-89	Sr-90
B10-2Q	08/10/06	4713 ± 633	< 28	< 20.5	< 18.3	< 18.0	< 8.0

TABLE D-II.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

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

COLLECTION PERIOD	E1-2Q	
12/28/06 - 01/04/06	19 ± 4	
01/04/06 - 01/11/06	21 ± 5	
01/11/06 - 01/18/06	17 ± 4	
01/18/06 - 01/25/06	20 ± 4	
01/25/06 - 02/01/06	20 ± 5	
02/01/06 - 02/08/06	19 ± 4	
02/08/06 - 02/15/06	16 ± 4	
02/15/06 - 02/22/06	36 ± 5	
02/22/06 - 03/01/06	29 ± 5	
03/01/06 - 03/08/06	15 ± 4	
03/08/06 - 03/15/06	20 ± 4	
03/15/06 - 03/22/06	21 ± 4	
03/22/06 - 03/29/06	13 ± 4	
03/29/06 - 04/05/06	19 ± 4	
04/05/06 - 04/12/06	21 ± 4	
04/12/06 - 04/19/06	18 ± 4	
04/19/06 - 04/25/06	10 ± 4	
04/25/06 - 05/02/06	16 ± 4	
05/02/06 - 05/10/06	18 ± 5	
05/10/06 - 05/17/06	10 ± 4	
05/17/06 - 05/24/06	12 ± 4	
05/24/06 - 05/31/06	29 ± 5	
05/31/06 - 06/07/06	21 ± 4	
06/07/06 - 06/14/06	13 ± 4	
06/14/06 - 06/21/06	21 ± 4	
06/21/06 - 06/27/06	18 ± 5	
06/27/06 - 07/04/06	26 ± 5	
07/04/06 - 07/12/06	27 ± 4	
07/12/06 - 07/19/06	28 ± 5	
07/19/06 - 07/26/06	23 ± 5	
07/26/06 - 08/02/06	44 ± 5	
08/02/06 - 08/09/06	29 ± 5	
08/09/06 - 08/16/06	26 ± 5	
08/16/06 - 08/23/06	24 ± 5	
08/23/06 - 08/30/06	28 ± 5	
08/30/06 - 09/06/06	12 ± 4	
09/06/06 - 09/13/06	32 ± 5	
09/13/06 - 09/20/06	17 ± 4	
09/20/06 - 09/27/06	21 ± 4	
09/27/06 - 10/04/06	25 ± 4	
10/06/06 - 10/11/06	31 ± 6	(1)
10/11/06 - 10/18/06	24 ± 5	
10/18/06 - 10/25/06	22 ± 4	
10/25/06 - 10/31/06	9 ± 5	
10/31/06 - 11/07/06	29 ± 6	
11/07/06 - 11/15/06	17 ± 4	
11/15/06 - 11/21/06	19 ± 5	
11/21/06 - 11/28/06	27 ± 5	
11/28/06 - 12/06/06	34 ± 4	
12/06/06 - 12/12/06	36 ± 5	
12/12/06 - 12/20/06	33 ± 4	
12/20/06 - 12/27/06	28 ± 4	
12/27/06 - 01/03/07	25 ± 4	
MEAN	22 ± 15	

(1) Pump replaced 10/06/2006 due to faulty vacuum gauge.

TABLE D-II.2 CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

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

STC	COLLECTION PERIOD	Be-7	Cs-134	Cs-137
E1-2Q	12/28/05 - 03/29/06	61 ± 14	< 0.9	< 0.7
	03/29/06 - 06/27/06	86 ± 23	< 0.7	< 0.6
	06/27/06 - 09/27/06	85 ± 14	< 0.6	< 0.5
	09/27/06 - 01/03/07	60 ± 12	< 0.6	< 0.6
	MEAN	73 ± 29	0.7 ± 0.3	0.6 ± 0.2

TABLE D-III.1 CONCENTRATIONS OF I-131 BY CHEMICAL SEPARATION,GAMMA EMITTERS, & STRONTIUM IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	I-131	K-40	Cs-134	Cs-137	Ba-140	La-140	Sr-89	Sr-90
G2-1Q	01/04/06	< 0.2	1157 ± 176	< 4.1	< 5.4	< 39	< 4.7		
	02/01/06	< 0.1	982 ± 91	< 3.7	< 3.8	< 38	< 3.2		
	03/01/06	< 0.2	1173 ± 193	< 6.6	< 4.5	< 22	< 5.6		
	03/15/06	< 0.3	1214 ± 160	< 4.7	< 3.1	< 19	< 5.1		
	03/29/06	< 0.3	1431 ± 181	< 5.2	< 6.9	< 34	< 2.5	< 0.6	< 0.5
	04/12/06	< 0.2	1195 ± 174	< 4.5	< 4.7	< 22	< 7.3		
	04/26/06	< 0.2	1282 ± 150	< 5.8	< 5.9	< 18	< 2.7		
	05/10/06	< 0.2	1291 ± 120	< 3.1	< 3.1	< 17	< 3.2		
	05/24/06	< 0.3	1260 ± 117	< 4.8	< 1.9	< 22	< 3		
	06/07/06	< 0.4	1135 ± 125	< 3.5	< 4.3	< 13	< 3.1		
	06/21/06	< 0.4	1327 ± 104	< 3.3	< 3.7	< 14	< 2.4	< 0.6	< 0.7
	07/05/06	< 0.3	1303 ± 112	< 4.1	< 4.1	< 8	< 2.2		
	07/19/06	< 0.3	1414 ± 111	< 3.8	< 2.6	< 11	< 2.8		
	08/02/06	< 0.3	1336 ± 181	< 7.0	< 4.7	< 23	< 5.6		
	08/16/06	< 0.3	1424 ± 120	< 4.1	< 2.8	< 13	< 2.5		
	08/30/06	< 0.2	1365 ± 118	< 4.7	< 3.6	< 11	< 2.6		
	09/13/06	< 0.5	1124 ± 166	< 6.6	< 6.1	< 29	< 4.6		
	09/27/06	< 0.3	1258 ± 101	< 3.7	< 2.4	< 12	< 2.2	< 0.7	< 0.4
	10/11/06	< 0.3	1167 ± 110	< 2.9	< 4.1	< 17	< 2.6		
	10/25/06	< 0.4	1347 ± 115	< 2.0	< 4.0	< 7	< 3.3		
	11/07/06	< 0.4	1161 ± 110	< 4.7	< 4.1	< 21	< 4.5		
	11/21/06	< 0.4	1327 ± 116	< 3.7	< 4.0	< 14	< 1.9		
	12/06/06	< 0.3	1294 ± 121	< 4.2	< 2.4	< 17	< 3.4	< 0.8	0.6 ± 0.3
	MEAN	0.3 ± 0.2	1259 ± 222	4.4 ± 2.5	4.0 ± 2.5	19 ± 18	3.5 ± 2.8	0.7 ± 0.2	0.5 ± 0.2

FIGURE D-1
MONTHLY GROSS BETA CONCENTRATIONS IN
DRINKING WATER SAMPLES COLLECTED FROM TMINS LOCATION Q9-1Q, 2006

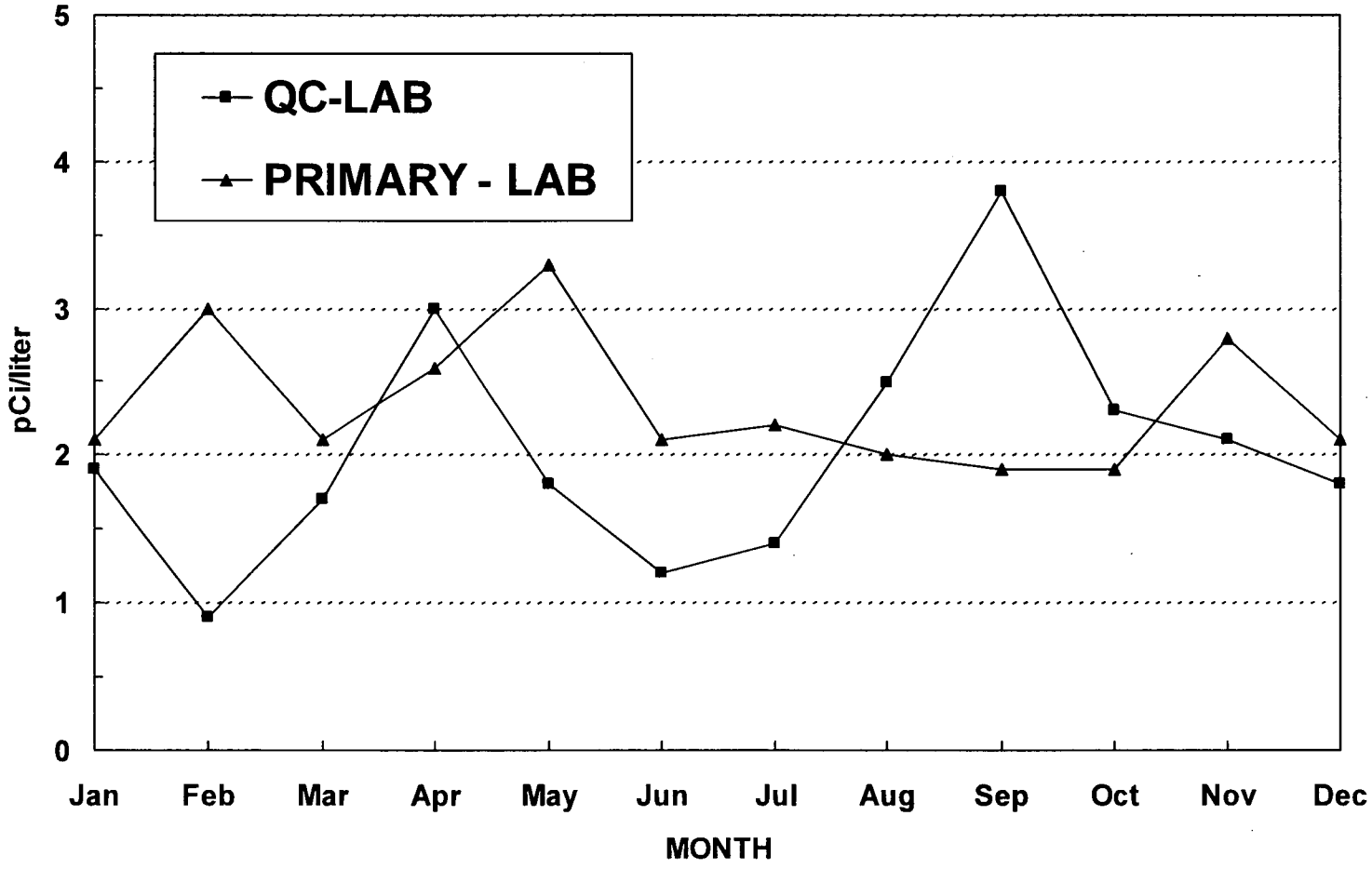
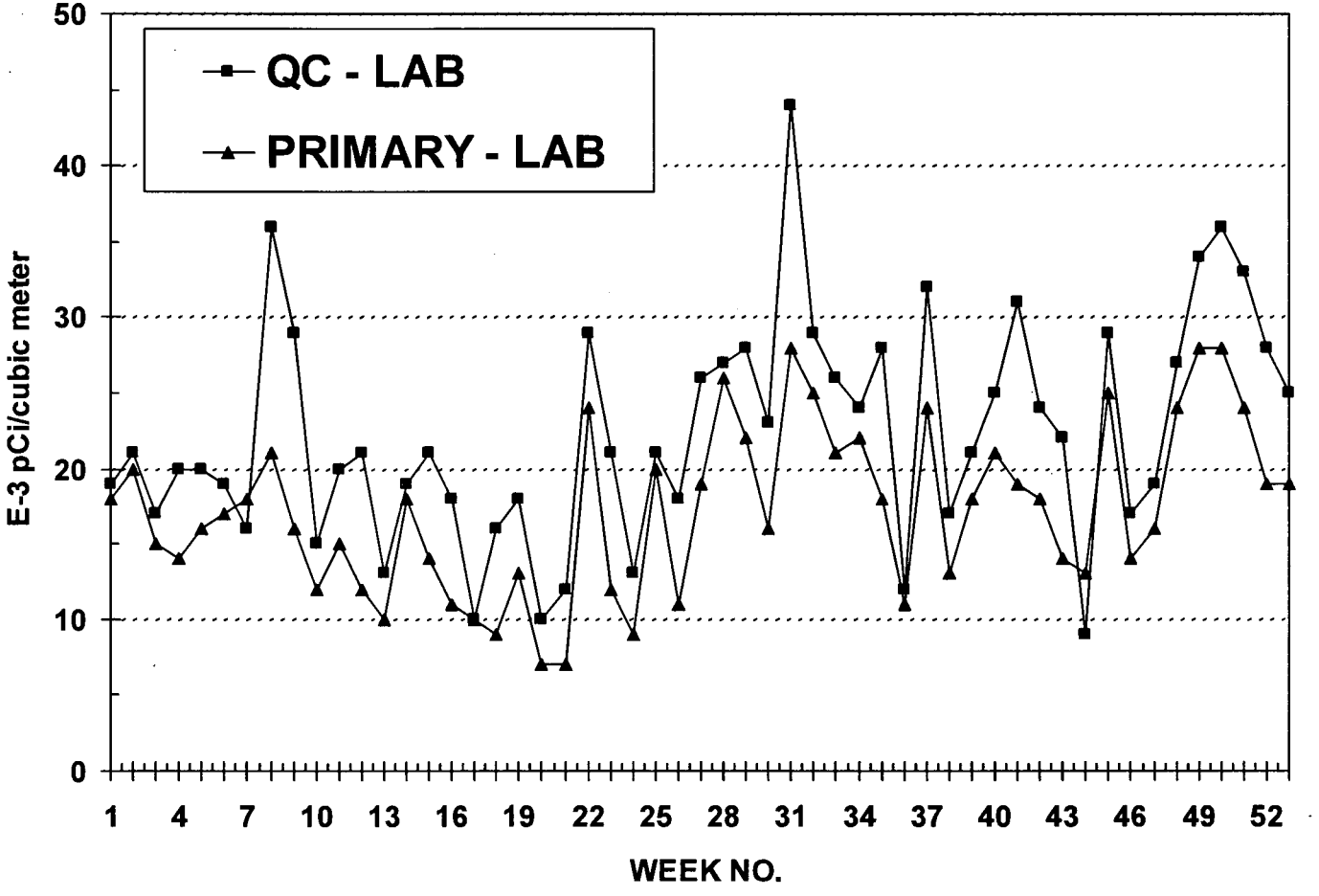


