

MONTHLY  
PROGRESS REPORT

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

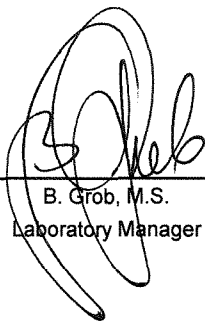
DAVIS-BESSE NUCLEAR POWER STATION  
OAK HARBOR, OHIO

Reporting Period: January-December, 2014

Prepared and Submitted by  
ENVIRONMENTAL, INC.,  
MIDWEST LABORATORY

Project Number: 8003

Reviewed and  
Approved



---

B. Grob, M.S.  
Laboratory Manager

Date 02-11-2015

## TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
	List of Tables .....	iii
1.0	INTRODUCTION .....	vi
2.0	LISTING OF MISSED SAMPLES .....	vii
3.0	DATA TABULATIONS .....	viii
 <u>Appendices</u>		
A	Interlaboratory Comparison Program Results .....	A-1
B	Data Reporting Conventions .....	B-1
C	Supplemental Analyses .....	C-1

## LIST OF TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1	Airborne particulates and iodine collected at Location T-1, analyses for gross beta and iodine-131 .....	1-1
2	Airborne particulates and iodine collected at Location T-2, analyses for gross beta and iodine-131 .....	2-1
3	Airborne particulates and iodine collected at Location T-3, analyses for gross beta and iodine-131 .....	3-1
4	Airborne particulates and iodine collected at Location T-4, analyses for gross beta and iodine-131 .....	4-1
5	Airborne particulates and iodine collected at Location T-7, analyses for gross beta and iodine-131 .....	5-1
6	Airborne particulates and iodine collected at Location T-8, analyses for gross beta and iodine-131 .....	6-1
7	Airborne particulates and iodine collected at Location T-9, analyses for gross beta and iodine-131 .....	7-1
8	Airborne particulates and iodine collected at Location T-11, analyses for gross beta and iodine-131 .....	8-1
9	Airborne particulates and iodine collected at Location T-12, analyses for gross beta and iodine-131 .....	9-1
10	Airborne particulates and iodine collected at Location T-27, analyses for gross beta and iodine-131 .....	10-1
11	Airborne particulate data, gross beta analysis, monthly averages, minima and maxima .....	11-1
12	Airborne particulate samples, quarterly composites by location, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.....	12-1
13	Area monitors (TLD), quarterly.....	13-1
14	Area monitors (TLD), annual.....	14-1
15	Milk, analyses for strontium-89, strontium-90, iodine-131, gamma-emitting isotopes, calcium, stable potassium, and ratios of strontium-90 (pCi) per gram of calcium and cesium-137 (pCi) per gram of potassium .....	15-1
16	Ground water, analyses for gross beta, tritium, strontium-89 and strontium-90 and gamma-emitting isotopes, quarterly collections, .....	16-1
17	Domestic meat, analysis for gamma-emitting isotopes.....	17-1
18	Wild meat, analysis for gamma-emitting isotopes.....	18-1

LIST OF TABLES (continued)

<u>No.</u>	<u>Title</u>	<u>Page</u>
19	Green leafy vegetable, analyses for strontium-89, strontium-90, iodine-131 and gamma-emitting isotopes.....	19-1
20	Fruit, analyses for strontium-89, strontium-90, iodine-131 and gamma-emitting isotopes.....	20-1
21	Animal-wildlife feed, analysis for gamma-emitting isotopes.....	21-1
22	Soil, analysis for gamma-emitting isotopes.....	22-1
23	Treated surface water, monthly composites of weekly grab samples, analysis for gross beta .....	23-1
24	Treated surface water, quarterly composites of weekly grab samples, analyses for tritium, strontium-89, strontium-90 and gamma-emitting isotopes .....	24-1
25	Untreated surface water, monthly composites of weekly grab samples, analyses for gross beta, tritium and gamma-emitting isotopes .....	25-1
26	Untreated surface water, quarterly composites of weekly grab samples, analyses for strontium-89 and strontium-90 .....	26-1
27	Fish, analyses for gross beta and gamma-emitting isotopes .....	28-1
28	Shoreline sediment, analysis for gamma-emitting isotopes .....	29-1

LIST OF TABLES (continued)

The following tables are in the Appendices:

Appendix A

	Attachment A: Acceptance criteria for spiked samples .....	A-2
A-1	Interlaboratory Comparison Program Results .....	A1-1
A-2	Interlaboratory Comparison Program Results, thermoluminescent dosimeters (TLDs) .....	A2-1
A-3	Results of the analyses on in-house spiked samples .....	A3-1
A-4	Results of the analyses on in-house "blank" samples.....	A4-1
A-5	Results of the analyses on in-house "duplicate" samples.....	A5-1
A-6	Mixed Analyte Performance Evaluation Program (MAPEP).....	A6-1
A-7	Environmental Resources Associates, Crosscheck Program Results (EML study replacement).....	A7-1

Appendix B

B-1	Data Reporting Conventions .....	B-2
-----	----------------------------------	-----

## 1.0 INTRODUCTION

The following constitutes the final 2014 Monthly Progress Report for the Radiological Environmental Monitoring Program conducted at the Davis-Besse Nuclear Power Station in Oak Harbor, Ohio. Results of completed analyses are presented in the attached tables. Missing entries indicate analyses that are not yet completed.

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

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

## 2.0 LISTING OF MISSED SAMPLES

---

Sample Type	Location	Expected Collection Date	Reason
TLD	T-115	1st Qtr.	TLD lost in the field.
TLD	T-154	1st Qtr.	TLD lost in the field.
TLD	T-223	4th Qtr.	TLD lost in the field.
TLD	T-223	Annual	TLD lost in the field.
TLD	T-115	Annual	TLD lost in the field.
TLD	T-154	Annual	TLD lost in the field.

---

### 3.0 DATA TABULATIONS



Table 1. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-1

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	373	0.026 ± 0.003	07-08-14	282	0.023 ± 0.004
01-14-14	247	0.025 ± 0.004	07-15-14	282	0.027 ± 0.004
01-21-14	297	0.030 ± 0.004	07-22-14	283	0.026 ± 0.004
01-29-14	324	0.024 ± 0.003	07-29-14	282	0.024 ± 0.004
02-04-14	248	0.038 ± 0.005	08-05-14	282	0.032 ± 0.004
02-11-14	283	0.031 ± 0.004	08-12-14	284	0.025 ± 0.004
02-18-14	290	0.029 ± 0.004	08-19-14	281	0.019 ± 0.004
02-25-14	288	0.024 ± 0.004	08-26-14	281	0.032 ± 0.004
			09-02-14	282	0.022 ± 0.004
03-04-14	289	0.038 ± 0.004			
03-11-14	284	0.029 ± 0.004	09-09-14	282	0.029 ± 0.004
03-18-14	285	0.021 ± 0.003	09-16-14	282	0.015 ± 0.003
03-25-14	286	0.022 ± 0.003	09-23-14	282	0.029 ± 0.004
04-01-14	288	0.030 ± 0.004	09-30-14	283	0.025 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.028 ± 0.005	3rd Quarter Mean ± s.d.		0.025 ± 0.005
04-08-14	285	0.021 ± 0.003	10-06-14	241	0.022 ± 0.004
04-15-14	287	0.021 ± 0.003	10-14-14	409	0.020 ± 0.003
04-22-14	285	0.033 ± 0.004	10-21-14	358	0.015 ± 0.003
04-29-14	286	0.017 ± 0.003	10-28-14	360	0.022 ± 0.003
05-06-14	287	0.011 ± 0.003	11-04-14	361	0.017 ± 0.003
05-13-14	284	0.023 ± 0.004	11-12-14	408	0.022 ± 0.003
05-20-14	287	0.015 ± 0.003	11-18-14	306	0.021 ± 0.003
05-27-14	285	0.021 ± 0.004	11-25-14	360	0.027 ± 0.003
06-03-14	286	0.020 ± 0.003	12-02-14	357	0.025 ± 0.003
06-10-14	286	0.019 ± 0.003	12-09-14	358	0.037 ± 0.004
06-17-14	286	0.017 ± 0.003	12-16-14	359	0.035 ± 0.003
06-24-14	285	0.018 ± 0.003	12-22-14	313	0.015 ± 0.003
07-01-14	283	0.017 ± 0.003	12-30-14	410	0.018 ± 0.002
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.019 ± 0.005	4th Quarter Mean ± s.d.		0.023 ± 0.007
					Cumulative Average
					0.024

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 2. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-2

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	365	0.027 ± 0.003	07-08-14	281	0.019 ± 0.003
01-14-14	243	0.022 ± 0.004	07-15-14	283	0.023 ± 0.004
01-21-14	290	0.031 ± 0.004	07-22-14	293	0.018 ± 0.003
01-29-14	318	0.019 ± 0.003	07-29-14	283	0.023 ± 0.004
02-04-14	243	0.036 ± 0.005	08-05-14	284	0.033 ± 0.004
02-11-14	277	0.028 ± 0.004	08-12-14	285	0.025 ± 0.004
02-18-14	283	0.030 ± 0.004	08-19-14	282	0.017 ± 0.003
02-25-14	283	0.027 ± 0.004	08-26-14	282	0.032 ± 0.004
			09-02-14	284	0.023 ± 0.004
03-04-14	283	0.041 ± 0.004			
03-11-14	274	0.029 ± 0.004	09-09-14	283	0.026 ± 0.004
03-18-14	281	0.025 ± 0.004	09-16-14	284	0.016 ± 0.003
03-25-14	282	0.023 ± 0.004	09-23-14	286	0.029 ± 0.004
04-01-14	283	0.028 ± 0.004	09-30-14	281	0.025 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.028 ± 0.006	3rd Quarter Mean ± s.d.		0.024 ± 0.005
04-08-14	281	0.021 ± 0.003	10-06-14	242	0.022 ± 0.004
04-15-14	283	0.022 ± 0.003	10-14-14	333	0.023 ± 0.003
04-22-14	282	0.032 ± 0.004	10-21-14	292	0.017 ± 0.003
04-29-14	282	0.020 ± 0.003	10-28-14	284	0.027 ± 0.004
05-06-14	283	0.012 ± 0.003	11-04-14	286	0.020 ± 0.003
05-13-14	280	0.022 ± 0.004	11-12-14	323	0.025 ± 0.003
05-20-14	283	0.013 ± 0.003	11-18-14	241	0.025 ± 0.004
05-27-14	279	0.024 ± 0.004	11-25-14	284	0.030 ± 0.004
06-03-14	278	0.019 ± 0.004	12-02-14	281	0.030 ± 0.004
06-10-14	282	0.019 ± 0.004	12-09-14	282	0.045 ± 0.004
06-17-14	282	0.019 ± 0.003	12-16-14	283	0.042 ± 0.004
06-24-14	282	0.018 ± 0.003	12-22-14	244	0.021 ± 0.004
07-01-14	283	0.019 ± 0.003	12-30-14	323	0.028 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.020 ± 0.005	4th Quarter Mean ± s.d.		0.027 ± 0.008
			Cumulative Average		0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 3. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-3