FIGURE D-2
WEEKLY GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED FROM TMINS LOCATION E1-2Q, 2006



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APPENDIX E

INTER-LABORATORY COMPARISON PROGRAM

TABLE E-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2006	E4964-396	Milk	Sr-89	pCi/L	91.5	99.2	0.92	A
			Sr-90	pCi/L	12.2	10.8	1.13	A
	E4965-396	Milk	I-131	pCi/L	74.4	78.0	0.95	A
			Ce-141	pCi/L	95.1	104	0.91	A
			Cr-51	pCi/L	278	280	0.99	A
			Cs-134	pCi/L	103	121	0.85	A
			Cs-137	pCi/L	87.6	88.8	0.99	A
			Co-58	pCi/L	93.9	105	0.89	A
			Mn-54	pCi/L	90.0	93.3	0.96	A
			Fe-59	pCi/L	83.0	86.6	0.96	A
			Zn-65	pCi/L	178	176	1.01	A
			Co-60	pCi/L	118	128	0.92	A
	E4967-396	AP	Ce-141	pCi	89.9	74	1.21	W
			Cr-51	pCi	253	200	1.27	W
			Cs-134	pCi	71.5	86.1	0.83	A
			Cs-137	pCi	67.5	63.3	1.07	A
			Co-58	pCi	79.7	74.6	1.07	A
			Mn-54	pCi	74.9	67	1.12	A
			Fe-59	pCi	75.5	61.8	1.22	W
			Zn-65	pCi	146	126	1.16	A
			Co-60	pCi	91.2	91	1.00	A
	E4966-396	Charcoal	I-131	pCi	87.4	86.2	1.01	A
June 2006	E5018-396	Milk	Sr-89	pCi/L	118	129	0.91	A
			Sr-90	pCi/L	9.29	9.74	0.95	A
	E5019-396	Milk	I-131	pCi/L	49.9	63.2	0.79	W
			Ce-141	pCi/L	174	184	0.95	A
			Cr-51	pCi/L	266	259	1.03	A
			Cs-134	pCi/L	111	127	0.88	A
			Cs-137	pCi/L	116	117	0.99	A
			Co-58	pCi/L	101	100	1.01	A
			Mn-54	pCi/L	144	146	0.98	A
			Fe-59	pCi/L	96.7	93.6	1.03	A
			Zn-65	pCi/L	182	185	0.98	A
			Co-60	pCi/L	126	129	0.98	A
	E5021-396	AP	Ce-141	pCi	113	124	0.91	A
			Cr-51	pCi	176	174	1.01	A
			Cs-134	pCi	63.7	85.1	0.75	W
			Cs-137	pCi	76.8	79.0	0.97	A
			Co-58	pCi	63.1	67.4	0.94	A
			Mn-54	pCi	102	99	1.04	A
			Fe-59	pCi	64.6	62.9	1.03	A
			Zn-65	pCi	131	125	1.05	A
			Co-60	pCi	81.6	86.5	0.94	A
	E5020-396	Charcoal	I-131	pCi	65.4	65.9	0.99	A

TABLE E-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2006	E5120-396	Milk	Sr-89	pCi/L	90.3	89.2	1.01	A
			Sr-90	pCi/L	11.6	12.4	0.94	A
	E5121-396	Milk	I-131	pCi/L	67.8	73.8	0.92	A
			Ce-141	pCi/L	85.0	86.0	0.99	A
			Cr-51	pCi/L	263	282	0.93	A
			Cs-134	pCi/L	74.7	85.0	0.88	A
			Cs-137	pCi/L	172	175	0.98	A
			Co-58	pCi/L	107	109	0.98	A
			Mn-54	pCi/L	110	113	0.98	A
			Fe-59	pCi/L	46.6	43.7	1.07	A
			Zn-65	pCi/L	144	145	0.99	A
			Co-60	pCi/L	127	134	0.95	A
	E5123-396	AP	Ce-141	pCi	67.1	66.4	1.01	A
			Cr-51	pCi	223	217	1.03	A
			Cs-134	pCi	51.7	65.6	0.79	W
			Cs-137	pCi	134	135.0	0.99	A
			Co-58	pCi	84.8	84.3	1.01	A
			Mn-54	pCi	95.2	87	1.10	A
			Fe-59	pCi	41.6	33.7	1.23	W
			Zn-65	pCi	123	112	1.10	A
			Co-60	pCi	98.9	103	0.96	A
			Co-57	pCi	0.922	(1)	NA	NA
	E5122-396	Charcoal	I-131	pCi	77.7	90.7	0.86	A
December 2006	E5172-396	Milk	Sr-89	pCi/L	72.4	72.0	1.01	A
			Sr-90	pCi/L	7.05	5.90	1.19	A
	E5173-396	Milk	I-131	pCi/L	71.9	70.8	1.02	A
			Ce-141	pCi/L	268	294	0.91	A
			Cr-51	pCi/L	420	433	0.97	A
			Cs-134	pCi/L	128	147	0.87	A
			Cs-137	pCi/L	231	237	0.97	A
			Co-58	pCi/L	82.0	83.8	0.98	A
			Mn-54	pCi/L	113	111	1.02	A
			Fe-59	pCi/L	79.8	79.7	1.00	A
			Zn-65	pCi/L	170	164	1.04	A
			Co-60	pCi/L	265	281	0.94	A
	E5175-396	AP	Ce-141	pCi	220	210	1.05	A
			Cr-51	pCi	343	309	1.11	A
			Cs-134	pCi	90.8	105	0.86	A
			Cs-137	pCi	185	169.0	1.09	A
			Co-58	pCi	65.0	59.7	1.09	A
			Mn-54	pCi	90.6	79	1.15	A
			Fe-59	pCi	70.7	56.7	1.25	W
			Zn-65	pCi	136	117	1.16	A
			Co-60	pCi	208	200	1.04	A

TABLE E-1 **ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2006	E5174-396	Charcoal	I-131	pCi	77.4	85.4	0.91	A

(1) Impurity detected but not measured by Analytics.
(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, 2006
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
May 2006	Rad 65	Water	Sr-89	pCi/L	30.2	32.4	23.6 - 41.1	A
			Sr-90	pCi/L	8.74	9.00	0.340 - 17.7	A
			Ba-133	pCi/L	10.9	10.0	1.34 - 18.7	A
			Cs-134	pCi/L	39.7	43.4	34.7 - 52.1	A
			Cs-137	pCi/L	199	214	195 - 233	A
			Co-60	pCi/L	111	113.0	103 - 123	A
			Zn-65	pCi/L	146	152	126 - 178	A
			Gr-A	pCi/L	22.9	21.3	12.1 - 30.5	A
			Gr-B	pCi/L	23.7	23.0	14.3 - 31.7	A
			Ra-226	pCi/L	2.64	3.02	2.23 - 3.81	A
			U-Nat	pCi/L	74.9	69.1	57.1 - 81.1	A
			H-3	pCi/L	7950	8130	6720 - 9540	A
	Rad 65	Water	I-131	pCi/L	18.2	19.1	13.9 - 24.3	A
November 2006	Rad 67	Water	Sr-89	pCi/L	40.0	39.9	31.2 - 48.6	A
			Sr-90	pCi/L	16.2	16.0	7.34 - 24.7	A
			Ba-133	pCi/L	65.0	70.2	58.1 - 82.3	A
			Cs-134	pCi/L	27.4	29.9	21.2 - 38.6	A
			Cs-137	pCi/L	74.4	78.2	69.5 - 86.9	A
			Co-60	pCi/L	61.6	62.3	53.6 - 71.0	A
			Zn-65	pCi/L	277	277	229 - 325	A
			Gr-A	pCi/L	23.3	28.7	16.3 - 41.1	A
			Gr-B	pCi/L	22.0	20.9	12.2 - 29.6	A
			U-Nat	pCi/L	3.18	3.20	0.00 - 8.40	A
			H-3	pCi/L	2930	3050	2430 - 3670	A
		Water	I-131	pCi/L	19.8	22.1	16.9 - 27.3	A

(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, 2006
(PAGE 1 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
January 2006	06-MaW15	Water	Am-241	Bq/L	1.29	1.30	0.91 - 1.69	A
			Cs-134	Bq/L	79.2	95.1	66.57 - 123.63	A
			Cs-137	Bq/L	-0.188			A
			Co-57	Bq/L	151	166.12	116.28 - 215.96	A
			Co-60	Bq/L	141	153.50	107.45 - 199.55	A
			H-3	Bq/L	988	952.01	666.41 - 1237.61	A
			Fe-55	Bq/L	106.0	129.60	90.72 - 168.48	A
			Mn-54	Bq/L	297	315.00	220.50 - 409.50	A
			Ni-63	Bq/L	61.5	60.34	44.24 - 78.44	A
			Pu-238	Bq/L	0.961	0.91	0.64 - 1.18	A
			Pu-239/240	Bq/L	0.00965	0.00710	(1)	A
			Sr-90	Bq/L	12.6	13.16	9.21- 17.11	A
			Tc-99	Bq/L	22.5	23.38	16.37 - 30.39	A
			U-234/233	Bq/L	2.20	2.09	1.46 - 2.72	A
			U-238	Bq/L	2.23	2.17	1.52 - 2.82	A
			Zn-65	Bq/L	219	228.16	159.71 - 296.61	A
	06-GrW15	Water	Gr-A	Bq/L	0.575	0.581	>0.0 - 1.162	A
			Gr-B	Bq/L	1.52	1.13	0.56 - 1.70	A
	06-MaS15	Soil	Am-241	Bq/kg	48.8	57.08	39.96 - 74.20	A
			Cs-134	Bq/kg	15.9			N (1)
			Cs-137	Bq/kg	370	339.69	237.78 - 441.60	A
			Co-57	Bq/kg	667	656.29	459.40 - 853.18	A
			Co-60	Bq/kg	478	447.10	312.97 - 581.23	A
			Mn-54	Bq/kg	384	346.77	242.74 - 450.80	A
			Ni-63	Bq/kg	394	323.51	226.46 - 420.56	W
			K-40	Bq/kg	667	604	423 - 785	A
			Sr-90	Bq/kg	253	314.35	220.04 - 408.66	A
			Tc-99	Bq/kg	146	154.76	108.33 - 201.19	A
			Zn-65	Bq/kg	740	657.36	460.15 - 854.57	A
	06-RdF15	AP	Am-241	Bq/sample	0.0850	0.093	0.065 - 0.121	A
			Cs-134	Bq/sample	2.34	2.934	2.054 - 3.814	A
			Cs-137	Bq/sample	2.45	2.531	1.772 - 3.290	A
			Co-57	Bq/sample	3.87	4.096	2.867 - 5.325	A
			Co-60	Bq/sample	2.12	2.186	1.530 - 2.842	A
			Mn-54	Bq/sample	0.0206			A
			Pu-238	Bq/sample	0.0766	0.067	0.047 - 0.087	A
			Pu-239/240	Bq/sample	0.00520	0.00041	(1)	A
			Sr-90	Bq/sample	0.761	0.792	0.554 - 1.030	A
			U-234/233	Bq/sample	0.0217	0.020	0.014 - 0.026	A
			U-238	Bq/sample	0.0220	0.021	0.015 - 0.027	A
			Zn-65	Bq/sample	3.86	3.423	2.396 - 4.450	A
	06-GrF15	AP	Gr-A	Bq/sample	0.257	0.361	>0.0 - 0.722	A
			Gr-B	Bq/sample	0.398	0.481	0.241 - 0.722	A

TABLE E-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 2 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
January 2006	06-RdV15	Vegetation	Am-241	Bq/sample	0.156	0.156	0.109 - 0.203	A
			Cs-134	Bq/sample	0.369			A
			Cs-137	Bq/sample	3.15	3.074	2.152 - 3.996	A
			Co-57	Bq/sample	10.1	8.578	6.005 - 11.151	A
			Co-60	Bq/sample	4.69	4.520	3.164 - 5.876	A
			Mn-54	Bq/sample	6.53	6.247	4.373 - 8.121	A
			Pu-238	Bq/sample	0.183	0.137	0.096 - 0.178	N (2)
			Pu-239/240	Bq/sample	0.111	0.164	0.115 - 0.213	N (2)
			Sr-90	Bq/sample	2.22	1.561	1.093 - 2.029	N (2)
			U-234/233	Bq/sample	0.208	0.208	0.146 - 0.270	A
			U-238	Bq/sample	0.176	0.216	0.151 - 0.281	A
			Zn-65	Bq/sample	10.5	9.798	6.859 - 12.737	A
July 2006	06-MaW16	Water	Am-241	Bq/L	2.09	2.31	1.62 - 3.00	A
			Cs-134	Bq/L	99.8	112.82	78.98 - 146.66	A
			Cs-137	Bq/L	191	196.14	137.30 - 254.98	A
			Co-57	Bq/L	203	213.08	149.16 - 277.00	A
			Co-60	Bq/L	46.2	47.5	33.2 - 61.8	A
			H-3	Bq/L	471	428.85	300.20 - 557.50	A
			Fe-55	Bq/L	173	165.4	115.8 - 215.0	A
			Ni-63	Bq/L	109	118.62	83.03 - 154.21	A
			Pu-238	Bq/L	1.50	1.39	0.97 - 1.81	A
			Pu-239/240	Bq/L	2.01	1.94	1.36 - 2.52	A
			Sr-90	Bq/L	13.7	15.69	10.98- 20.40	A
			Tc-99	Bq/L	29.0	27.15	19.00 - 35.29	A
			U-234/233	Bq/L	2.19	2.15	1.50 - 2.80	A
			U-238	Bq/L	2.25	2.22	1.55 - 2.89	A
			Zn-65	Bq/L	178	176.37	123.46 - 229.28	A
	06-GrW16	Water	Gr-A	Bq/L	1.52	1.033	>0.0 - 2.066	A
			Gr-B	Bq/L	1.18	1.03	0.52 - 1.54	A
	06-MaS16	Soil	Am-241	Bq/kg	83.6	105.47	73.83 - 137.11	W
			Cs-134	Bq/kg	393	452.13	316.49 - 587.77	A
			Cs-137	Bq/kg	522	525.73	368.01 - 683.45	A
			Co-57	Bq/kg	636	676.33	473.43 - 879.23	A
			Co-60	Bq/kg	3.78	1.98		A (3)
			Mn-54	Bq/kg	598	594.25	415.98 - 772.52	A
			Ni-63	Bq/kg	571	627.3	470.6 - 874.0	A
			Pu-238	Bq/kg	71.2	82	57 - 107	A
			Pu-239240	Bq/kg	0.487	0.93		A (3)
			K-40	Bq/kg	615	604	423 - 785	A
			Sr-90	Bq/kg	178	223.3	156.3 - 290.3	W
			Tc-99	Bq/kg	175	218.01	152.61 - 283.41	A
			U-234/233	Bq/kg	119	152.44	106.71 - 198.17	W
			U-238	Bq/kg	115	158.73	111.11 -206.35	W
			Zn-65	Bq/kg	937	903.61	632.53 - 1174.69	A

TABLE E-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2006
(PAGE 3 OF 3)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
July 2006	06-RdF16	AP	Am-241	Bq/sample	0.124	0.142	0.099 - 0.185	A
			Cs-134	Bq/sample	2.62	3.147	2.203 - 4.091	A
			Cs-137	Bq/sample	1.98	1.805	1.263 - 2.346	A
			Co-57	Bq/sample	2.65	2.582	1.807 - 3.357	A
			Co-60	Bq/sample	1.63	1.577	1.104 - 2.050	A
			Mn-54	Bq/sample	2.10	1.92	1.34 - 2.50	A
			Pu-238	Bq/sample	0.118	0.118	0.083 - 0.153	A
			Pu-239/240	Bq/sample	0.00822	NA		A
			Sr-90	Bq/sample	0.549	0.62	0.43 - 0.81	A
			U-234/233	Bq/sample	0.140	0.134	0.094 - 0.174	A
			U-238	Bq/sample	0.136	0.139	0.097 - 0.181	A
			Zn-65	Bq/sample	-0.163	NA		A
	06-GrF16	AP	Gr-A	Bq/sample	0.134	0.290	>0.0 - 0.580	A
			Gr-B	Bq/sample	0.358	0.359	0.180 - 0.538	A

(1) False positive test

(2) Evaluated as a false positive by MAPEP although we considered the result a non-detect due to the peak not being identified by the gamma software. For Cs-134, MAPEP suggests the Bi-214 is not being differentiated from the Cs-134 peak. See email attached with MAPEP results in Appendix A. NCR 06-07.

(3) Sr samples analyzed in triplicate and one high result of 2.43 pCi/kg biased the submitted results on the high side. We were unable to determine the cause for the higher result. Since we do not analyze vegetation for isotpic Pu, no NCR was initiated for the Pu failure. MAPEP suggest pyrosulfate fusion preparation prior to analysis for isotopic Pu in vegetation samples.