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	365	0.029 ± 0.003	07-08-14	285	0.020 ± 0.003
01-14-14	243	0.027 ± 0.004	07-15-14	286	0.023 ± 0.004
01-21-14	290	0.026 ± 0.004	07-22-14	287	0.020 ± 0.003
01-29-14	318	0.021 ± 0.003	07-29-14	281	0.023 ± 0.004
02-04-14	243	0.037 ± 0.005	08-05-14	286	0.029 ± 0.004
02-11-14	277	0.027 ± 0.004	08-12-14	287	0.024 ± 0.004
02-18-14	283	0.028 ± 0.004	08-19-14	285	0.020 ± 0.004
02-25-14	283	0.024 ± 0.004	08-26-14	276	0.035 ± 0.004
			09-02-14	286	0.020 ± 0.003
03-04-14	283	0.040 ± 0.004			
03-11-14	282	0.027 ± 0.004	09-09-14	286	0.025 ± 0.004
03-18-14	282	0.025 ± 0.004	09-16-14	286	0.016 ± 0.003
03-25-14	286	0.017 ± 0.003	09-23-14	288	0.030 ± 0.004
04-01-14	289	0.026 ± 0.004	09-30-14	283	0.025 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.027 ± 0.006	3rd Quarter Mean ± s.d.		0.024 ± 0.005
04-08-14	285	0.019 ± 0.003	10-06-14	244	0.020 ± 0.004
04-15-14	287	0.026 ± 0.004	10-14-14	326	0.022 ± 0.003
04-22-14	285	0.035 ± 0.004	10-21-14	285	0.020 ± 0.003
04-29-14	286	0.022 ± 0.003	10-28-14	286	0.029 ± 0.004
05-06-14	286	0.011 ± 0.003	11-04-14	291	0.019 ± 0.003
05-13-14	286	0.021 ± 0.004	11-12-14	329	0.026 ± 0.003
05-20-14	287	0.013 ± 0.003	11-18-14	247	0.022 ± 0.004
05-27-14	283	0.021 ± 0.004	11-25-14	290	0.032 ± 0.004
06-03-14	281	0.020 ± 0.004	12-02-14	288	0.028 ± 0.004
06-10-14	286	0.016 ± 0.003	12-09-14	289	0.041 ± 0.004
06-17-14	286	0.019 ± 0.003	12-16-14	290	0.042 ± 0.004
06-24-14	285	0.020 ± 0.003	12-22-14	247	0.019 ± 0.004
07-01-14	286	0.022 ± 0.003	12-30-14	331	0.027 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.020 ± 0.006	4th Quarter Mean ± s.d.		0.027 ± 0.008
			Cumulative Average		0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 4. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-4

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	374	0.028 ± 0.003	07-08-14	283	0.021 ± 0.004
01-14-14	236	0.028 ± 0.004	07-15-14	283	0.024 ± 0.004
01-21-14	292	0.036 ± 0.004	07-22-14	285	0.025 ± 0.004
01-29-14	319	0.024 ± 0.003	07-29-14	282	0.029 ± 0.004
02-04-14	243	0.030 ± 0.004	08-05-14	284	0.031 ± 0.004
02-11-14	283	0.028 ± 0.004	08-12-14	285	0.023 ± 0.004
02-18-14	284	0.033 ± 0.004	08-19-14	282	0.019 ± 0.004
02-25-14	284	0.022 ± 0.004	08-26-14	282	0.032 ± 0.004
			09-02-14	284	0.027 ± 0.004
03-04-14	277	0.046 ± 0.005			
03-11-14	278	0.030 ± 0.004	09-09-14	284	0.025 ± 0.004
03-18-14	283	0.024 ± 0.004	09-16-14	286	0.016 ± 0.003
03-25-14	284	0.022 ± 0.004	09-23-14	289	0.030 ± 0.004
04-01-14	285	0.024 ± 0.004	09-30-14	284	0.025 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.029 ± 0.007	3rd Quarter Mean ± s.d.		0.025 ± 0.005
04-08-14	282	0.024 ± 0.004	10-06-14	244	0.023 ± 0.004
04-15-14	285	0.027 ± 0.004	10-14-14	328	0.026 ± 0.003
04-22-14	283	0.032 ± 0.004	10-21-14	286	0.018 ± 0.003
04-29-14	283	0.018 ± 0.003	10-28-14	287	0.024 ± 0.003
05-06-14	284	0.010 ± 0.003	11-04-14	289	0.020 ± 0.003
05-13-14	276	0.021 ± 0.004	11-12-14	326	0.026 ± 0.003
05-20-14	283	0.011 ± 0.003	11-18-14	244	0.024 ± 0.004
05-27-14	283	0.019 ± 0.004	11-25-14	287	0.027 ± 0.004
06-03-14	283	0.019 ± 0.003	12-02-14	285	0.031 ± 0.004
06-10-14	284	0.018 ± 0.003	12-09-14	286	0.035 ± 0.004
06-17-14	283	0.018 ± 0.003	12-16-14	287	0.039 ± 0.004
06-24-14	283	0.018 ± 0.003	12-22-14	244	0.020 ± 0.004
07-01-14	284	0.021 ± 0.003	12-30-14	327	0.026 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.020 ± 0.006	4th Quarter Mean ± s.d.		0.026 ± 0.006
			Cumulative Average		0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 5. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-7

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	368	0.024 ± 0.003	07-08-14	284	0.021 ± 0.004
01-14-14	253	0.027 ± 0.004	07-15-14	290	0.022 ± 0.004
01-21-14	278	0.028 ± 0.004	07-22-14	279	0.020 ± 0.003
01-29-14	327	0.020 ± 0.003	07-29-14	284	0.032 ± 0.004
02-04-14	245	0.031 ± 0.004	08-05-14	284	0.034 ± 0.004
02-11-14	286	0.033 ± 0.004	08-12-14	293	0.029 ± 0.004
02-18-14	286	0.030 ± 0.004	08-19-14	284	0.021 ± 0.004
02-25-14	286	0.025 ± 0.004	08-26-14	285	0.036 ± 0.004
			09-02-14	292	0.027 ± 0.004
03-04-14	286	0.041 ± 0.004			
03-11-14	284	0.033 ± 0.004	09-09-14	298	0.031 ± 0.004
03-18-14	286	0.021 ± 0.003	09-16-14	284	0.019 ± 0.003
03-25-14	285	0.020 ± 0.003	09-23-14	284	0.027 ± 0.004
04-01-14	286	0.028 ± 0.004	09-30-14	284	0.026 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.028 ± 0.006	3rd Quarter Mean ± s.d.		0.027 ± 0.006
04-08-14	286	0.022 ± 0.003	10-06-14	243	0.020 ± 0.004
04-15-14	286	0.026 ± 0.004	10-14-14	324	0.023 ± 0.003
04-22-14	299	0.037 ± 0.004	10-21-14	283	0.017 ± 0.003
04-29-14	272	0.021 ± 0.003	10-28-14	284	0.027 ± 0.004
05-06-14	285	0.013 ± 0.003	11-04-14	287	0.021 ± 0.003
05-13-14	290	0.021 ± 0.004	11-12-14	327	0.029 ± 0.003
05-20-14	284	0.018 ± 0.003	11-18-14	247	0.024 ± 0.004
05-27-14	287	0.021 ± 0.004	11-25-14	284	0.032 ± 0.004
06-03-14	303	0.019 ± 0.003	12-02-14	283	0.027 ± 0.004
06-10-14	284	0.018 ± 0.003	12-09-14	284	0.038 ± 0.004
06-17-14	284	0.018 ± 0.003	12-16-14	284	0.039 ± 0.004
06-24-14	284	0.021 ± 0.004	12-22-14	244	0.019 ± 0.004
07-01-14	284	0.023 ± 0.004	12-30-14	324	0.027 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.006	4th Quarter Mean ± s.d.		0.026 ± 0.007
			Cumulative Average		0.026

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 6. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-8

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	360	0.023 ± 0.003	07-08-14	287	0.017 ± 0.003
01-14-14	259	0.033 ± 0.004	07-15-14	299	0.025 ± 0.004
01-21-14	277	0.027 ± 0.004	07-22-14	280	0.021 ± 0.004
01-29-14	331	0.022 ± 0.003	07-29-14	283	0.029 ± 0.004
02-04-14	248	0.032 ± 0.004	08-05-14	287	0.033 ± 0.004
02-11-14	289	0.033 ± 0.004	08-12-14	287	0.025 ± 0.004
02-18-14	293	0.032 ± 0.004	08-19-14	287	0.020 ± 0.004
02-25-14	285	0.028 ± 0.004	08-26-14	287	0.034 ± 0.004
			09-02-14	286	0.024 ± 0.004
03-04-14	290	0.040 ± 0.004			
03-11-14	283	0.029 ± 0.004	09-09-14	297	0.031 ± 0.004
03-18-14	289	0.025 ± 0.004	09-16-14	276	0.015 ± 0.003
03-25-14	289	0.024 ± 0.004	09-23-14	292	0.031 ± 0.004
04-01-14	289	0.025 ± 0.004	09-30-14	276	0.028 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.029 ± 0.005	3rd Quarter Mean ± s.d.		0.026 ± 0.006
04-08-14	289	0.024 ± 0.003	10-06-14	253	0.022 ± 0.004
04-15-14	290	0.022 ± 0.003	10-14-14	326	0.024 ± 0.003
04-22-14	297	0.033 ± 0.004	10-21-14	289	0.020 ± 0.003
04-29-14	282	0.021 ± 0.003	10-28-14	289	0.025 ± 0.003
05-06-14	289	0.012 ± 0.003	11-04-14	291	0.020 ± 0.003
05-13-14	293	0.022 ± 0.004	11-12-14	330	0.028 ± 0.003
05-20-14	286	0.015 ± 0.003	11-18-14	248	0.022 ± 0.004
05-27-14	280	0.018 ± 0.004	11-25-14	289	0.029 ± 0.004
06-03-14	287	0.022 ± 0.004	12-02-14	289	0.026 ± 0.004
06-10-14	287	0.018 ± 0.003	12-09-14	289	0.038 ± 0.004
06-17-14	287	0.020 ± 0.003	12-16-14	289	0.038 ± 0.004
06-24-14	287	0.019 ± 0.003	12-22-14	248	0.019 ± 0.004
07-01-14	287	0.023 ± 0.004	12-30-14	330	0.027 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.005	4th Quarter Mean ± s.d.		0.026 ± 0.006
					Cumulative Average
					0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 7. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-9 (C)