(4) Not detected, reported a statistically zero result. (False positive test)

(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**
ENVIRONMENTAL, INC., 2006

(Page 1 of 2)

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

TABLE E-4 **ERA[a] STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM ENVIRONMENTAL, INC., 2006**

(Page 2 of 2)

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

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

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

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

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

TABLE E-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2006

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

TABLE E-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a]
ENVIRONMENTAL, INC., 2006

(Page 2 of 3)

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

TABLE E-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2006

(Page 3 of 3)

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STAP-1100	07/01/06	Am-241	0.16 ± 0.03	0.14	0.10 - 0.19	Pass
STAP-1100	07/01/06	Co-57	2.17 ± 0.06	2.58	1.81 - 3.36	Pass
STAP-1100	07/01/06	Co-60	1.38 ± 0.07	1.58	1.10 - 2.05	Pass
STAP-1100	07/01/06	Cs-134	2.52 ± 0.13	3.15	2.20 - 4.09	Pass
STAP-1100	07/01/06	Cs-137	1.64 ± 0.08	1.81	1.26 - 2.35	Pass
STAP-1100	07/01/06	Mn-54	1.76 ± 0.18	1.92	1.34 - 2.50	Pass
STAP-1100	07/01/06	Pu-238	0.09 ± 0.02	0.12	0.08 - 0.15	Pass
STAP-1100	07/01/06	Sr-90	0.66 ± 0.21	0.62	0.43 - 0.81	Pass
STAP-1100	07/01/06	U-233/4	0.15 ± 0.02	0.13	0.09 - 0.17	Pass
STAP-1100	07/01/06	U-238	0.13 ± 0.02	0.14	0.10 - 0.18	Pass
STAP-1100 [e]	07/01/06	Zn-65	< 0.07	0.00		Pass
STAP-1101	07/01/06	Gr. Alpha	0.08 ± 0.03	0.29	0.00 - 0.58	Pass
STAP-1101	07/01/06	Gr. Beta	0.41 ± 0.05	0.36	0.18 - 0.54	Pass
STW-1102	07/01/06	Gr. Alpha	0.76 ± 0.07	1.03	0.00 - 2.07	Pass
STW-1102	07/01/06	Gr. Beta	1.23 ± 0.06	1.03	0.52 - 1.54	Pass
STW-1103	07/01/06	Am-241	1.86 ± 0.09	2.31	1.62 - 3.00	Pass
STW-1103	07/01/06	Co-57	224.10 ± 1.20	213.08	149.16 - 277.00	Pass
STW-1103	07/01/06	Co-60	49.40 ± 0.50	47.50	33.20 - 61.80	Pass
STW-1103	07/01/06	Cs-134	112.70 ± 0.90	112.82	78.97 - 146.66	Pass
STW-1103	07/01/06	Cs-137	206.60 ± 1.40	196.14	137.30 - 254.98	Pass
STW-1103	07/01/06	Fe-55	138.40 ± 5.40	165.40	115.80 - 215.00	Pass
STW-1103	07/01/06	H-3	446.50 ± 11.80	428.85	300.20 - 557.50	Pass
STW-1103 [e]	07/01/06	Mn-54	< 0.30	0.00		Pass
STW-1103	07/01/06	Ni-63	116.70 ± 3.60	118.62	83.03 - 154.21	Pass
STW-1103	07/01/06	Pu-238	1.27 ± 0.07	1.39	0.97 - 1.81	Pass
STW-1103	07/01/06	Pu-239/40	1.67 ± 0.08	1.94	1.36 - 2.52	Pass
STW-1103	07/01/06	Sr-90	16.40 ± 1.90	15.69	10.98 - 20.40	Pass
STW-1103	07/01/06	Tc-99	29.40 ± 1.10	27.15	19.00 - 35.29	Pass
STW-1103	07/01/06	U-233/4	1.97 ± 0.08	2.15	1.50 - 2.80	Pass
STW-1103	07/01/06	U-238	1.97 ± 0.08	2.22	1.55 - 2.89	Pass
STW-1103	07/01/06	Zn-65	192.50 ± 2.40	176.37	123.46 - 229.28	Pass

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

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

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

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

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

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

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

APPENDIX F

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-289
50-320

THREE MILE ISLAND NUCLEAR STATION UNITS 1 and 2

Annual Radiological Groundwater Protection Program Report (ARGPPR)

1 January Through 31 December 2006

Prepared By

Teledyne Brown Engineering
Environmental Services

AmerGen℠
An Exelon Company

Three Mile Island Nuclear Station
Middletown, PA 17057

April 2007

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Table B-I.2 Concentrations of Tritium and Strontium in Surface Water Samples Collected as Part of the Radiological Groundwater Protection Program, Three Mile Island Nuclear Station, 2006.

Table B-I.3 Concentrations of Gamma Emitters in Groundwater Samples Collected in the Vicinity of Three Mile Island Nuclear Station, 2006.

Table B-I.4 Concentrations of Gamma Emitters in Surface Water Samples Collected in the Vicinity of Three Mile Island Nuclear Station, 2006.

I. Summary and Conclusions

In 2006, Exelon instituted a comprehensive program to evaluate the impact of station operations on groundwater and surface water in the vicinity of Three Mile Island Nuclear Station. At Three Mile Island Nuclear, 31 new permanent groundwater monitoring wells were installed in 2006. The results of the special investigations for all TMI wells are included in this report. This report covers groundwater and surface water samples, collected from the environment, both on and off station property in 2006. During that time period, 613 analyses were performed on 340 samples from 76 locations. The monitoring was conducted in two phases. Phase 1 of the monitoring was part of a comprehensive study initiated by Exelon to determine whether groundwater or surface water at and in the vicinity of Three Mile Island Nuclear Station had been adversely impacted by any releases of radionuclides. Phase 1 was conducted by Connestoga Rovers and Associates (CRA) and the conclusions were made available to state and federal regulators as well as the public on an Exelon web site http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm. Phase 2 of the RGPP was conducted to initiate follow up of Phase 1 and begin long-term monitoring at groundwater and surface water locations.

In assessing all the data gathered for this report, it was concluded that the operation of Three Mile Island Nuclear Station had no adverse radiological impact on the environment, and there were no known active releases at the end of 2006 into the groundwater at Three Mile Island Nuclear Station.

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

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

Tritium was not detected in any of the groundwater or surface water samples at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L. Low levels of tritium were detected at concentrations greater than the LLD of 200 pCi/L in 46 of 76 groundwater monitoring locations. The tritium concentrations ranged from 201 ± 111 pCi/L to 14,100 ± 1460 pCi/L. Tritium that was detected in groundwater at the Station is believed to be the result of isolated historical releases and/or background from

external sources greater than 200 pCi/L.

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II. Introduction

The Three Mile Island Nuclear Station (TMINS) established a revised and more comprehensive groundwater monitoring program in 2006 as part of an Exelon Nuclear fleetwide assessment.

Conestoga Rovers & Associates (CRA) performed the initial assessment. CRA prepared a Hydrogeologic Investigation Report (HIR) for Exelon to determine whether groundwater at and near TMINS has been adversely impacted by any releases of radionuclides. The CRA report documents the results of the May 2006 Hydrogeologic Investigation Work Plan. CRA assessed groundwater quality at the Station in locations designated as Areas for Further Evaluation. The results and conclusions of this Phase 1 study were made available to state and federal regulators as well as the public on an Exelon web site in station specific reports. The summary report for the Three Mile Island Nuclear Station may be found at the following web page:

http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm

As a result of the Phase 1 study, the Radiological Groundwater Protection Program (RGPP) was revised to a long term monitoring program. This report covers those analyses performed by Teledyne Brown Engineering (TBE) on well water and surface water samples collected in 2006. All wells that were established were located in the owner controlled areas of the site. No offsite wells were established because the groundwater movement is to the Susquehanna River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. (Midwest Labs) on samples collected in 2006.

A. Objective of the RGPP

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

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

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

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

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

5. Regularly assess analytical results to identify adverse trends.

6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at Three Mile Island Nuclear Station as discussed below:

1. Exelon and its consultant identified additional groundwater well locations as described in the Phase 1 study. Phase 1 studies were conducted by Connestoga Rovers and Associates (CRA) and the results and conclusions were made available to state and federal regulators as well as the public on an Exelon web site in station specific reports. http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm

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

3. Three Mile Island Nuclear Station will continue to perform routine sampling and radiological analysis of water from selected locations.

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

5. Three Mile Island Nuclear Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

1. Sample Collection

Sample locations can be found in Table A-1 and Figures A-1 and A-2, Appendix A.

Groundwater and Surface Water

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures following EPA methods. Both groundwater and surface water are collected. Sample locations, sample collection frequencies and analytical frequencies are controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, industry cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables as data are received.

Analytical data results are reviewed by both station personnel and an independent 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." 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 is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. This “cosmogenic” tritium combines with oxygen to form tritiated water, which will then enter the hydrologic cycle. Below ground, “lithogenic” tritium is produced by the bombardment of natural lithium present in crystalline rocks by neutrons produced by the radioactive decay of naturally abundant uranium and thorium. Lithogenic production of tritium is usually negligible compared to other sources due to the limited abundance of lithium in rock. The lithogenic tritium is introduced directly to groundwater.

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

production continue to influence tritium concentrations in the environment.

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

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 (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 and EIML to analyze the environmental samples for radioactivity for the Three Mile Island Nuclear Station RGPP in 2006.

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

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

2. Concentrations of strontium in groundwater and surface water.

3. Concentrations of tritium in groundwater and surface water.

B. Data Interpretation

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

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

2. Laboratory Measurements Uncertainty

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

Statistically, the exact value of a measurement is expressed as a range with a stated level of confidence. The convention is to report results with a 95% level of confidence. The uncertainty comes from calibration standards, sample volume or weight measurements, sampling uncertainty and other factors. Exelon reports the uncertainty of a measurement created by statistical process (counting error)

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

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

For groundwater and surface water 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, Cs-134, Cs-137, Ba-140 and La-140 were reported.

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

IV. Results and Discussion

A. Groundwater Results

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

Tritium

Samples from 76 locations were analyzed for tritium activity (Table B–I.1 and B-I.2, Appendix B). Tritium values ranged from the detection limit to 14,100 pCi/l. Two of the locations were offsite drinking water wells with no detectable concentration of tritium. The results of samples from the initial stage of Phase 1 wells were used in conjunction with a discovered leak from a condensate storage tank underground line to locate additional monitoring wells. Elevated tritium results elsewhere in the owner controlled area are attributable to historical leaks that have been reported previously in Annual Radiological Environmental Operating Reports (AREOR).

Strontium

Strontium-90 was detected in one of 136 samples at a concentration of 1.4 pCi/liter. This was less than the required detection limit of 2.0 pCi/liter, and reanalysis of this sample showed no detectable Strontium-90. (Table B–I.3 and B-I.4, Appendix B).

Gamma Emitters and Strontium

Potassium-40 was detected in 28 of 137 samples. The concentrations ranged from 24 pCi/liter to 263 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.5 and B–I.6, Appendix B).

B. Leaks, Spills, and Releases

As discussed above, a leak was discovered in a condensate storage tank underground pipe in June 2006. Water with tritium activity was found leaking from a manhole in TMI's North Parking Lot. The source of the water was TMI secondary plant water and the concentration of tritium in the source tank was 5.12 E-5 uCi/ml. An investigation was performed under TMI's Corrective Action Program in issue report number 495884. The results of the investigation determined that water had leaked from a pipe into a telephone equipment room and flowed through conduit to the manhole. The leak developed in a 4" condensate tank underground de-ice line. Backfill material caused a flaw in the external pipe coating which caused localized corrosion and a through wall leak. The line was excavated and repaired. Offsite groundwater tritium concentrations were unaffected by this event.

On August 4, 2006, Operations was bypassing FS-T-1 (Altitude Tank) in preparation for scheduled maintenance on FS-T-1. While performing the

bypass evolution, an Auxiliary Operator stationed at the Pretreatment Building reported observing water emerging from the blacktop/pavement and draining into a yard drain. A pressure spike caused the pipe to leak the leak was contained and diverted. Approximately 2140 gals with a tritium concentration of 1.78E-6 uCi/ml was estimated to have flowed to the yard drain system before the leak was contained. Issue Report 517006 documents this event in TMI's corrective action program.