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	376	0.029 ± 0.003	07-08-14	275	0.023 ± 0.004
01-14-14	246	0.032 ± 0.004	07-15-14	293	0.027 ± 0.004
01-21-14	275	0.031 ± 0.004	07-22-14	275	0.025 ± 0.004
01-29-14	327	0.022 ± 0.003	07-29-14	292	0.025 ± 0.004
02-04-14	245	0.036 ± 0.005	08-05-14	275	0.034 ± 0.004
02-11-14	286	0.032 ± 0.004	08-12-14	278	0.029 ± 0.004
02-18-14	286	0.034 ± 0.004	08-19-14	284	0.023 ± 0.004
02-25-14	285	0.026 ± 0.004	08-26-14	295	0.034 ± 0.004
			09-02-14	267	0.025 ± 0.004
03-04-14	286	0.038 ± 0.004			
03-11-14	284	0.038 ± 0.004	09-09-14	282	0.030 ± 0.004
03-18-14	295	0.026 ± 0.004	09-16-14	281	0.019 ± 0.003
03-25-14	286	0.026 ± 0.004	09-23-14	276	0.032 ± 0.004
04-01-14	276	0.025 ± 0.004	09-30-14	286	0.028 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.030 ± 0.005	3rd Quarter Mean ± s.d.		0.027 ± 0.005
04-08-14	293	0.020 ± 0.003	10-06-14	245	0.021 ± 0.004
04-15-14	284	0.024 ± 0.004	10-14-14	327	0.025 ± 0.003
04-22-14	282	0.036 ± 0.004	10-21-14	296	0.016 ± 0.003
04-29-14	292	0.021 ± 0.003	10-28-14	285	0.022 ± 0.003
05-06-14	274	0.013 ± 0.003	11-04-14	289	0.015 ± 0.003
05-13-14	291	0.022 ± 0.004	11-12-14	316	0.027 ± 0.003
05-20-14	276	0.016 ± 0.003	11-18-14	255	0.022 ± 0.004
05-27-14	284	0.025 ± 0.004	11-25-14	276	0.032 ± 0.004
06-03-14	294	0.022 ± 0.004	12-02-14	286	0.030 ± 0.004
06-10-14	274	0.019 ± 0.004	12-09-14	295	0.036 ± 0.004
06-17-14	283	0.017 ± 0.003	12-16-14	277	0.039 ± 0.004
06-24-14	294	0.021 ± 0.003	12-22-14	246	0.018 ± 0.004
07-01-14	283	0.020 ± 0.003	12-30-14	336	0.026 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.005	4th Quarter Mean ± s.d.		0.025 ± 0.007
			Cumulative Average		0.026

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 8. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-11 (C)

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	367	0.029 ± 0.003	07-08-14	284	0.021 ± 0.004
01-14-14	243	0.032 ± 0.004	07-15-14	284	0.025 ± 0.004
01-21-14	284	0.032 ± 0.004	07-22-14	284	0.028 ± 0.004
01-29-14	326	0.021 ± 0.003	07-29-14	284	0.021 ± 0.004
02-04-14	243	0.034 ± 0.004	08-05-14	284	0.030 ± 0.004
02-11-14	271	0.035 ± 0.004	08-12-14	264	0.023 ± 0.004
02-18-14	285	0.033 ± 0.004	08-19-14	284	0.019 ± 0.004
02-25-14	283	0.029 ± 0.004	08-26-14	284	0.035 ± 0.004
			09-02-14	284	0.026 ± 0.004
03-04-14	284	0.039 ± 0.004			
03-11-14	282	0.033 ± 0.004	09-09-14	230	0.029 ± 0.004
03-18-14	283	0.023 ± 0.004	09-16-14	284	0.019 ± 0.003
03-25-14	292	0.025 ± 0.004	09-23-14	284	0.032 ± 0.004
04-01-14	270	0.026 ± 0.004	09-30-14	284	0.028 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.030 ± 0.005	3rd Quarter Mean ± s.d.		0.026 ± 0.005
04-08-14	284	0.023 ± 0.003	10-06-14	244	0.021 ± 0.004
04-15-14	285	0.021 ± 0.003	10-14-14	324	0.020 ± 0.003
04-22-14	284	0.035 ± 0.004	10-21-14	284	0.020 ± 0.003
04-29-14	284	0.019 ± 0.003	10-28-14	284	0.026 ± 0.004
05-06-14	284	0.013 ± 0.003	11-04-14	290	0.023 ± 0.003
05-13-14	281	0.023 ± 0.004	11-12-14	335	0.024 ± 0.003
05-20-14	284	0.013 ± 0.003	11-18-14	251	0.026 ± 0.004
05-27-14	283	0.022 ± 0.004	11-25-14	294	0.035 ± 0.004
06-03-14	284	0.019 ± 0.003	12-02-14	356	0.022 ± 0.003
06-10-14	284	0.018 ± 0.003	12-09-14	356	0.030 ± 0.003
06-17-14	284	0.019 ± 0.003	12-16-14	346	0.036 ± 0.003
06-24-14	284	0.025 ± 0.004	12-22-14	298	0.016 ± 0.003
07-01-14	284	0.024 ± 0.004	12-30-14	406	0.020 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.006	4th Quarter Mean ± s.d.		0.025 ± 0.006
			Cumulative Average		0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.



Table 9. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-12 (C)

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	374	0.027 ± 0.003	07-08-14	283	0.022 ± 0.004
01-14-14	249	0.030 ± 0.004	07-15-14	284	0.022 ± 0.004
01-21-14	287	0.029 ± 0.004	07-22-14	285	0.025 ± 0.004
01-29-14	327	0.017 ± 0.003	07-29-14	283	0.023 ± 0.004
02-04-14	242	0.030 ± 0.004	08-05-14	286	0.033 ± 0.004
02-11-14	283	0.028 ± 0.004	08-12-14	281	0.025 ± 0.004
02-18-14	283	0.032 ± 0.004	08-19-14	283	0.022 ± 0.004
02-25-14	286	0.025 ± 0.004	08-26-14	282	0.036 ± 0.004
			09-02-14	286	0.021 ± 0.003
03-04-14	282	0.035 ± 0.004			
03-11-14	283	0.032 ± 0.004	09-09-14	283	0.027 ± 0.004
03-18-14	282	0.023 ± 0.004	09-16-14	284	0.016 ± 0.003
03-25-14	284	0.020 ± 0.003	09-23-14	286	0.023 ± 0.004
04-01-14	277	0.026 ± 0.004	09-30-14	281	0.025 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.027 ± 0.005	3rd Quarter Mean ± s.d.		0.025 ± 0.005
04-08-14	282	0.025 ± 0.004	10-06-14	243	0.019 ± 0.004
04-15-14	286	0.024 ± 0.004	10-14-14	330	0.022 ± 0.003
04-22-14	287	0.035 ± 0.004	10-21-14	281	0.019 ± 0.003
04-29-14	282	0.017 ± 0.003	10-28-14	285	0.028 ± 0.004
05-06-14	285	0.015 ± 0.003	11-04-14	287	0.020 ± 0.003
05-13-14	285	0.023 ± 0.004	11-12-14	324	0.024 ± 0.003
05-20-14	282	0.014 ± 0.003	11-18-14	241	0.023 ± 0.004
05-27-14	285	0.022 ± 0.004	11-25-14	288	0.031 ± 0.004
06-03-14	282	0.018 ± 0.003	12-02-14	280	0.031 ± 0.004
06-10-14	285	0.018 ± 0.003	12-09-14	285	0.040 ± 0.004
06-17-14	285	0.020 ± 0.003	12-16-14	287	0.038 ± 0.004
06-24-14	282	0.019 ± 0.003	12-22-14	243	0.020 ± 0.004
07-01-14	285	0.023 ± 0.004	12-30-14	321	0.022 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.005	4th Quarter Mean ± s.d.		0.026 ± 0.007
			Cumulative Average		0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 10. Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131<sup>a</sup>.

Location: T-27 (C)

Units: pCi/m<sup>3</sup>

Collection: Continuous, weekly exchange.

Date Collected	Volume (m <sup>3</sup> )	Gross Beta	Date Collected	Volume (m <sup>3</sup> )	Gross Beta
<u>Required LLD</u>		<u>0.010</u>			<u>0.010</u>
01-08-14	363	0.028 ± 0.003	07-08-14	277	0.025 ± 0.004
01-14-14	247	0.030 ± 0.004	07-15-14	289	0.025 ± 0.004
01-21-14	283	0.030 ± 0.004	07-22-14	284	0.018 ± 0.003
01-29-14	329	0.021 ± 0.003	07-29-14	282	0.026 ± 0.004
02-04-14	254	0.034 ± 0.004	08-05-14	284	0.036 ± 0.004
02-11-14	286	0.033 ± 0.004	08-12-14	285	0.029 ± 0.004
02-18-14	279	0.031 ± 0.004	08-19-14	282	0.018 ± 0.003
02-25-14	292	0.022 ± 0.003	08-26-14	283	0.035 ± 0.004
03-04-14	286	0.034 ± 0.004	09-02-14	283	0.024 ± 0.004
03-11-14	280	0.032 ± 0.004	09-09-14	284	0.029 ± 0.004
03-18-14	284	0.019 ± 0.003	09-16-14	283	0.019 ± 0.003
03-25-14	286	0.024 ± 0.004	09-23-14	286	0.029 ± 0.004
04-01-14	283	0.028 ± 0.004	09-30-14	281	0.026 ± 0.004
<hr/>			<hr/>		
1st Quarter Mean ± s.d.		0.028 ± 0.005	3rd Quarter Mean ± s.d.		0.026 ± 0.006
04-08-14	285	0.025 ± 0.004	10-06-14	246	0.022 ± 0.004
04-15-14	287	0.025 ± 0.004	10-14-14	328	0.023 ± 0.003
04-22-14	289	0.035 ± 0.004	10-21-14	287	0.018 ± 0.003
04-29-14	302	0.022 ± 0.003	10-28-14	288	0.029 ± 0.004
05-06-14	287	0.013 ± 0.003	11-04-14	290	0.020 ± 0.003
05-13-14	288	0.024 ± 0.004	11-12-14	326	0.025 ± 0.003
05-20-14	280	0.015 ± 0.003	11-18-14	246	0.023 ± 0.004
05-27-14	305	0.021 ± 0.003	11-25-14	288	0.030 ± 0.004
06-03-14	319	0.018 ± 0.003	12-02-14	281	0.027 ± 0.004
06-10-14	287	0.018 ± 0.003	12-09-14	293	0.039 ± 0.004
06-17-14	285	0.017 ± 0.003	12-16-14	287	0.042 ± 0.004
06-24-14	286	0.021 ± 0.004	12-22-14	242	0.018 ± 0.004
07-01-14	284	0.022 ± 0.004	12-30-14	327	0.028 ± 0.003
<hr/>			<hr/>		
2nd Quarter Mean ± s.d.		0.021 ± 0.006	4th Quarter Mean ± s.d.		0.026 ± 0.007
Cumulative Average					0.025

<sup>a</sup> Iodine-131 concentrations are < 0.07 pCi/m<sup>3</sup> unless noted otherwise.

Table 11-1. Airborne particulate data, gross beta analyses, monthly averages, minima and maxima.

January				April			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.029	0.022	0.032	T-9	0.025	0.02	0.036
T-11	0.029	0.021	0.032	T-11	0.025	0.019	0.035
T-12	0.026	0.017	0.030	T-12	0.025	0.017	0.035
T-27	0.027	0.021	0.030	T-27	0.027	0.022	0.035
Controls	0.028	0.017	0.032	Controls	0.026	0.017	0.036
T-1	0.026	0.024	0.030	T-1	0.023	0.017	0.033
T-2	0.025	0.019	0.031	T-2	0.024	0.020	0.032
T-3	0.026	0.021	0.029	T-3	0.026	0.019	0.035
T-4	0.029	0.024	0.036	T-4	0.025	0.018	0.032
T-7	0.025	0.020	0.028	T-7	0.027	0.021	0.037
T-8	0.026	0.022	0.033	T-8	0.025	0.021	0.033
Indicators	0.026	0.019	0.036	Indicators	0.025	0.017	0.037

February				May			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.032	0.026	0.036	T-9	0.020	0.013	0.025
T-11	0.033	0.029	0.035	T-11	0.018	0.013	0.023
T-12	0.029	0.025	0.032	T-12	0.018	0.014	0.023
T-27	0.030	0.022	0.034	T-27	0.018	0.013	0.024
Controls	0.031	0.022	0.036	Controls	0.019	0.013	0.025
T-1	0.031	0.024	0.038	T-1	0.018	0.011	0.023
T-2	0.030	0.027	0.036	T-2	0.018	0.012	0.024
T-3	0.029	0.024	0.037	T-3	0.017	0.011	0.021
T-4	0.028	0.022	0.033	T-4	0.016	0.010	0.021
T-7	0.030	0.025	0.033	T-7	0.018	0.013	0.021
T-8	0.031	0.028	0.033	T-8	0.018	0.012	0.022
Indicators	0.030	0.022	0.038	Indicators	0.018	0.010	0.024

March				June			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.031	0.025	0.038	T-9	0.019	0.017	0.021
T-11	0.029	0.023	0.039	T-11	0.022	0.018	0.025
T-12	0.027	0.020	0.035	T-12	0.020	0.018	0.023
T-27	0.027	0.019	0.034	T-27	0.020	0.017	0.022
Controls	0.029	0.019	0.039	Controls	0.020	0.017	0.025
T-1	0.028	0.021	0.038	T-1	0.018	0.017	0.019
T-2	0.029	0.023	0.041	T-2	0.019	0.018	0.019
T-3	0.027	0.017	0.040	T-3	0.019	0.016	0.022
T-4	0.029	0.022	0.046	T-4	0.019	0.018	0.021
T-7	0.029	0.020	0.041	T-7	0.020	0.018	0.023
T-8	0.029	0.024	0.040	T-8	0.020	0.018	0.023
Indicators	0.029	0.017	0.046	Indicators	0.019	0.016	0.023

Note: Unless otherwise specified, samples collected on the first, second or third day of the month are grouped with data from the previous month.

Table 11-1. Airborne particulate data, gross beta analyses, monthly averages, minima and maxima.

July				October			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.025	0.023	0.027	T-9	0.021	0.016	0.025
T-11	0.024	0.021	0.028	T-11	0.022	0.020	0.026
T-12	0.023	0.022	0.025	T-12	0.022	0.019	0.028
T-27	0.024	0.018	0.026	T-27	0.023	0.018	0.029
Controls	0.024	0.018	0.028	Controls	0.022	0.016	0.029
T-1	0.025	0.023	0.027	T-1	0.020	0.015	0.022
T-2	0.021	0.018	0.023	T-2	0.022	0.017	0.027
T-3	0.022	0.020	0.023	T-3	0.023	0.020	0.029
T-4	0.025	0.021	0.029	T-4	0.023	0.018	0.026
T-7	0.024	0.020	0.032	T-7	0.022	0.017	0.027
T-8	0.023	0.017	0.029	T-8	0.023	0.020	0.025
Indicators	0.023	0.017	0.032	Indicators	0.022	0.015	0.029

August				November			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.029	0.023	0.034	T-9	0.025	0.015	0.032
T-11	0.027	0.019	0.035	T-11	0.026	0.022	0.035
T-12	0.027	0.021	0.036	T-12	0.026	0.020	0.031
T-27	0.028	0.018	0.036	T-27	0.025	0.020	0.030
Controls	0.028	0.018	0.036	Controls	0.026	0.015	0.035
T-1	0.026	0.019	0.032	T-1	0.022	0.017	0.027
T-2	0.026	0.017	0.033	T-2	0.026	0.020	0.030
T-3	0.026	0.020	0.035	T-3	0.025	0.019	0.032
T-4	0.026	0.019	0.032	T-4	0.026	0.020	0.031
T-7	0.029	0.021	0.036	T-7	0.027	0.021	0.032
T-8	0.027	0.020	0.034	T-8	0.025	0.020	0.029
Indicators	0.027	0.017	0.036	Indicators	0.025	0.017	0.032

September				December			
Location	Average	Minima	Maxima	Location	Average	Minima	Maxima
T-9	0.027	0.019	0.032	T-9	0.030	0.018	0.039
T-11	0.027	0.019	0.032	T-11	0.026	0.016	0.036
T-12	0.023	0.016	0.027	T-12	0.030	0.020	0.040
T-27	0.026	0.019	0.029	T-27	0.032	0.018	0.042
Controls	0.026	0.016	0.032	Controls	0.030	0.016	0.042
T-1	0.025	0.015	0.029	T-1	0.026	0.015	0.037
T-2	0.024	0.016	0.029	T-2	0.034	0.021	0.045
T-3	0.024	0.016	0.030	T-3	0.032	0.019	0.042
T-4	0.024	0.016	0.030	T-4	0.030	0.020	0.039
T-7	0.026	0.019	0.031	T-7	0.031	0.019	0.039
T-8	0.026	0.015	0.031	T-8	0.031	0.019	0.038
Indicators	0.025	0.015	0.031	Indicators	0.031	0.015	0.045

Note: Unless otherwise specified, samples collected on the first, second or third day of the month are grouped with data from the previous month.

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.  
Collection: Quarterly Composite  
Units: pCi/m<sup>3</sup>

Location		T-1			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1609	TAP- 3666	TAP- 5899	TAP- 7357	
Volume (m <sup>3</sup> )	3782	3712	3668	4600	
Sr-89	< 0.0005	< 0.0006	< 0.0007	< 0.0003	
Sr-90	< 0.0004	< 0.0004	< 0.0004	< 0.0003	
Be-7	0.071 ± 0.014	0.078 ± 0.013	0.081 ± 0.016	0.047 ± 0.008	
K-40	< 0.023	0.027 ± 0.009	< 0.019	< 0.014	
Nb-95	< 0.0005	< 0.0006	< 0.0005	< 0.0004	
Zr-95	< 0.0009	< 0.0011	< 0.0017	< 0.0008	
Ru-103	< 0.0006	< 0.0009	< 0.0010	< 0.0007	
Ru-106	< 0.0046	< 0.0058	< 0.0033	< 0.0033	
Cs-134	< 0.0009	< 0.0006	< 0.0009	< 0.0005	
Cs-137	< 0.0009	< 0.0006	< 0.0010	< 0.0004	
Ce-141	< 0.0016	< 0.0013	< 0.0021	< 0.0007	
Ce-144	< 0.0045	< 0.0035	< 0.0041	< 0.0033	

Location		T-2			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1610	TAP- 3667	TAP- 5900	TAP- 7358	
Volume (m <sup>3</sup> )	3705	3660	3691	3698	
Sr-89	< 0.0006	< 0.0006	< 0.0006	< 0.0005	
Sr-90	< 0.0004	< 0.0003	< 0.0004	< 0.0004	
Be-7	0.073 ± 0.016	0.088 ± 0.016	0.076 ± 0.012	0.050 ± 0.010	
K-40	< 0.025	< 0.021	< 0.016	< 0.013	
Nb-95	< 0.0008	< 0.0012	< 0.0008	< 0.0005	
Zr-95	< 0.0011	< 0.0018	< 0.0010	< 0.0010	
Ru-103	< 0.0007	< 0.0011	< 0.0008	< 0.0008	
Ru-106	< 0.0074	< 0.0071	< 0.0051	< 0.0049	
Cs-134	< 0.0008	< 0.0010	< 0.0007	< 0.0005	
Cs-137	< 0.0007	< 0.0005	< 0.0005	< 0.0004	
Ce-141	< 0.0016	< 0.0013	< 0.0013	< 0.0007	
Ce-144	< 0.0041	< 0.0049	< 0.0032	< 0.0024	

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.  
 Collection: Quarterly Composite  
 Units: pCi/m<sup>3</sup>

Location T-3				
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 1611	TAP- 3668	TAP- 5901	TAP- 7359
Volume (m <sup>3</sup> )	3724	3709	3702	3743
Sr-89	< 0.0005	< 0.0005	< 0.0006	< 0.0004
Sr-90	< 0.0004	< 0.0003	< 0.0003	< 0.0003
Be-7	0.074 ± 0.016	0.076 ± 0.016	0.065 ± 0.014	0.060 ± 0.012
K-40	< 0.024	< 0.024	< 0.020	< 0.017
Nb-95	< 0.0007	< 0.0010	< 0.0016	< 0.0010
Zr-95	< 0.0015	< 0.0006	< 0.0013	< 0.0017
Ru-103	< 0.0007	< 0.0011	< 0.0006	< 0.0008
Ru-106	< 0.0078	< 0.0040	< 0.0049	< 0.0047
Cs-134	< 0.0009	< 0.0010	< 0.0008	< 0.0008
Cs-137	< 0.0009	< 0.0010	< 0.0007	< 0.0007
Ce-141	< 0.0018	< 0.0016	< 0.0012	< 0.0012
Ce-144	< 0.0041	< 0.0029	< 0.0048	< 0.0041

Location T-4				
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Lab Code	TAP- 1612	TAP- 3669	TAP- 5902	TAP- 7360
Volume (m <sup>3</sup> )	3722	3676	3693	3720
Sr-89	< 0.0004	< 0.0006	< 0.0007	< 0.0004
Sr-90	< 0.0003	< 0.0004	< 0.0004	< 0.0003
Be-7	0.073 ± 0.014	0.079 ± 0.014	0.073 ± 0.015	0.063 ± 0.013
K-40	0.019 ± 0.010	< 0.021	< 0.015	< 0.021
Nb-95	< 0.0006	< 0.0007	< 0.0007	< 0.0007
Zr-95	< 0.0015	< 0.0011	< 0.0012	< 0.0009
Ru-103	< 0.0011	< 0.0009	< 0.0010	< 0.0010
Ru-106	< 0.0068	< 0.0053	< 0.0063	< 0.0044
Cs-134	< 0.0009	< 0.0009	< 0.0009	< 0.0009
Cs-137	< 0.0007	< 0.0007	< 0.0006	< 0.0005
Ce-141	< 0.0017	< 0.0016	< 0.0012	< 0.0012
Ce-144	< 0.0027	< 0.0024	< 0.0029	< 0.0038

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.  
Collection: Quarterly Composite  
Units: pCi/m<sup>3</sup>

Location		T-7			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1613	TAP- 3670	TAP- 5903	TAP- 7361	
Volume (m <sup>3</sup> )	3756	3728	3725	3698	
Sr-89	< 0.0004	< 0.0007	< 0.0006	< 0.0004	
Sr-90	< 0.0004	< 0.0004	< 0.0004	< 0.0003	
Be-7	0.077 ± 0.015	0.087 ± 0.013	0.075 ± 0.014	0.054 ± 0.012	
K-40	< 0.024	0.017 ± 0.007	< 0.021	< 0.021	
Nb-95	< 0.0005	< 0.0011	< 0.0007	< 0.0008	
Zr-95	< 0.0009	< 0.0009	< 0.0020	< 0.0011	
Ru-103	< 0.0006	< 0.0009	< 0.0013	< 0.0006	
Ru-106	< 0.0040	< 0.0056	< 0.0062	< 0.0051	
Cs-134	< 0.0007	< 0.0008	< 0.0009	< 0.0006	
Cs-137	< 0.0006	< 0.0006	< 0.0009	< 0.0005	
Ce-141	< 0.0011	< 0.0014	< 0.0013	< 0.0011	
Ce-144	< 0.0027	< 0.0024	< 0.0049	< 0.0038	

Location		T-8			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1614	TAP- 3671	TAP- 5904	TAP- 7362	
Volume (m <sup>3</sup> )	3782	3741	3724	3760	
Sr-89	< 0.0004	< 0.0008	< 0.0007	< 0.0004	
Sr-90	< 0.0003	< 0.0005	< 0.0004	< 0.0004	
Be-7	0.067 ± 0.012	0.088 ± 0.016	0.073 ± 0.014	0.058 ± 0.010	
K-40	< 0.021	< 0.023	< 0.022	< 0.021	
Nb-95	< 0.0008	< 0.0010	< 0.0013	< 0.0008	
Zr-95	< 0.0014	< 0.0014	< 0.0010	< 0.0010	
Ru-103	< 0.0009	< 0.0009	< 0.0013	< 0.0006	
Ru-106	< 0.0071	< 0.0040	< 0.0078	< 0.0058	
Cs-134	< 0.0008	< 0.0009	< 0.0010	< 0.0006	
Cs-137	< 0.0009	< 0.0009	< 0.0006	< 0.0005	
Ce-141	< 0.0016	< 0.0016	< 0.0020	< 0.0007	
Ce-144	< 0.0042	< 0.0040	< 0.0062	< 0.0039	

Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.