On October 24, 2006, a leak collection bucket for the Industrial Coolers was found to be overflowing due to the sump pump breaker being tripped. The breaker was reset, and approximately 1440 gallons of water with a tritium concentration of 1.34 E-6 uCi/ml was estimated to have gone into the roof drain system, and then to the yard drains before the spill was discovered. Issue Report 548691 documents this event in TMI's corrective action program.

As a result of the comprehensive groundwater study performed by consultants at TMI during 2006, peripheral wells near the edge of the island were installed. Because of low levels of tritium being present in these wells notifications were made to federal, state and local officials that TMI now believes very low levels of tritium in groundwater are now migrating from the site into the river. A release L200612627 was calculated to account for this unplanned release from the site boundary. A detailed hydrogeologist calculation determined the groundwater flow from the island and the expected average tritium concentration. The adult total body dose was determined to be 2.34E-2 mrem/yr. Corrective actions for this issue were under issue report 528426.

C. Actions Taken

1. Compensatory Actions

   TMI has implemented a buried pipe program in accordance with ER-AA-5400, Buried Pipe and Raw Water Corrosion Guide. TMI has completed the identification, database and ranking phases of the program. Soil data collection is on going and mitigation for some pipes will occur in 2007. Funding is in place for 2007 to put in three buried anodes. Funding in 2006 was used to purchase equipment to collect soil data. A training session completed recently for the engineering department shared the extent of condition for TMI's recent underground pipe leaks.

2. Installation of Monitoring Wells

   TMI installed 31 new monitoring wells in 2006. TMI now has over 60

monitoring locations that it regularly samples for trending historical leaks and detecting new leaks.

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APPENDIX A

LOCATION DESIGNATION & DISTANCE

Figure A – 1

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations and Distance, Three Mile Island Nuclear Station, 2006

Site	Site Type
#3	Monitoring Well
48N	Monitoring Well
48S	Production Potable Well
A3-2	Surface Water
CLOSED DEMO DW10	Monitoring Well
E1-2	Monitoring Well, Offsite
FS-H22	Monitoring Well
GP-1	Monitoring Well
GP-12	Monitoring Well
GP-6	Monitoring Well
GP-8	Monitoring Well
GP-9	Monitoring Well
J1-2	Surface Water
MS-1	Monitoring Well
MS-19	Monitoring Well
MS-2	Monitoring Well
MS-20	Monitoring Well
MS-21	Monitoring Well
MS-22	Monitoring Well
MS-3	Monitoring Well
MS-4	Monitoring Well
MS-5	Monitoring Well
MS-6	Monitoring Well
MS-7	Monitoring Well
MS-8	Monitoring Well
MW-1	Monitoring Well
MW-2	Monitoring Well
MW-3	Monitoring Well
MW-4	Monitoring Well
N2-1	Monitoring Well, Offsite
NW-A	Production Well
NW-B	Production Well
NW-C	Production Well
NW-CW	Clearwell
OS-13B	Monitoring Well
OS-14	Monitoring Well
OS-16	Monitoring Well
OS-17	Monitoring Well
OS-18	Monitoring Well
OSF	Production Well
Q9-1	Surface Water
RW-1	Monitoring Well
RW-2	Monitoring Well
SW-E-1	Surface Water
SW-E-2	Surface Water
SW-E-3	Surface Water
MW-TMI-10D	Monitoring Well
MW-TMI-10I	Monitoring Well
MW-TMI-10S	Monitoring Well
MW-TMI-12S	Monitoring Well
MW-TMI-13I	Monitoring Well
MW-TMI-13S	Monitoring Well
MW-TMI-14D	Monitoring Well
MW-TMI-14I	Monitoring Well
MW-TMI-14S	Monitoring Well
MW-TMI-16D	Monitoring Well
MW-TMI-16I	Monitoring Well

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations and Distance, Three Mile Island Nuclear Station, 2006

Site	Site Type
MW-TMI-17D	Monitoring Well
MW-TMI-17I	Monitoring Well
MW-TMI-18D	Monitoring Well
MW-TMI-19D	Monitoring Well
MW-TMI-19I	Monitoring Well
MW-TMI-1D	Monitoring Well
MW-TMI-2D	Monitoring Well
MW-TMI-3I	Monitoring Well
MW-TMI-4I	Monitoring Well
MW-TMI-4S	Monitoring Well
MW-TMI-5D	Monitoring Well
MW-TMI-6D	Monitoring Well
MW-TMI-6I	Monitoring Well
MW-TMI-7S	Monitoring Well
MW-TMI-8S	Monitoring Well
MW-TMI-9I	Monitoring Well
TRAINING CENTER	Monitoring Well
UST CLOSURE WELL	Monitoring Well

APPENDIX B

DATA TABLES

TABLE B-I.1 CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3	Sr-90	
#3	06/06/06	< 183	< 1.36	**
#3	10/23/06	360 ± 118*	< 0.78	**
#3	10/23/06	236 ± 124*		
48N	05/31/06	223 ± 114	< 1.70	**
48N	05/31/06	< 175	< 1.53	**
48S	05/31/06	223 ± 116	< 1.17	**
48S	10/31/06	< 154 *	< 1.35	**
48S	01/19/06	184 ± 103		
48S	07/24/06	< 178 *		
CLOSED DEMO DW10	06/13/06	< 167	< 1.24	**
CLOSED DEMO DW10	10/31/06	< 154 *	< 1.16	**
E1-2	06/06/06	< 167	< 1.18	**
E1-2	10/31/06	< 179 *	< 1.70	**
E1-2	01/19/06	< 164		
FS-H22	05/04/06	515 ± 132		
GP-1	01/19/06	< 176		
GP-1	04/20/06	432 ± 148		
GP-12	01/19/06	< 168		
GP-6	10/27/06	348 ± 102*		
GP-6	10/27/06	263 ± 121*		
GP-6	01/19/06	< 168		
GP-6	04/20/06	224 ± 122		
GP-8	10/27/06	359 ± 120*		
GP-8	10/27/06	400 ± 125*		
GP-8	01/19/06	< 175		
GP-9	01/19/06	< 168		
GP-9	04/20/06	393 ± 131		
MS-1	01/16/06	561 ± 115		
MS-1	03/28/06	728 ± 134		
MS-1	04/20/06	312 ± 123		
MS-1	04/24/06	322 ± 115		
MS-1	04/26/06	305 ± 116		
MS-1	05/01/06	< 176		
MS-1	05/03/06	289 ± 117		
MS-1	05/08/06	701 ± 142		
MS-1	05/11/06	504 ± 130		
MS-1	05/18/06	1430 ± 198		
MS-1	07/24/06	576 ± 148*		
MS-1	05/31/06	2870 ± 176	< 0.76	**
MS-1	10/26/06	356 ± 116*	< 0.81	**
MS-1	10/26/06	< 181 *		
MS-19	01/16/06	187 ± 105		
MS-19	04/24/06	609 ± 149		
MS-19	04/26/06	246 ± 116		
MS-19	05/01/06	< 183		
MS-19	05/03/06	244 ± 116		
MS-19	05/08/06	321 ± 124		
MS-19	05/11/06	255 ± 112		
MS-19	05/18/06	243 ± 113		

* Indicates Distilled Analysis
** Indicates Fast Analysis

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3	Sr-90
MS-19	07/24/06	< 182 *	
MS-19	05/31/06	254 ± 117	< 1.76 **
MS-19	10/25/06	416 ± 114*	1.37 ± 0.51**
MS-19	10/25/06	456 ± 132*	< 1.08
MS-2	01/16/06	431 ± 111	
MS-2	03/28/06	356 ± 118	
MS-2	06/02/06	< 156	< 1.05 **
MS-2	10/24/06	< 173 *	< 0.79 **
MS-20	01/16/06	454 ± 113	
MS-20	03/02/06	488 ± 119	
MS-20	03/28/06	482 ± 120	
MS-20	04/20/06	555 ± 137	
MS-20	04/24/06	504 ± 126	
MS-20	04/26/06	444 ± 131	
MS-20	05/01/06	< 199	
MS-20	05/03/06	462 ± 130	
MS-20	05/08/06	356 ± 118	
MS-20	05/11/06	362 ± 117	
MS-20	05/18/06	569 ± 135	
MS-20	07/25/06	317 ± 127*	
MS-20	06/07/06	390 ± 127	< 1.88 **
MS-20	10/24/06	732 ± 155*	< 0.98 **
MS-20	10/24/06	663 ± 125*	
MS-20	04/09/07	295 ± 114*	
MS-21	01/16/06	382 ± 111	
MS-21	04/20/06	358 ± 137	
MS-21	04/24/06	506 ± 127	
MS-21	04/26/06	314 ± 123	
MS-21	05/01/06	523 ± 122	
MS-21	05/03/06	598 ± 134	
MS-21	05/08/06	582 ± 135	
MS-21	05/11/06	591 ± 127	
MS-21	05/18/06	566 ± 135	
MS-21	05/25/06	389 ± 129	
MS-21	07/25/06	207 ± 122*	
MS-21	06/07/06	408 ± 129	< 1.60 **
MS-21	10/25/06	524 ± 132*	< 0.87 **
MS-21	10/25/06	299 ± 124*	
MS-21	04/02/07	451 ± 124*	
MS-22	01/16/06	477 ± 115	
MS-22	04/20/06	768 ± 158	
MS-22	04/24/06	4040 ± 445	
MS-22	04/26/06	826 ± 179	
MS-22	05/01/06	676 ± 136	
MS-22	05/03/06	949 ± 153	
MS-22	05/08/06	927 ± 152	
MS-22	05/11/06	1160 ± 172	
MS-22	05/18/06	1380 ± 191	
MS-22	05/25/06	950 ± 237	