Collection: Quarterly Composite

Units: pCi/m<sup>3</sup>

Location		T-9 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1615	TAP- 3672	TAP- 5905	TAP- 7363	
Volume (m <sup>3</sup> )	3753	3704	3659	3729	
Sr-89	< 0.0011	< 0.0007	< 0.0012	< 0.0009	
Sr-90	< 0.0008	< 0.0004	< 0.0007	< 0.0007	
Be-7	0.069 ± 0.012	0.084 ± 0.015	0.080 ± 0.014	0.052 ± 0.013	
K-40	< 0.016	< 0.020	< 0.023	< 0.021	
Nb-95	< 0.0009	< 0.0010	< 0.0009	< 0.0007	
Zr-95	< 0.0007	< 0.0016	< 0.0012	< 0.0011	
Ru-103	< 0.0010	< 0.0011	< 0.0013	< 0.0006	
Ru-106	< 0.0041	< 0.0062	< 0.0065	< 0.0054	
Cs-134	< 0.0008	< 0.0009	< 0.0010	< 0.0006	
Cs-137	< 0.0004	< 0.0011	< 0.0009	< 0.0005	
Ce-141	< 0.0012	< 0.0016	< 0.0023	< 0.0007	
Ce-144	< 0.0026	< 0.0049	< 0.0060	< 0.0044	

Location		T-11 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1617	TAP- 3673	TAP- 5907	TAP- 7365	
Volume (m <sup>3</sup> )	3713	3689	3618	4068	
Sr-89	< 0.0005	< 0.0005	< 0.0006	< 0.0004	
Sr-90	< 0.0003	< 0.0003	< 0.0004	< 0.0003	
Be-7	0.074 ± 0.013	0.071 ± 0.017	0.072 ± 0.014	0.061 ± 0.013	
K-40	< 0.019	< 0.024	< 0.025	< 0.019	
Nb-95	< 0.0008	< 0.0009	< 0.0006	< 0.0006	
Zr-95	< 0.0019	< 0.0011	< 0.0007	< 0.0011	
Ru-103	< 0.0009	< 0.0013	< 0.0008	< 0.0008	
Ru-106	< 0.0053	< 0.0042	< 0.0045	< 0.0043	
Cs-134	< 0.0008	< 0.0009	< 0.0011	< 0.0007	
Cs-137	< 0.0005	< 0.0004	< 0.0006	< 0.0003	
Ce-141	< 0.0017	< 0.0012	< 0.0019	< 0.0010	
Ce-144	< 0.0028	< 0.0045	< 0.0046	< 0.0034	



Table 12. Airborne particulates, analyses for strontium-89, strontium-90 and gamma-emitting isotopes.  
Collection: Quarterly Composite  
Units: pCi/m<sup>3</sup>

Location		T-12 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1618	TAP- 3674	TAP- 5908	TAP- 7366	
Volume (m <sup>3</sup> )	3739	3693	3687	3695	
Sr-89	< 0.0004	< 0.0006	< 0.0008	< 0.0004	
Sr-90	< 0.0003	< 0.0004	< 0.0005	< 0.0003	
Be-7	0.067 ± 0.012	0.082 ± 0.016	0.066 ± 0.013	0.058 ± 0.013	
K-40	< 0.022	0.022 ± 0.008	< 0.024	< 0.021	
Nb-95	< 0.0010	< 0.0016	< 0.0008	< 0.0006	
Zr-95	< 0.0012	< 0.0010	< 0.0018	< 0.0010	
Ru-103	< 0.0011	< 0.0009	< 0.0011	< 0.0008	
Ru-106	< 0.0049	< 0.0061	< 0.0058	< 0.0046	
Cs-134	< 0.0009	< 0.0008	< 0.0008	< 0.0010	
Cs-137	< 0.0006	< 0.0006	< 0.0007	< 0.0006	
Ce-141	< 0.0010	< 0.0011	< 0.0018	< 0.0011	
Ce-144	< 0.0031	< 0.0028	< 0.0036	< 0.0030	

Location		T-27 (C)			
Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
Lab Code	TAP- 1619	TAP- 3675	TAP- 5909	TAP- 7367	
Volume (m <sup>3</sup> )	3752	3784	3683	3729	
Sr-89	< 0.0005	< 0.0005	< 0.0007	< 0.0004	
Sr-90	< 0.0004	< 0.0003	< 0.0004	< 0.0004	
Be-7	0.070 ± 0.014	0.092 ± 0.016	0.070 ± 0.014	0.064 ± 0.013	
K-40	< 0.023	< 0.020	< 0.015	< 0.021	
Nb-95	< 0.0011	< 0.0007	< 0.0012	< 0.0006	
Zr-95	< 0.0018	< 0.0012	< 0.0016	< 0.0015	
Ru-103	< 0.0012	< 0.0008	< 0.0010	< 0.0008	
Ru-106	< 0.0079	< 0.0049	< 0.0045	< 0.0051	
Cs-134	< 0.0009	< 0.0009	< 0.0008	< 0.0007	
Cs-137	< 0.0007	< 0.0008	< 0.0004	< 0.0005	
Ce-141	< 0.0019	< 0.0019	< 0.0012	< 0.0008	
Ce-144	< 0.0056	< 0.0041	< 0.0030	< 0.0038	

Table 13. Area monitors (TLD), Quarterly.  
Units: mR/91 days

<u>Indicator</u>	<u>1st Qtr.</u>	<u>2nd Qtr.</u>	<u>3rd Qtr.</u>	<u>4th Qtr.</u>
T-1	8.2 ± 0.6	13.5 ± 0.8	12.4 ± 0.9	15.5 ± 1.3
T-2	11.0 ± 0.8	11.8 ± 0.7	12.6 ± 1.0	15.6 ± 1.1
T-3	10.9 ± 1.0	12.3 ± 1.1	12.6 ± 1.0	12.9 ± 1.1
T-4	11.9 ± 0.6	11.6 ± 0.8	14.6 ± 1.0	16.1 ± 1.1
T-5	13.3 ± 1.3	13.6 ± 1.3	14.6 ± 1.7	14.9 ± 1.4
T-6	8.5 ± 0.9	11.6 ± 0.7	9.3 ± 1.0	12.4 ± 1.0
T-7	15.6 ± 1.0	20.1 ± 0.6	15.6 ± 0.7	19.6 ± 0.9
T-8	21.0 ± 1.1	21.6 ± 2.0	24.5 ± 1.0	25.0 ± 1.9
T-10	12.1 ± 0.9	15.6 ± 0.8	13.7 ± 0.9	15.7 ± 0.9
T-38	11.4 ± 0.7	11.3 ± 0.7	9.8 ± 0.7	12.9 ± 1.3
T-39	12.5 ± 1.2	13.9 ± 0.6	10.8 ± 1.3	13.0 ± 0.9
T-40	12.2 ± 0.6	13.9 ± 1.1	14.5 ± 0.8	12.9 ± 1.0
T-41	11.5 ± 1.4	11.0 ± 0.6	10.9 ± 1.0	10.9 ± 0.8
T-42	11.6 ± 1.6	10.2 ± 0.8	11.5 ± 1.3	10.3 ± 1.1
T-43	13.7 ± 1.0	16.2 ± 1.1	14.4 ± 0.9	15.2 ± 0.9
T-44	17.2 ± 1.3	18.9 ± 1.6	19.4 ± 1.0	20.2 ± 1.6
T-45	17.2 ± 0.9	20.2 ± 0.8	18.0 ± 0.8	19.1 ± 0.9
T-46	13.3 ± 1.0	13.7 ± 1.1	15.1 ± 1.4	13.0 ± 1.2
T-47	9.0 ± 0.9	11.2 ± 0.3	9.0 ± 0.9	9.4 ± 1.3
T-48	10.8 ± 0.6	10.8 ± 0.6	10.9 ± 0.7	10.2 ± 0.8
T-49	10.3 ± 0.8	12.7 ± 1.1	10.0 ± 0.7	12.5 ± 1.2
T-50	15.4 ± 0.6	15.7 ± 1.5	17.8 ± 0.8	15.5 ± 1.4
T-51	17.3 ± 1.6	16.8 ± 0.9	17.4 ± 1.2	14.1 ± 1.1
T-52	17.5 ± 1.3	21.3 ± 0.7	19.6 ± 1.6	20.5 ± 0.9
T-53	16.3 ± 0.6	21.0 ± 0.6	16.7 ± 0.8	21.9 ± 1.2
T-54	17.1 ± 0.7	18.9 ± 1.1	18.8 ± 1.3	18.1 ± 1.3
T-55	12.2 ± 1.4	13.9 ± 1.2	13.9 ± 1.6	14.2 ± 1.4
T-60	9.0 ± 1.0	9.1 ± 1.3	7.0 ± 1.2	12.5 ± 1.3
T-62	11.1 ± 0.8	9.4 ± 1.0	9.5 ± 0.9	10.0 ± 0.6
T-65	16.6 ± 0.9	17.1 ± 0.8	17.2 ± 1.1	15.8 ± 0.9
T-66	17.0 ± 1.0	15.7 ± 0.7	18.3 ± 1.3	20.1 ± 1.8
T-67	15.9 ± 1.0	18.7 ± 0.8	16.4 ± 0.8	18.0 ± 0.6
T-68	16.2 ± 1.8	13.4 ± 0.7	15.7 ± 1.9	13.8 ± 0.6
T-69	16.1 ± 0.9	16.4 ± 0.8	14.6 ± 0.9	16.2 ± 0.7
T-71	12.7 ± 0.8	11.5 ± 0.7	15.4 ± 0.6	17.3 ± 0.6
T-73	12.3 ± 1.1	13.2 ± 1.0	11.2 ± 1.1	14.1 ± 0.8
T-74	14.5 ± 1.1	13.6 ± 1.5	11.3 ± 1.5	13.7 ± 1.2
T-75	13.8 ± 1.3	12.9 ± 0.9	15.1 ± 1.2	12.7 ± 0.5
T-76	13.3 ± 0.8	10.2 ± 1.0	10.8 ± 0.5	12.2 ± 1.0
T-91	18.0 ± 0.9	18.0 ± 2.1	18.0 ± 0.9	16.2 ± 1.5
T-92	12.7 ± 0.8	12.6 ± 0.7	13.9 ± 0.7	12.6 ± 0.5

Table 13. Area monitors (TLD), Quarterly.  
Units: mR/91 days

<u>Indicator</u>	<u>1st Qtr.</u>	<u>2nd Qtr.</u>	<u>3rd Qtr.</u>	<u>4th Qtr.</u>
T-93	13.5 ± 1.2	12.1 ± 0.7	11.9 ± 1.0	12.4 ± 0.6
T-94	12.4 ± 1.2	17.4 ± 1.1	14.2 ± 1.0	17.0 ± 1.1
T-112	12.4 ± 0.9	14.9 ± 1.4	11.9 ± 0.9	17.2 ± 1.5
T-121	15.4 ± 1.2	20.0 ± 1.2	18.8 ± 1.5	20.3 ± 1.0
T-122	13.1 ± 1.2	14.9 ± 1.0	14.7 ± 1.3	15.6 ± 0.6
T-123	14.6 ± 0.9	15.8 ± 0.9	14.7 ± 0.9	20.8 ± 0.5
T-125	13.9 ± 1.0	15.7 ± 0.8	15.3 ± 0.9	15.8 ± 0.6
T-126	13.3 ± 0.9	11.7 ± 1.0	13.5 ± 0.8	12.1 ± 0.9
T-127	14.0 ± 0.9	17.2 ± 1.2	16.9 ± 1.0	21.2 ± 1.3
T-128	15.1 ± 1.4	18.3 ± 1.1	14.0 ± 1.6	21.5 ± 0.9
T-142	10.2 ± 0.9	10.3 ± 0.8	9.9 ± 0.8	10.8 ± 0.7
T-150	11.3 ± 1.1	13.5 ± 1.7	13.9 ± 1.2	17.0 ± 1.7
T-151	18.0 ± 1.0	18.6 ± 0.9	18.2 ± 1.8	18.2 ± 0.8
T-153	18.2 ± 1.0	19.4 ± 0.8	19.8 ± 1.0	18.2 ± 0.5
T-154	ND <sup>a</sup>	18.8 ± 1.4	18.1 ± 1.1	22.3 ± 0.9
T-201	13.3 ± 1.0	11.2 ± 0.3	12.6 ± 0.9	11.9 ± 0.6
T-202	11.7 ± 1.2	14.2 ± 0.5	11.2 ± 1.2	14.7 ± 0.7
T-203	11.2 ± 1.0	13.2 ± 1.1	12.0 ± 0.9	14.6 ± 1.0
T-204	10.9 ± 1.0	11.0 ± 0.5	11.3 ± 0.9	18.5 ± 0.4
T-205	10.1 ± 1.0	8.8 ± 0.4	10.1 ± 1.1	10.1 ± 0.4
T-206	10.7 ± 1.0	9.8 ± 0.4	9.8 ± 1.0	10.4 ± 0.5
T-207	9.1 ± 1.3	9.2 ± 0.4	8.2 ± 1.1	10.2 ± 1.0
T-208	9.6 ± 1.5	9.6 ± 0.8	9.6 ± 1.6	10.4 ± 0.6
T-211	13.1 ± 1.0	7.9 ± 0.9	11.0 ± 1.4	9.7 ± 1.1
T-212	10.7 ± 0.5	9.2 ± 0.9	8.2 ± 0.5	10.3 ± 0.9
T-213	15.6 ± 0.5	15.1 ± 1.0	16.3 ± 0.5	17.7 ± 1.9
T-214	14.2 ± 0.4	14.6 ± 0.9	14.7 ± 0.7	16.2 ± 0.8
T-215	14.9 ± 0.8	17.0 ± 0.8	17.7 ± 0.9	18.1 ± 0.9
T-216	15.1 ± 0.9	14.1 ± 1.0	13.8 ± 0.9	14.8 ± 1.0
T-217	18.3 ± 0.8	18.1 ± 1.0	18.9 ± 1.5	19.2 ± 1.7
T-218	18.9 ± 0.6	19.5 ± 1.1	19.3 ± 0.7	20.5 ± 1.1
T-219	12.2 ± 0.8	15.5 ± 1.4	11.1 ± 1.0	16.8 ± 1.3
T-220	19.2 ± 0.4	17.7 ± 1.6	19.6 ± 1.1	20.1 ± 2.2
T-222	12.0 ± 0.5	11.9 ± 0.9	11.0 ± 0.8	13.3 ± 1.3
T-223	14.2 ± 1.0	11.9 ± 0.8	12.0 ± 0.8	ND <sup>a</sup>
T-224	15.3 ± 0.8	15.2 ± 1.0	13.4 ± 0.8	12.6 ± 1.0
Mean ± s.d.	13.6 ± 2.8	14.4 ± 3.5	14.0 ± 3.5	15.4 ± 3.7

ND = No Data; TLD lost in the field.

Table 13. Area monitors (TLD), Quarterly.  
Units: mR/91 days

	<u>1st Qtr.</u>	<u>2nd Qtr.</u>	<u>3rd Qtr.</u>	<u>4th Qtr.</u>
<u>Control</u>				
T-9	12.0 ± 0.8	13.5 ± 0.9	13.8 ± 1.0	14.6 ± 1.0
T-11	13.5 ± 1.2	14.2 ± 1.0	12.5 ± 0.8	14.3 ± 1.2
T-12	16.3 ± 0.8	21.2 ± 1.0	18.1 ± 1.2	20.8 ± 1.1
T-24	14.7 ± 1.0	18.2 ± 0.7	22.5 ± 1.2	16.9 ± 0.8
T-27	16.2 ± 1.1	22.2 ± 0.9	23.3 ± 1.3	21.9 ± 1.2
Mean ± s.d.	14.5 ± 1.8	17.9 ± 4.0	18.0 ± 4.9	17.7 ± 3.5
T-95	12.1 ± 1.3	14.5 ± 0.7	12.0 ± 1.3	14.6 ± 0.5
T-100	16.3 ± 1.6	15.5 ± 1.0	15.4 ± 1.4	18.3 ± 0.7
T-111	16.5 ± 1.6	17.3 ± 1.0	18.0 ± 2.0	20.6 ± 0.9
T-124	16.5 ± 1.1	19.4 ± 0.8	17.1 ± 1.6	21.6 ± 0.6
T-155	12.9 ± 0.9	14.6 ± 1.2	12.8 ± 0.7	17.3 ± 1.2
T-221	16.5 ± 1.6	17.0 ± 1.4	18.2 ± 1.6	17.8 ± 1.1
Mean ± s.d.	15.1 ± 2.1	16.4 ± 1.9	15.6 ± 2.7	18.4 ± 2.5
<u>QC</u>				
T-80	9.6 ± 1.1	9.6 ± 0.7	7.7 ± 1.3	11.8 ± 0.6
T-81	18.2 ± 0.8	17.0 ± 0.7	18.0 ± 0.8	20.1 ± 0.6
T-82	9.0 ± 0.9	11.0 ± 0.8	6.9 ± 0.9	11.1 ± 0.6
T-83	10.0 ± 0.9	9.5 ± 1.6	5.2 ± 1.0	10.3 ± 1.4
T-84	9.6 ± 0.9	10.5 ± 0.7	11.6 ± 1.1	11.1 ± 0.5
T-85	13.0 ± 1.1	10.4 ± 0.8	11.8 ± 1.5	14.9 ± 0.6
T-86	18.1 ± 1.1	19.0 ± 1.3	17.8 ± 1.3	18.4 ± 0.8
T-88	13.8 ± 1.6	14.8 ± 0.9	11.7 ± 1.4	14.2 ± 0.5
T-89	15.3 ± 1.3	16.2 ± 0.7	14.3 ± 1.8	18.2 ± 0.5
T-113	10.9 ± 1.0	13.5 ± 1.2	11.5 ± 1.1	15.5 ± 0.8
T-114	17.9 ± 0.9	17.2 ± 0.8	21.2 ± 0.9	19.7 ± 0.7
T-115	ND <sup>a</sup>	20.4 ± 1.2	18.3 ± 0.7	21.9 ± 1.3
T-116	16.6 ± 1.0	17.9 ± 1.0	13.6 ± 0.9	17.9 ± 1.0
T-117	13.0 ± 0.9	10.9 ± 1.0	14.9 ± 1.3	14.0 ± 1.1
T-118	12.2 ± 0.7	17.0 ± 0.8	13.2 ± 0.7	16.9 ± 0.5
T-119	12.8 ± 1.1	13.9 ± 0.8	13.0 ± 0.9	15.6 ± 0.6
T-120	10.2 ± 0.9	11.3 ± 0.9	9.1 ± 0.7	12.2 ± 0.8
T-200	11.4 ± 1.1	12.3 ± 1.3	11.4 ± 1.0	12.8 ± 1.0
Mean ± s.d.	13.0 ± 3.2	14.0 ± 3.5	12.8 ± 4.2	15.4 ± 3.5
<u>Shield</u>				
T-87	6.6 ± 0.9	7.0 ± 0.8	5.7 ± 0.7	8.0 ± 0.7

<sup>a</sup> ND = No Data, TLD lost in the field.

Table 14. Area monitors (TLD), Annual.  
Units: mR/365 days

---

<u>Indicator</u>	<u>2014</u>
T-1	38.7 ± 2.2
T-2	44.3 ± 1.4
T-3	44.3 ± 3.5
T-4	44.2 ± 1.7
T-5	56.8 ± 1.2
T-6	43.7 ± 2.1
T-7	70.2 ± 2.5
T-8	84.0 ± 6.5
T-10	54.3 ± 1.7
T-38	46.0 ± 1.6
T-39	47.6 ± 1.5
T-40	56.9 ± 3.8
T-41	44.5 ± 1.7
T-42	43.1 ± 1.8
T-43	47.3 ± 2.4
T-44	69.2 ± 4.2
T-45	67.9 ± 1.2
T-46	48.4 ± 1.4
T-47	31.2 ± 1.3
T-48	47.9 ± 1.9
T-49	34.3 ± 1.4
T-50	56.0 ± 1.9
T-51	53.6 ± 2.5
T-52	66.9 ± 1.4
T-53	64.2 ± 3.4
T-54	66.4 ± 2.6
T-55	52.8 ± 2.9
T-60	44.5 ± 2.9
T-62	42.9 ± 1.6
T-65	63.2 ± 4.9
T-66	76.2 ± 3.1
T-67	77.0 ± 3.3
T-68	59.2 ± 1.8
T-69	76.8 ± 2.4
T-71	59.7 ± 2.6
T-73	59.6 ± 1.9
T-74	61.5 ± 3.0
T-75	55.9 ± 1.6
T-76	49.5 ± 1.9
T-91	77.2 ± 4.9
T-92	52.8 ± 1.6

---

Table 14. Area monitors (TLD), Annual.  
Units: mR/365 days

<u>Indicator</u>	<u>2014</u>
T-93	62.3 ± 1.8
T-94	71.4 ± 1.7
T-112	54.5 ± 2.9
T-121	75.2 ± 3.0
T-122	68.2 ± 2.2
T-123	79.5 ± 3.4
T-125	80.6 ± 2.5
T-126	58.7 ± 2.7
T-127	82.8 ± 2.5
T-128	71.3 ± 1.6
T-142	46.3 ± 1.5
T-150	57.8 ± 2.3
T-151	74.8 ± 4.5
T-153	74.0 ± 3.9
T-154	ND <sup>a</sup>
T-201	55.2 ± 4.2
T-202	57.3 ± 3.3
T-203	53.6 ± 5.1
T-204	55.2 ± 3.5
T-205	40.9 ± 3.2
T-206	43.4 ± 3.5
T-207	34.9 ± 3.2
T-208	41.6 ± 3.4
T-211	41.2 ± 3.5
T-212	45.0 ± 1.7
T-213	57.6 ± 4.0
T-214	64.2 ± 1.6
T-215	77.8 ± 1.6
T-216	66.4 ± 3.2
T-217	66.7 ± 1.8
T-218	74.1 ± 2.5
T-219	57.6 ± 3.2
T-220	78.2 ± 2.5
T-222	45.3 ± 2.4
T-223	ND <sup>a</sup>
T-224	61.6 ± 1.6
Mean ± s.d.	58.1 ± 13.2

<sup>a</sup> ND = No Data, TLD lost in the field.