* Indicates Distilled Analysis
** Indicates Fast Analysis

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3	Sr-90	
MS-22	07/25/06	1170 ± 178*		
MS-22	06/07/06	1050 ± 166	< 1.45	**
MS-22	10/25/06	1120 ± 123*	< 1.20	**
MS-22	10/25/06	775 ± 185*		
MS-3	06/05/06	278 ± 122	< 1.54	**
MS-3	10/25/06	278 ± 120*	< 0.82	**
MS-3	10/25/06	271 ± 118*		
MS-3 DUP	06/05/06	< 151	< 1.32	**
MS-4	01/16/06	563 ± 115		
MS-4	03/28/06	480 ± 121		
MS-4	06/07/06	472 ± 131	< 1.75	**
MS-4	10/25/06	195 ± 108*	< 0.87	**
MS-4 DUP	06/07/06	426 ± 128	< 1.62	**
MS-5	01/16/06	233 ± 106		
MS-5	06/06/06	185 ± 120	< 1.64	**
MS-5	10/24/06	< 166 *	< 0.82	**
MS-6	06/06/06	< 180	< 1.82	**
MS-6	10/24/06	< 173 *	< 1.10	**
MS-7	01/16/06	334 ± 108		
MS-7	05/25/06	205 ± 126		
MS-7	05/31/06	305 ± 115	< 1.51	**
MS-7	10/25/06	201 ± 111*	< 0.82	**
MS-7	10/25/06	262 ± 126*		
MS-8	01/16/06	926 ± 125		
MS-8	03/28/06	1050 ± 136		
MS-8	04/20/06	928 ± 155		
MS-8	04/24/06	983 ± 155		
MS-8	04/26/06	733 ± 140		
MS-8	05/01/06	862 ± 131		
MS-8	05/03/06	866 ± 148		
MS-8	05/08/06	980 ± 162		
MS-8	05/11/06	1080 ± 166		
MS-8	05/18/06	1190 ± 174		
MS-8	05/25/06	1090 ± 172		
MS-8	06/05/06	799 ± 126	< 1.00	**
MS-8	10/25/06	314 ± 123*	< 0.83	**
MS-8	10/25/06	276 ± 123*		
MW-1	01/16/06	223 ± 104		
MW-1	05/26/06	< 167	< 1.95	**
MW-1	10/31/06	355 ± 118*	< 1.05	**
MW-1	10/31/06	239 ± 121*		
MW-2	01/16/06	< 160		
MW-2	05/26/06	263 ± 121	< 1.56	**
MW-2	10/31/06	181 ± 115*	< 1.48	**
MW-3	05/26/06	180 ± 113	< 1.49	**
MW-3	10/31/06	< 180 *	< 1.38	**
MW-4	01/16/06	301 ± 106		
MW-4	05/26/06	< 169	< 0.81	**
MW-4	10/30/06	281 ± 117*	< 1.45	**

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3		Sr-90	
MW-4	10/30/06	< 190	*		
MW-TMI-10D	06/13/06	522 ± 130		< 1.81	**
MW-TMI-10D	10/27/06	396 ± 133*		< 1.01	**
MW-TMI-10D	10/27/06	555 ± 140*			
MW-TMI-10D	07/24/06	714 ± 149*			
MW-TMI-10D DUP	06/13/06	631 ± 136		< 1.66	**
MW-TMI-10I	06/01/06	13500 ± 1390		< 1.23	**
MW-TMI-10I	10/27/06	3750 ± 240*		< 1.33	**
MW-TMI-10I	10/27/06	4190 ± 488*			
MW-TMI-10I	10/27/06	3880 ± 244*		< 1.87	**
MW-TMI-10I	10/27/06	4730 ± 536*			
MW-TMI-10I	07/24/06	7180 ± 769*			
MW-TMI-10S	06/06/06	11500 ± 1200		< 1.32	**
MW-TMI-10S	10/27/06	3250 ± 227*		< 1.26	**
MW-TMI-10S	10/27/06	3370 ± 400*			
MW-TMI-10S	07/24/06	14100 ± 1460*			
MW-TMI-12S	06/13/06	2690 ± 319			
MW-TMI-12S	10/23/06	9230 ± 1020*		< 0.86	**
MW-TMI-12S	10/23/06	9010 ± 505*			
MW-TMI-12S	10/23/06	9370 ± 1060*		< 0.88	**
MW-TMI-12S	10/23/06	9280 ± 514*			
MW-TMI-12S	04/02/07	5850 ± 629*			
MW-TMI-12S	04/09/07	5670 ± 621*			
MW-TMI-12S	07/25/06	< 176	*		
MW-TMI-13H	04/02/07	3220 ± 384*			
MW-TMI-13I	06/08/06	2250 ± 161		< 0.92	**
MW-TMI-13I	10/26/06	1770 ± 254*		< 0.81	**
MW-TMI-13I	10/26/06	1570 ± 155*			
MW-TMI-13I	04/02/07	3420 ± 404*			
MW-TMI-13I	07/24/06	2270 ± 282*			
MW-TMI-13S	06/08/06	403 ± 115		< 0.76	**
MW-TMI-13S	10/31/06	234 ± 126*		< 1.27	**
MW-TMI-13S	10/31/06	307 ± 132*			
MW-TMI-14D	06/13/06	1510 ± 204		< 1.14	**
MW-TMI-14D	10/26/06	1950 ± 276*		< 0.84	**
MW-TMI-14D	10/26/06	1740 ± 161*			
MW-TMI-14D	07/24/06	1160 ± 179*			
MW-TMI-14I	06/07/06	597 ± 140		< 1.89	**
MW-TMI-14I	10/26/06	664 ± 139*		< 0.88	**
MW-TMI-14I	10/26/06	626 ± 135*			
MW-TMI-14I	07/24/06	539 ± 142*			
MW-TMI-14S	10/26/06	561 ± 131*		< 0.83	**
MW-TMI-14S	10/26/06	427 ± 130*			
MW-TMI-14S	07/24/06	294 ± 127*			
MW-TMI-16D	08/08/06	416 ± 131*		< 1.31	**
MW-TMI-16D	10/26/06	256 ± 111*		< 1.00	**
MW-TMI-16D	10/26/06	223 ± 122*			
MW-TMI-16D	04/09/07	4360 ± 490*			
MW-TMI-16H	04/09/07	17100 ± 1750*			

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3			Sr-90	
MW-TMI-16I	08/08/06	504	±	135*	< 1.59	**
MW-TMI-16I	10/26/06	652	±	145*	< 0.87	**
MW-TMI-16I	10/26/06	635	±	134*		
MW-TMI-16I	10/26/06	513	±	130*	< 0.87	**
MW-TMI-16I	10/26/06	600	±	135*		
MW-TMI-16I	04/02/07	14400	±	1490*		
MW-TMI-16I	04/09/07	19200	±	1960*		
MW-TMI-17D	08/04/06	< 177		*	< 1.31	**
MW-TMI-17D	10/31/06	< 176		*	< 1.59	**
MW-TMI-17I	08/04/06	292	±	124*	< 1.70	**
MW-TMI-17I	10/31/06	252	±	125*	< 1.32	**
MW-TMI-17I	10/31/06	231	±	131*		
MW-TMI-18D	08/08/06	225	±	119*	< 1.30	**
MW-TMI-18D	10/30/06	200	±	115*	< 1.39	**
MW-TMI-19D	08/09/06	317	±	126*	< 1.39	**
MW-TMI-19D	08/09/06	331	±	129*	< 1.51	**
MW-TMI-19D	10/30/06	200	±	120*	< 1.18	**
MW-TMI-19I	08/09/06	257	±	119*	< 0.89	**
MW-TMI-19I	10/30/06	381	±	121*	< 0.95	**
MW-TMI-19I	10/30/06	336	±	132*		
MW-TMI-1D	06/01/06	440	±	127	< 0.99	**
MW-TMI-1D	10/30/06	395	±	125*	< 0.68	**
MW-TMI-1D	10/30/06	431	±	134*		
MW-TMI-1D	07/24/06	384	±	132*		
MW-TMI-2D	06/01/06	954	±	153	< 1.65	**
MW-TMI-2D	10/30/06	943	±	154*	< 1.61	**
MW-TMI-2D	10/30/06	886	±	165*		
MW-TMI-2D	07/24/06	1130	±	176*		
MW-TMI-3I	06/08/06	292	±	112	< 0.84	**
MW-TMI-3I	11/01/06	322	±	123*	< 1.47	**
MW-TMI-3I	11/01/06	227	±	130*		
MW-TMI-4I	06/01/06	236	±	114	< 1.40	**
MW-TMI-4I	10/30/06	< 181		*	< 1.17	**
MW-TMI-4S	06/08/06	< 166			< 0.96	**
MW-TMI-4S	10/31/06	< 182		*		
MW-TMI-5D	06/08/06	298	±	112	< 0.57	**
MW-TMI-5D	10/30/06	195	±	114*	< 1.64	**
MW-TMI-6D	05/31/06	275	±	117	< 1.34	**
MW-TMI-6D	10/25/06	396	±	121*	< 0.83	**
MW-TMI-6D	10/25/06	416	±	130*		
MW-TMI-6I	05/31/06	772	±	144	< 1.63	**
MW-TMI-7S	06/08/06	237	±	117	< 1.18	**
MW-TMI-7S	10/31/06	< 176		*	< 1.24	**
MW-TMI-8S	06/01/06	246	±	109	< 1.37	**
MW-TMI-8S	10/30/06	219	±	118*	< 1.28	**
MW-TMI-8S	10/30/06	286	±	126*		
MW-TMI-8S DUP	06/01/06	349	±	112	< 1.25	**
MW-TMI-9I	08/04/06	198	±	119*	< 1.56	**
MW-TMI-9I	10/30/06	< 177		*	< 1.16	**

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.1 CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3		Sr-90	
N2-1	01/19/06	< 162			
N2-1	06/06/06	< 180		< 1.54	**
N2-1	10/31/06	< 180	*	< 1.10	**
NW-A	02/02/06	1110 ± 129			
NW-A	04/20/06	1480 ± 203			
NW-A	05/30/06	1480 ± 200		< 1.61	**
NW-A	10/29/06	754 ± 147*		< 1.88	**
NW-A	10/29/06	873 ± 170*			
NW-B	02/02/06	1430 ± 138			
NW-B	04/20/06	1390 ± 195			
NW-B	05/30/06	2420 ± 293		< 0.74	**
NW-C	02/02/06	3040 ± 172			
NW-C	04/20/06	3740 ± 423			
NW-C	05/30/06	3650 ± 416		< 0.67	**
NW-C	10/29/06	3840 ± 241*		< 1.27	**
NW-C	10/29/06	3570 ± 429*			
NW-C	10/29/06	3520 ± 227*		< 1.02	**
NW-C	10/29/06	3960 ± 463*			
NW-CW	02/02/06	1080 ± 130			
NW-CW	04/20/06	1440 ± 202			
OS-13B	06/05/06	261 ± 107		< 1.09	**
OS-14	01/16/06	< 166			
OS-14	06/06/06	< 183		< 1.35	**
OS-16	10/24/06	< 172	*	< 1.04	**
OS-17	10/24/06	204 ± 111*		< 1.02	**
OS-17	10/24/06	355 ± 119*			
OS-18	01/19/06	347 ± 111			
OS-18	04/20/06	429 ± 151			
OS-18	04/24/06	431 ± 123			
OS-18	04/26/06	335 ± 122			
OS-18	05/01/06	< 190			
OS-18	05/03/06	462 ± 125			
OS-18	05/08/06	337 ± 123			
OS-18	05/11/06	341 ± 117			
OS-18	05/18/06	498 ± 131			
OS-18	05/25/06	261 ± 123			
OS-18	07/24/06	< 178	*		
OS-18	05/31/06	399 ± 126		< 1.60	**
OS-18	10/31/06	261 ± 124*		< 1.07	**
OS-18	10/31/06	378 ± 135*			
OSF	01/19/06	526 ± 114			
OSF	04/20/06	523 ± 133			
OSF	04/24/06	538 ± 131			
OSF	04/26/06	497 ± 126			
OSF	05/01/06	477 ± 121			
OSF	05/03/06	575 ± 133			
OSF	05/08/06	548 ± 133			
OSF	05/11/06	408 ± 121			
OSF	05/18/06	565 ± 135			