Table 14. Area monitors (TLD), Annual.

Units: mR/365 days

<u>Control</u>	<u>2014</u>
T-9	54.4 ± 1.9
T-11	52.7 ± 5.0
T-12	63.7 ± 1.3
T-24	67.0 ± 1.8
T-27	73.6 ± 1.7
Mean ± s.d.	62.3 ± 8.8
T-95	62.5 ± 1.7
T-100	68.8 ± 2.8
T-111	77.8 ± 2.3
T-124	77.5 ± 1.6
T-155	54.7 ± 2.2
T-221	69.1 ± 2.3
Mean ± s.d.	68.4 ± 8.9
<u>QC</u>	
T-80	43.9 ± 2.9
T-81	73.1 ± 1.8
T-82	43.0 ± 1.8
T-83	42.2 ± 3.3
T-84	49.1 ± 3.8
T-85	51.8 ± 1.4
T-86	90.6 ± 4.6
T-88	64.6 ± 3.2
T-89	70.3 ± 1.6
T-113	57.4 ± 1.6
T-114	78.5 ± 1.6
T-115	ND <sup>a</sup>
T-116	71.1 ± 2.0
T-117	57.9 ± 3.3
T-118	67.1 ± 3.2
T-119	54.4 ± 2.6
T-120	50.5 ± 1.8
T-200	46.8 ± 4.1
Mean ± s.d.	59.5 ± 13.9
<u>Shield</u>	
T-87	26.7 ± 1.6

<sup>a</sup> ND = No Data, TLD lost in the field.

Table 15. Milk, analyses for strontium-89, strontium-90, iodine-131, gamma emitting isotopes, calcium and stable potassium.

Monthly collections, location T-24

Units: pCi/L

Date Collected	01-30-14	02-26-14	04-01-14	04-29-14
Lab Code	TMI- 331	TMI- 712	TMI- 1242	TMI- 1832
I-131	< 0.5	< 0.3	< 0.3	< 0.5
Sr-89	< 0.7	< 0.6	< 0.6	< 0.6
Sr-90	< 0.6	< 0.6	< 0.7	0.6 ± 0.3
K-40	1308 ± 93	1336 ± 79	1369 ± 103	1335 ± 126
Cs-134	< 3.5	< 2.7	< 3.3	< 4.6
Cs-137	< 2.0	< 2.6	< 2.4	< 4.9
Ba-La-140	< 2.4	< 4.7	< 2.3	< 4.3
Ca (g/L)	0.92	1.25	1.05	0.90
Sr-90/g Ca	< 0.65	< 0.48	< 0.67	0.67
K (g/L)	1.60 ± 0.11	1.63 ± 0.10	1.67 ± 0.13	1.63 ± 0.15
Cs-137/g K	< 1.25	< 1.60	< 1.44	< 3.01
Date Collected	05-28-14	07-01-14	07-30-14	09-03-14
Lab Code	TMI- 2327	TMI- 3114	TMI- 3866	TMI- 4570
I-131	< 0.3	< 0.4	< 0.3	< 0.5
Sr-89	< 0.6	< 0.6	< 0.6	< 0.5
Sr-90	< 0.6	< 0.5	< 0.5	< 0.5
K-40	1276 ± 100	1328 ± 156	1216 ± 97	1334 ± 114
Cs-134	< 3.2	< 6.1	< 3.5	< 4.0
Cs-137	< 2.7	< 4.2	< 3.1	< 3.4
Ba-La-140	< 2.5	< 8.0	< 2.6	< 2.1
Ca (g/L)	0.93	0.95	0.85	1.09
Sr-90/g Ca	< 0.65	< 0.53	< 0.59	< 0.46
K (g/L)	1.56 ± 0.12	1.62 ± 0.19	1.48 ± 0.12	1.63 ± 0.14
Cs-137/g K	< 1.73	< 2.59	< 2.09	< 2.09
Date Collected	10-01-14	10-29-14	12-02-14	12-31-14
Lab Code	TMI- 5250	TMI- 6087	TMI- 6798	TMI- 7190
I-131	< 0.5	< 0.2	< 0.4	< 0.3
Sr-89	< 0.2	< 0.7	< 0.6	< 0.6
Sr-90	0.3 ± 0.2	< 0.7	0.7 ± 0.3	0.7 ± 0.3
K-40	1349 ± 105	1405 ± 99	1311 ± 112	1388 ± 117
Cs-134	< 2.8	< 3.6	< 4.3	< 3.8
Cs-137	< 3.1	< 3.5	< 4.3	< 3.9
Ba-La-140	< 2.2	< 2.9	< 2.5	< 2.8
Ca (g/L)	1.00	1.13	1.08	1.20
Sr-90/g Ca	0.30	< 0.62	0.65	0.58
K (g/L)	1.65 ± 0.13	1.71 ± 0.12	1.60 ± 0.14	1.69 ± 0.14
Cs-137/g K	< 1.88	< 2.05	< 2.69	< 2.31



Table 16. Ground water samples, analyses for gross beta, tritium, strontium-89, strontium-90 and gamma-emitting isotopes.

Collection: Quarterly

Units: pCi/L

Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
Location	T-27C (C)				
Lab Code	ND	TWW- 1865	TWW- 3903	TWW- 6099	Req. LLD
Date Collected	-	04-29-14	07-09-14	10-06-14	
Gross beta	-	1.9 ± 0.8	3.7 ± 1.8	< 1.5	4.0
H-3	-	< 330	< 330	< 330	330
Sr-89	-	< 0.7	< 1.0	< 0.9	
Sr-90	-	< 0.4	< 0.5	< 0.5	
Mn-54	-	< 3.1	< 2.3	< 1.2	15
Fe-59	-	< 7.4	< 5.3	< 3.7	30
Co-58	-	< 1.9	< 1.6	< 1.0	15
Co-60	-	< 2.6	< 1.8	< 0.8	15
Zn-65	-	< 5.0	< 3.3	< 2.1	30
Zr-Nb-95	-	< 2.2	< 3.6	< 2.3	15
Cs-134	-	< 3.8	< 2.1	< 1.1	15
Cs-137	-	< 3.5	< 1.8	< 1.2	18
Ba-La-140	-	< 3.1	< 10.0	< 4.5	15
Location	T-225 (I)				
Lab Code	ND	TWW- 1867	ND	TWW- 6101	Req. LLD
Date Collected	-	04-29-14	-	10-06-14	
Gross beta	-	2.3 ± 0.4	-	1.9 ± 0.5	4.0
H-3	-	< 330	-	< 330	330
Sr-89	-	< 0.7	-	< 0.9	
Sr-90	-	0.5 ± 0.3	-	< 0.5	
Mn-54	-	< 2.9	-	< 4.2	15
Fe-59	-	< 5.8	-	< 5.8	30
Co-58	-	< 2.5	-	< 3.9	15
Co-60	-	< 3.9	-	< 2.3	15
Zn-65	-	< 4.4	-	< 4.8	30
Zr-Nb-95	-	< 3.0	-	< 3.2	15
Cs-134	-	< 4.2	-	< 4.3	15
Cs-137	-	< 3.9	-	< 3.9	18
Ba-La-140	-	< 3.9	-	< 5.7	15

ND = No Data, Sample not received.

Table 16. Ground water samples, analyses for gross beta, tritium, strontium-89, strontium-90 and gamma-emitting isotopes.  
Collection: Quarterly  
Units: pCi/L

Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	
<hr/>					
Location	T-226 (I)				
Lab Code	ND	TWW- 1869	TWW- 3905	TWW- 6102	Req. LLD
Date Collected	-	04-29-14	07-09-14	10-06-14	
Gross beta	-	0.7 ± 0.3	2.5 ± 0.8	1.0 ± 0.4	4.0
H-3	-	< 330	< 330	< 330	330
Sr-89	-	< 0.6	< 0.9	< 1.0	
Sr-90	-	< 0.4	< 0.5	< 0.5	
Mn-54	-	< 2.6	< 1.9	< 3.2	15
Fe-59	-	< 3.4	< 6.0	< 6.3	30
Co-58	-	< 1.5	< 2.2	< 2.6	15
Co-60	-	< 2.1	< 2.4	< 2.4	15
Zn-65	-	< 5.3	< 2.7	< 3.8	30
Zr-Nb-95	-	< 2.3	< 2.3	< 5.2	15
Cs-134	-	< 2.8	< 2.0	< 2.9	15
Cs-137	-	< 3.4	< 2.4	< 3.2	18
Ba-La-140	-	< 2.8	< 9.9	< 10.4	15
<hr/>					
Location	T-141 (QC)				
Lab Code	ND	TWW- 1866	TWW- 3904	TWW- 6100	Req. LLD
Date Collected	-	04-29-14	07-09-14	10-06-14	
Gross beta	-	1.6 ± 0.3	2.4 ± 0.8	1.6 ± 0.4	4.0
H-3	-	< 330	< 330	< 330	330
Sr-89	-	< 0.9	< 1.1	< 1.2	
Sr-90	-	< 0.5	< 0.5	< 0.6	
Mn-54	-	< 2.8	< 1.8	< 2.3	15
Fe-59	-	< 4.5	< 2.7	< 2.6	30
Co-58	-	< 1.2	< 2.8	< 3.6	15
Co-60	-	< 1.6	< 1.6	< 2.1	15
Zn-65	-	< 2.7	< 3.5	< 3.0	30
Zr-Nb-95	-	< 1.9	< 4.7	< 2.7	15
Cs-134	-	< 2.9	< 2.1	< 2.4	15
Cs-137	-	< 3.6	< 2.0	< 2.5	18
Ba-La-140	-	< 2.1	< 11.2	< 10.4	15

ND = No Data, Sample not received.

Table 19. Green leafy vegetables, analyses for strontium-89, strontium-90, iodine-131 and other gamma-emitting isotopes.