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.1 CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3			Sr-90	
OSF	05/30/06	424	±	124	< 1.16	**
OSF	10/31/06		±		< 1.32	**
OSF	10/31/06	377	±	136*		
OSF	10/31/06	491	±	127*		
RW-1	01/16/06	< 168				
RW-1	03/02/06	< 171				
RW-1	04/20/06	< 180				
RW-1	04/24/06	286	±	115		
RW-1	04/26/06	< 173				
RW-1	05/01/06	< 181				
RW-1	05/03/06	218	±	117		
RW-1	05/08/06	< 178				
RW-1	05/11/06	< 157				
RW-1	05/18/06	268	±	111		
RW-1	10/23/06	< 168		*	< 0.92	**
RW-2	01/16/06	421	±	112		
RW-2	03/02/06	424	±	115		
RW-2	03/28/06	5580	±	224		
RW-2	03/28/06	5960	±	652		
RW-2	04/18/06	12000	±	1250		
RW-2	04/20/06	11800	±	1310		
RW-2	04/24/06	12400	±	1290		
RW-2	04/26/06	10500	±	1090		
RW-2	04/28/06				< 0.33	
RW-2	05/01/06	5170	±	212		
RW-2	05/03/06	3800	±	425		
RW-2	05/05/06	3220	±	371		
RW-2	05/08/06	2300	±	283		
RW-2	05/11/06	2370	±	287		
RW-2	05/18/06	2420	±	284		
RW-2	05/25/06	2150	±	272		
RW-2	07/25/06	436	±	138*		
RW-2	06/06/06	5660	±	621	< 1.35	**
RW-2	10/23/06	7490	±	872*	< 0.79	**
RW-2	10/23/06	7630	±	468*		
RW-2	10/23/06	8410	±	937*	< 0.80	**
RW-2	10/23/06	8150	±	462*		
RW-2	04/09/07	11800	±	1230*		
RW-2 Dup	04/24/06	12500	±	1300		
RW-2 (24.39')	05/05/06	3660	±	417		
RW-2 (26.39')	05/05/06	3180	±	370		
RW-2 (28.39')	05/05/06	2860	±	339		
RW-2 (30.39')	05/05/06	2950	±	345		
RW-2 30.65FT	04/28/06	7950	±	254		
RW-2 DUP	06/06/06	6700	±	723	< 1.56	**
TRAINING CENTER	06/06/06	< 168			< 1.16	**
TRAINING CENTER	10/31/06	< 177		*	< 1.53	**
UST CLOSURE WELL	05/30/06	< 153			< 1.29	**
UST CLOSURE WELL	10/31/06	< 178		*	< 1.51	**

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.2 CONCENTRATIONS OF TRITIUM AND STRONTIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	H-3		Sr-90	
A3-2	06/06/06	< 166		< 1.1	**
J1-2	06/06/06	< 178		< 1.5	**
Q9-1	06/06/06	< 170		< 1.5	**
SW-E-1	10/31/06	169 ± 98*		< 1.7	**
SW-E-2	10/31/06	157 ± 96*		< 1.2	**
SW-E-3	10/31/06	< 152	*	< 1.4	**

* Indicates Distilled Analysis

** Indicates Fast Analysis

TABLE B-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
#3	06/06/06	< 46	< 70	< 5	< 5	< 10	< 5	< 13	< 5	< 9	< 6	< 5	< 29	< 9
#3	10/23/06	< 17	< 23	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 21	< 7
48N	05/31/06	< 27	< 27	< 3	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 3	< 19	< 7
48N	05/31/06	< 25	32 ± 31	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 3	< 3	< 18	< 5
48S	05/31/06	< 36	< 33	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 5	< 4	< 23	< 7
48S	10/31/06	< 31	< 69	< 3	< 4	< 8	< 3	< 6	< 3	< 7	< 3	< 3	< 42	< 14
A3-2	06/06/06	< 43	< 79	< 5	< 5	< 11	< 5	< 12	< 5	< 9	< 5	< 6	< 29	< 10
CLOSED DEMO DW10	06/13/06	< 29	< 59	< 3	< 3	< 6	< 3	< 8	< 4	< 6	< 4	< 4	< 14	< 5
CLOSED DEMO DW10	10/31/06	< 27	< 49	< 2	< 3	< 7	< 2	< 5	< 3	< 5	< 2	< 2	< 38	< 11
E1-2	06/06/06	< 45	< 73	< 5	< 5	< 9	< 5	< 15	< 6	< 8	< 10	< 5	< 28	< 9
E1-2	10/31/06	< 25	< 37	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 46	< 14
J1-2	06/06/06	< 36	< 37	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 4	< 4	< 19	< 6
MS-1	05/31/06	< 37	< 65	< 4	< 4	< 8	< 3	< 9	< 4	< 7	< 4	< 4	< 24	< 8
MS-1	10/26/06	< 27	< 18	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 2	< 2	< 32	< 11
MS-19	05/31/06	< 38	< 62	< 4	< 4	< 9	< 4	< 9	< 5	< 7	< 5	< 4	< 25	< 8
MS-19	10/25/06	< 20	< 39	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 25	< 8
MS-2	06/02/06	< 54	< 51	< 6	< 6	< 12	< 5	< 12	< 6	< 10	< 6	< 6	< 39	< 12
MS-2	10/24/06	< 22	< 39	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 29	< 10
MS-20	06/07/06	< 36	< 38	< 4	< 4	< 9	< 4	< 9	< 4	< 7	< 4	< 4	< 19	< 7
MS-20	10/24/06	< 22	< 16	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 42	< 14
MS-21	06/07/06	< 48	< 47	< 6	< 6	< 12	< 6	< 14	< 6	< 9	< 7	< 6	< 31	< 11
MS-21	10/25/06	< 42	< 36	< 4	< 5	< 11	< 4	< 7	< 5	< 8	< 4	< 4	< 56	< 15
MS-22	06/07/06	< 47	< 68	< 5	< 5	< 10	< 5	< 12	< 6	< 10	< 7	< 5	< 26	< 9
MS-22	10/25/06	< 28	31 ± 29	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 42	< 15
MS-3	06/05/06	< 34	< 34	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 4	< 4	< 22	< 8
MS-3 DUP	06/05/06	< 33	64 ± 40	< 4	< 3	< 7	< 4	< 8	< 4	< 7	< 4	< 4	< 20	< 7
MS-3	10/25/06	< 24	< 36	< 2	< 2	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 42	< 15
MS-4	06/07/06	< 48	< 47	< 6	< 6	< 10	< 6	< 13	< 6	< 10	< 6	< 6	< 30	< 11
MS-4 DUP	06/07/06	< 55	< 50	< 6	< 6	< 11	< 5	< 13	< 6	< 10	< 7	< 6	< 32	< 10
MS-4	10/25/06	< 19	< 41	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 25	< 8
MS-5	06/06/06	< 31	< 35	< 4	< 4	< 8	< 4	< 9	< 4	< 6	< 4	< 3	< 19	< 6
MS-5	10/24/06	< 24	< 18	< 2	< 2	< 6	< 2	< 4	< 3	< 4	< 2	< 2	< 40	< 14
MS-6	06/06/06	< 40	141 ± 40	< 5	< 5	< 10	< 5	< 11	< 5	< 9	< 5	< 5	< 24	< 8
MS-6	10/24/06	< 25	< 18	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 47	< 15
MS-7	05/31/06	< 45	< 84	< 5	< 5	< 11	< 5	< 12	< 5	< 10	< 5	< 5	< 30	< 10

TABLE B-I.3 CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
MS-7	10/25/06	< 22	< 16	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 27	< 8
MS-8	06/05/06	< 46	90 ± 48	< 5	< 5	< 12	< 5	< 11	< 5	< 9	< 6	< 5	< 28	< 8
MS-8	10/25/06	< 29	35 ± 32	< 3	< 3	< 7	< 3	< 5	< 3	< 6	< 2	< 3	< 42	< 11
MW-1	05/26/06	< 52	< 47	< 5	< 6	< 13	< 5	< 14	< 6	< 10	< 6	< 6	< 36	< 10
MW-1	10/31/06	< 34	< 30	< 3	< 3	< 9	< 3	< 6	< 4	< 7	< 3	< 3	< 44	< 15
MW-2	05/26/06	< 49	< 51	< 5	< 6	< 12	< 6	< 12	< 6	< 10	< 6	< 5	< 35	< 13
MW-2	10/31/06	< 33	< 31	< 3	< 4	< 8	< 3	< 7	< 3	< 6	< 3	< 3	< 45	< 15
MW-3	05/26/06	< 46	< 82	< 5	< 5	< 10	< 4	< 11	< 5	< 9	< 5	< 5	< 33	< 10
MW-3	10/31/06	< 39	< 34	< 3	< 4	< 9	< 4	< 7	< 5	< 7	< 3	< 3	< 53	< 14
MW-4	05/26/06	< 37	< 33	< 4	< 4	< 9	< 4	< 8	< 5	< 8	< 4	< 4	< 30	< 10
MW-4	10/30/06	< 30	< 25	< 3	< 3	< 7	< 2	< 6	< 4	< 6	< 3	< 3	< 43	< 13
MW-TMI-10D	06/13/06	< 45	< 67	< 5	< 5	< 9	< 5	< 13	< 5	< 9	< 7	< 5	< 22	< 6
MW-TMI-10D DUP	06/13/06	< 33	< 54	< 4	< 4	< 8	< 4	< 11	< 4	< 7	< 6	< 4	< 16	< 5
MW-TMI-10D	10/27/06	< 18	< 23	< 1	< 2	< 5	< 1	< 3	< 2	< 3	< 1	< 1	< 39	< 12
MW-TMI-10I	06/01/06	< 37	< 40	< 4	< 4	< 9	< 4	< 10	< 4	< 8	< 5	< 4	< 23	< 7
MW-TMI-10I	10/27/06	< 20	< 12	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 1	< 1	< 39	< 13
MW-TMI-10I	10/27/06	< 21	< 15	< 2	< 2	< 6	< 2	< 3	< 2	< 4	< 2	< 2	< 43	< 15
MW-TMI-10S	06/06/06	< 50	< 56	< 5	< 5	< 12	< 5	< 13	< 6	< 9	< 6	< 5	< 27	< 9
MW-TMI-10S	10/27/06	< 19	< 28	< 1	< 2	< 5	< 1	< 3	< 2	< 4	< 1	< 2	< 40	< 14
MW-TMI-12S	10/23/06	< 35	< 62	< 3	< 4	< 8	< 3	< 7	< 4	< 7	< 3	< 3	< 52	< 14
MW-TMI-12S	10/23/06	< 25	43 ± 28	< 2	< 3	< 7	< 2	< 4	< 3	< 4	< 2	< 2	< 45	< 15
MW-TMI-13I	06/08/06	< 53	< 49	< 6	< 6	< 11	< 6	< 16	< 6	< 10	< 9	< 6	< 28	< 9
MW-TMI-13I	10/26/06	< 31	< 63	< 3	< 3	< 8	< 4	< 6	< 4	< 6	< 3	< 3	< 38	< 11
MW-TMI-13S	06/08/06	< 49	< 59	< 5	< 5	< 11	< 6	< 15	< 6	< 10	< 7	< 6	< 28	< 10
MW-TMI-13S	10/31/06	< 21	< 17	< 2	< 2	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 41	< 13
MW-TMI-14D	06/13/06	< 29	< 57	< 3	< 3	< 7	< 3	< 9	< 4	< 6	< 4	< 4	< 14	< 5
MW-TMI-14D	10/26/06	< 47	< 75	< 4	< 4	< 11	< 4	< 8	< 5	< 8	< 4	< 4	< 57	< 14
MW-TMI-14I	06/07/06	< 39	< 69	< 5	< 4	< 10	< 5	< 12	< 5	< 8	< 6	< 4	< 22	< 8
MW-TMI-14I	10/26/06	< 19	< 17	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 23	< 8
MW-TMI-14S	10/26/06	< 16	< 13	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 2	< 20	< 6
MW-TMI-16D	08/08/06	< 41	< 52	< 5	< 5	< 11	< 6	< 11	< 6	< 9	< 5	< 5	< 20	< 8
MW-TMI-16D	10/26/06	< 20	< 35	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 23	< 7
MW-TMI-16I	08/08/06	< 40	< 49	< 4	< 5	< 12	< 6	< 13	< 6	< 9	< 5	< 5	< 20	< 7
MW-TMI-16I	10/26/06	< 24	< 42	< 2	< 2	< 6	< 2	< 5	< 3	< 5	< 2	< 2	< 28	< 9
MW-TMI-16I	10/26/06	< 17	< 14	< 1	< 2	< 4	< 2	< 3	< 2	< 3	< 1	< 2	< 19	< 6

TABLE B-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
MW-TMI-17D	08/04/06	< 23	< 54	< 3	< 3	< 5	< 3	< 5	< 3	< 4	< 3	< 3	< 11	< 3
MW-TMI-17D	10/31/06	< 32	< 68	< 3	< 3	< 9	< 3	< 7	< 4	< 7	< 3	< 3	< 45	< 14
MW-TMI-17I	08/04/06	< 30	< 35	< 3	< 3	< 7	< 4	< 10	< 4	< 6	< 4	< 4	< 14	< 5
MW-TMI-17I	10/31/06	< 22	< 16	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 38	< 13
MW-TMI-18D	08/08/06	< 43	< 46	< 5	< 5	< 10	< 5	< 11	< 6	< 9	< 5	< 5	< 20	< 7
MW-TMI-18D	10/30/06	< 34	< 24	< 3	< 3	< 8	< 3	< 5	< 4	< 6	< 3	< 3	< 47	< 15
MW-TMI-19D	08/09/06	< 56	< 72	< 6	< 6	< 9	< 6	< 11	< 8	< 10	< 7	< 7	< 24	< 6
MW-TMI-19D	08/09/06	< 46	< 87	< 5	< 5	< 11	< 6	< 12	< 7	< 9	< 5	< 6	< 19	< 7
MW-TMI-19D	10/30/06	< 21	< 15	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 46	< 12
MW-TMI-19I	08/09/06	< 51	< 58	< 6	< 5	< 10	< 5	< 12	< 8	< 9	< 6	< 5	< 22	< 9
MW-TMI-19I	10/30/06	< 21	< 16	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 43	< 14
MW-TMI-1D	06/01/06	< 33	169 ± 43	< 3	< 4	< 8	< 4	< 8	< 4	< 6	< 4	< 4	< 21	< 7
MW-TMI-1D	10/30/06	< 21	89 ± 46	< 1	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 38	< 13
MW-TMI-2D	06/01/06	< 38	< 39	< 4	< 4	< 9	< 4	< 10	< 4	< 8	< 5	< 4	< 22	< 8
MW-TMI-2D	10/30/06	< 26	< 16	< 2	< 3	< 6	< 3	< 4	< 3	< 5	< 2	< 2	< 46	< 14
MW-TMI-3I	06/08/06	< 36	< 35	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 5	< 4	< 20	< 6
MW-TMI-3I	11/01/06	< 30	43 ± 39	< 3	< 3	< 7	< 3	< 5	< 4	< 6	< 3	< 3	< 40	< 13
MW-TMI-4I	06/01/06	< 34	< 38	< 3	< 4	< 8	< 4	< 8	< 4	< 7	< 4	< 4	< 21	< 8
MW-TMI-4I	10/30/06	< 22	< 28	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 41	< 14
MW-TMI-4S	06/08/06	< 51	77 ± 54	< 6	< 6	< 13	< 6	< 13	< 6	< 10	< 7	< 6	< 29	< 10
MW-TMI-5D	06/08/06	< 54	< 52	< 6	< 6	< 11	< 5	< 11	< 6	< 9	< 7	< 6	< 27	< 11
MW-TMI-5D	10/30/06	< 20	< 40	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 1	< 2	< 37	< 13
MW-TMI-6D	05/31/06	< 40	< 41	< 4	< 5	< 10	< 5	< 9	< 4	< 8	< 5	< 5	< 24	< 9
MW-TMI-6D	10/25/06	< 19	< 14	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 2	< 2	< 24	< 8
MW-TMI-6I	05/31/06	< 40	< 39	< 4	< 4	< 9	< 4	< 10	< 5	< 8	< 5	< 4	< 27	< 9
MW-TMI-7S	06/08/06	< 49	< 77	< 5	< 5	< 12	< 6	< 14	< 6	< 10	< 7	< 6	< 29	< 8
MW-TMI-7S	10/31/06	< 19	< 32	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 1	< 2	< 36	< 13
MW-TMI-8S	06/01/06	< 36	< 38	< 4	< 4	< 9	< 4	< 9	< 4	< 7	< 4	< 4	< 25	< 9
MW-TMI-8S DUP	06/01/06	< 36	< 62	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 4	< 4	< 25	< 8
MW-TMI-8S	10/30/06	< 21	< 47	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 2	< 2	< 43	< 14
MW-TMI-9I	08/04/06	< 37	< 39	< 4	< 4	< 9	< 4	< 14	< 5	< 7	< 8	< 5	< 18	< 5
MW-TMI-9I	10/30/06	< 26	< 20	< 2	< 3	< 7	< 3	< 5	< 3	< 5	< 2	< 3	< 36	< 14
N2-1	06/06/06	< 33	67 ± 37	< 4	< 4	< 8	< 4	< 9	< 4	< 7	< 5	< 4	< 21	< 7
N2-1	10/31/06	< 22	< 31	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 43	< 15
NW-A	05/30/06	< 40	< 41	< 4	< 4	< 10	< 5	< 10	< 5	< 8	< 5	< 5	< 29	< 9

TABLE B-I.3 CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
NW-A	10/29/06	< 20	< 34	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 1	< 2	< 39	< 14
NW-B	05/30/06	< 39	< 65	< 4	< 4	< 9	< 4	< 11	< 5	< 8	< 5	< 5	< 26	< 9
NW-C	05/30/06	< 31	< 54	< 4	< 4	< 7	< 3	< 8	< 4	< 6	< 4	< 4	< 21	< 6
NW-C	10/29/06	< 28	< 27	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 2	< 3	< 45	< 15
NW-C	10/29/06	< 19	30 ± 27	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 1	< 2	< 40	< 13
OS-13B	06/05/06	< 51	< 47	< 5	< 6	< 12	< 6	< 14	< 6	< 10	< 6	< 6	< 30	< 10
OS-14	06/06/06	< 30	< 35	< 3	< 4	< 8	< 4	< 8	< 4	< 6	< 4	< 4	< 19	< 6
OS-16	10/24/06	< 26	< 17	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 47	< 14
OS-17	10/24/06	< 22	< 52	< 2	< 2	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 44	< 14
OS-18	05/31/06	< 39	< 70	< 4	< 4	< 9	< 4	< 10	< 4	< 8	< 5	< 5	< 27	< 9
OS-18	10/31/06	< 25	36 ± 32	< 2	< 3	< 6	< 3	< 4	< 3	< 5	< 2	< 2	< 46	< 12
OSF	05/30/06	< 43	< 44	< 5	< 5	< 10	< 5	< 11	< 5	< 8	< 5	< 5	< 30	< 10
OSF	10/31/06	< 19	< 14	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 1	< 1	< 37	< 13
Q9-1	06/06/06	< 27	< 47	< 3	< 3	< 6	< 3	< 7	< 3	< 6	< 4	< 3	< 16	< 5
RW-1	10/23/06	< 30	< 55	< 2	< 3	< 8	< 3	< 5	< 3	< 6	< 2	< 2	< 54	< 15
RW-2	04/18/06	< 181	< 390	< 25	< 24	< 46	< 29	< 58	< 24	< 40	< 26	< 25	< 105	< 39
RW-2	04/28/06	< 52	81 ± 55	< 6	< 6	< 13	< 7	< 21	< 7	< 11	< 11	< 6	< 26	< 10
RW-2	06/06/06	< 32	< 34	< 4	< 4	< 7	< 3	< 8	< 4	< 7	< 4	< 4	< 19	< 6
RW-2 DUP	06/06/06	< 39	< 36	< 4	< 4	< 8	< 4	< 10	< 4	< 7	< 5	< 4	< 22	< 7
RW-2	10/23/06	< 31	< 56	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 3	< 3	< 44	< 15
RW-2	10/23/06	< 19	< 13	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 28	< 8
TRAINING CENTER	06/06/06	< 46	101 ± 47	< 5	< 5	< 12	< 5	< 14	< 6	< 10	< 7	< 6	< 29	< 10
TRAINING CENTER	10/31/06	< 34	< 60	< 3	< 4	< 8	< 4	< 6	< 4	< 6	< 3	< 3	< 47	< 15
UST CLOSURE WELL	05/30/06	< 32	< 30	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 4	< 3	< 21	< 7
UST CLOSURE WELL	10/31/06	< 27	< 53	< 2	< 3	< 7	< 2	< 5	< 3	< 5	< 2	< 2	< 36	< 13

TABLE B-I.4 CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

LOCATION	COLLECTION DATE	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
SW-E-1	10/31/06	< 36	< 62	< 3	< 4	< 9	< 3	< 7	< 4	< 7	< 3	< 3	< 47	< 12
SW-E-2	10/31/06	< 31	156 + 38	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 3	< 3	< 40	< 13
SW-E-3	10/31/06	< 27	218 + 44	< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 2	< 3	< 36	< 13

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