Collection: Monthly, in season

Units: pCi/g wet

Location		T-227 (I)			
Lab Code	TVE- 3897	TVE- 4590	TVE- 5246	TVE- 6093	
Date Collected	07-30-14	09-03-14	10-01-14	10-29-14	
Sample Type	Cabbage	Cabbage	Cabbage	Cabbage	
Sr-89	< 0.002	< 0.002	< 0.004	< 0.002	
Sr-90	< 0.001	0.002 ± 0.001	< 0.002	< 0.001	
I-131	< 0.017	< 0.018	< 0.010	< 0.011	
K-40	2.28 ± 0.17	2.02 ± 0.15	2.01 ± 0.13	1.84 ± 0.17	
Nb-95	< 0.005	< 0.007	< 0.004	< 0.005	
Zr-95	< 0.009	< 0.010	< 0.006	< 0.009	
Cs-134	< 0.006	< 0.006	< 0.004	< 0.006	
Cs-137	< 0.005	< 0.004	< 0.004	< 0.006	
Ce-141	< 0.011	< 0.014	< 0.005	< 0.012	
Ce-144	< 0.061	< 0.046	< 0.017	< 0.039	

Location		T-19 (I)		
Lab Code		TVE- 4588	TVE- 5244	TVE- 6092
Date Collected		09-03-14	10-01-14	10-29-14
Sample Type		Cabbage	Cabbage	Cabbage
Sr-89		< 0.003	< 0.003	< 0.002
Sr-90		0.002 ± 0.001	< 0.002	< 0.001
I-131		< 0.013	< 0.009	< 0.015
K-40		2.04 ± 0.17	1.98 ± 0.13	2.02 ± 0.14
Nb-95		< 0.004	< 0.004	< 0.004
Zr-95		< 0.010	< 0.009	< 0.009
Cs-134		< 0.005	< 0.004	< 0.005
Cs-137		< 0.005	< 0.003	< 0.004
Ce-141		< 0.010	< 0.009	< 0.010
Ce-144		< 0.032	< 0.033	< 0.033

Location		T-37 (C)		
Lab Code		TVE- 3896	TVE- 4589	TVE- 5245
Date Collected		07-30-14	09-03-14	10-01-14
Sample Type		Cabbage	Cabbage	Cabbage
Sr-89		< 0.001	< 0.003	< 0.003
Sr-90		< 0.001	< 0.002	< 0.002
I-131		< 0.019	< 0.014	< 0.010
K-40		1.86 ± 0.16	2.21 ± 0.17	2.13 ± 0.13
Nb-95		< 0.008	< 0.003	< 0.004
Zr-95		< 0.006	< 0.010	< 0.006
Cs-134		< 0.006	< 0.006	< 0.004
Cs-137		< 0.005	< 0.003	< 0.004
Ce-141		< 0.012	< 0.013	< 0.009
Ce-144		< 0.060	< 0.038	< 0.029

Table 20. Fruit, analyses for strontium-89, strontium-90, iodine-131 and other gamma-emitting isotopes.  
 Collection: Monthly, in season  
 Units: pCi/g wet

Location	T-8 (I)	T-25 (I)
Lab Code	TVE- 5247	TVE- 5248
Date Collected	10-01-14	10-01-14
Sample Type	Apples	Apples
Sr-89	< 0.002	< 0.003
Sr-90	< 0.001	< 0.002
I-131	< 0.013	< 0.017
K-40	1.15 ± 0.14	1.29 ± 0.12
Nb-95	< 0.005	< 0.006
Zr-95	< 0.009	< 0.010
Cs-134	< 0.006	< 0.006
Cs-137	< 0.006	< 0.005
Ce-141	< 0.016	< 0.010
Ce-144	< 0.048	< 0.037

Location	T-209 (C)
Lab Code	TVE- 5249
Date Collected	10-01-14
Sample Type	Apples
Sr-89	< 0.003
Sr-90	< 0.002
I-131	< 0.015
K-40	1.75 ± 0.14
Nb-95	< 0.007
Zr-95	< 0.010
Cs-134	< 0.004
Cs-137	< 0.006
Ce-141	< 0.006
Ce-144	< 0.035

Table 22. Soil samples, analyses for gamma-emitting isotopes.  
 Collection: Annual  
 Units: pCi/g dry

Location	T-1	T-2	T-3	T-4
Lab Code	TSO- 1844	TSO- 1845	TSO- 1846	TSO- 1848
Date Collected	04-22-14	04-22-14	04-22-14	04-22-14
Be-7	< 0.21	< 0.22	0.36 ± 0.20	0.50 ± 0.29
K-40	10.98 ± 0.60	5.54 ± 0.53	8.39 ± 0.61	18.19 ± 0.89
Mn-54	< 0.020	< 0.014	< 0.024	< 0.022
Nb-95	< 0.021	< 0.026	< 0.011	< 0.013
Zr-95	< 0.035	< 0.032	< 0.023	< 0.032
Ru-103	< 0.022	< 0.029	< 0.011	< 0.029
Ru-106	< 0.085	< 0.063	< 0.110	< 0.142
Cs-134	< 0.013	< 0.020	< 0.015	< 0.022
Cs-137	0.084 ± 0.026	0.24 ± 0.021	< 0.020	0.13 ± 0.038
Ce-141	< 0.061	< 0.048	< 0.040	< 0.057
Ce-144	< 0.131	< 0.084	< 0.073	< 0.145

Location	T-7	T-8
Lab Code	TSO- 1849	TSO- 1850
Date Collected	04-22-14	04-22-14
Be-7	< 0.16	< 0.22
K-40	9.98 ± 0.55	13.19 ± 0.77
Mn-54	< 0.020	< 0.027
Nb-95	< 0.024	< 0.024
Zr-95	< 0.024	< 0.036
Ru-103	< 0.016	< 0.017
Ru-106	< 0.100	< 0.159
Cs-134	< 0.012	< 0.016
Cs-137	0.034 ± 0.017	0.14 ± 0.036
Ce-141	< 0.034	< 0.046
Ce-144	< 0.090	< 0.086

Location	T-9	T-11	T-12	T-27
Lab Code	TSO- 1851	TSO- 1852	TSO- 1853	TSO- 1854
Date Collected	04-22-14	04-22-14	04-22-14	04-22-14
Be-7	0.62 ± 0.29	0 ± 0.21	< 0.20	0.53 ± 0.31
K-40	20.47 ± 1.05	13.89 ± 0.69	15.75 ± 0.74	17.94 ± 0.88
Mn-54	< 0.037	< 0.010	< 0.019	< 0.026
Nb-95	< 0.033	< 0.019	< 0.026	< 0.045
Zr-95	< 0.056	< 0.039	< 0.025	< 0.045
Ru-103	< 0.017	< 0.017	< 0.020	< 0.034
Ru-106	< 0.171	< 0.064	< 0.193	< 0.233
Cs-134	< 0.022	< 0.018	< 0.015	< 0.022
Cs-137	0.10 ± 0.041	0.043 ± 0.023	0.089 ± 0.034	0.15 ± 0.030
Ce-141	< 0.061	< 0.063	< 0.039	< 0.080
Ce-144	< 0.152	< 0.070	< 0.123	< 0.133

Table 23. Treated surface water samples, analyses for gross beta.  
 Collection: Monthly composites of weekly grab samples  
 Units: pCi/L

T-11 (C)			T-12 (C)		
Lab Code	Date Collected	Gross Beta	Lab Code	Date Collected	Gross Beta
TSWT- 364	01-29-14	1.5 ± 0.4	TSWT- 365	01-29-14	1.9 ± 0.4
TSWT- 735	02-25-14	1.6 ± 0.6	TSWT- 736	02-25-14	2.3 ± 0.6
TSWT- 1256	04-01-14	2.6 ± 0.8	TSWT- 1257	04-01-14	3.9 ± 0.8
TSWT- 1833	04-29-14	< 1.9	TSWT- 1834	04-29-14	1.9 ± 1.0
TSWT- 2330	05-27-14	1.4 ± 0.4	TSWT- 2332	05-27-14	1.4 ± 0.4
TSWT- 3214	07-01-14	2.8 ± 1.1	TSWT- 3215	07-01-14	1.8 ± 0.9
TSWT- 3868	07-29-14	1.5 ± 0.6	TSWT- 3869	07-29-14	1.2 ± 0.5
TSWT- 4689	09-02-14	< 1.7	TSWT- 4690	09-02-14	2.0 ± 1.0
TSWT- 5324	09-30-14	< 1.3	TSWT- 5325	09-30-14	1.8 ± 0.7
TSWT- 6094	10-28-14	< 0.9	TSWT- 6095	10-28-14	1.2 ± 0.5
TSWT- 6867	12-02-14	1.1 ± 0.5	TSWT- 6868	12-02-14	1.2 ± 0.6
TSWT- 7211	12-30-14	2.4 ± 0.8	TSWT- 7212	12-30-14	2.2 ± 0.7

T-22			T-143 (QC)		
Lab Code	Date Collected	Gross Beta	Lab Code	Date Collected	Gross Beta
TSWT- 366	01-29-14	1.4 ± 0.4	TSWT- 368	01-29-14	1.3 ± 0.4
TSWT- 737	02-25-14	1.3 ± 0.6	TSWT- 738	02-25-14	1.1 ± 0.5
TSWT- 1258	04-01-14	2.6 ± 0.8	TSWT- 1259	04-01-14	2.9 ± 0.7
TSWT- 1835	04-29-14	< 1.8	TSWT- 1836	04-29-14	< 1.6
TSWT- 2333	05-27-14	1.2 ± 0.4	TSWT- 2334	05-27-14	1.9 ± 0.5
TSWT- 3216	07-01-14	2.3 ± 0.9	TSWT- 3218	07-01-14	1.8 ± 1.0
TSWT- 3870	07-29-14	< 0.9	TSWT- 3871	07-29-14	1.3 ± 0.6
TSWT- 4692	09-02-14	< 1.6	TSWT- 4693	09-02-14	< 1.8
TSWT- 5326	09-30-14	1.9 ± 0.8	TSWT- 5327	09-30-14	1.1 ± 0.7
TSWT- 6097	10-28-14	1.2 ± 0.5	TSWT- 6098	10-28-14	< 0.9
TSWT- 6869	12-02-14	1.8 ± 0.6	TSWT- 6870	12-02-14	0.9 ± 0.5
TSWT- 7213	12-30-14	2.3 ± 0.8	TSWT- 7214	12-30-14	2.1 ± 0.7

Table 24. Treated surface water samples, analyses for tritium, strontium-89, strontium-90 and gamma-emitting isotopes.  
 Collection: Quarterly composites of weekly grab samples  
 Units: pCi/L

Location T-11 (C)					
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Req. LLD
Lab Code	TSWT- 1344	TSWT- 3319	TSWT- 5436	TSWT- 7223	
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.8	< 0.7	< 0.8	< 0.6	
Sr-90	< 0.8	< 0.5	< 0.5	< 0.5	
Mn-54	< 2.7	< 2.8	< 2.0	< 1.4	15
Fe-59	< 3.7	< 5.9	< 3.7	< 3.3	30
Co-58	< 2.6	< 3.4	< 2.3	< 2.1	15
Co-60	< 1.6	< 2.8	< 2.2	< 1.0	15
Zn-65	< 3.3	< 4.9	< 4.5	< 7.8	30
Zr-Nb-95	< 2.2	< 2.0	< 3.7	< 2.6	15
Cs-134	< 2.5	< 2.8	< 2.5	< 3.2	10
Cs-137	< 1.9	< 1.8	< 2.5	< 2.4	18
Ba-La-140	< 1.6	< 4.3	< 4.6	< 2.3	15

Location T-12 (C)					
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Req. LLD
Lab Code	TSWT- 1346	TSWT- 3320	TSWT- 5437	TSWT- 7224	
H-3	< 330	< 330	< 330	< 330	330
Sr-89	< 0.7	< 0.8	< 0.8	< 0.7	
Sr-90	< 0.6	< 0.6	< 0.5	< 0.6	
Mn-54	< 3.1	< 1.7	< 2.5	< 2.2	15
Fe-59	< 4.7	< 4.8	< 4.6	< 2.8	30
Co-58	< 1.5	< 2.6	< 1.8	< 1.7	15
Co-60	< 1.7	< 2.7	< 1.4	< 1.8	15
Zn-65	< 4.4	< 2.8	< 2.1	< 2.1	30
Zr-Nb-95	< 3.3	< 2.8	< 3.9	< 2.9	15
Cs-134	< 3.1	< 2.9	< 2.4	< 3.1	10
Cs-137	< 3.1	< 3.6	< 2.7	< 2.7	18
Ba-La-140	< 3.2	< 3.3	< 2.4	< 3.3	15

Table 24. Treated surface water samples, analyses for tritium, strontium-89, strontium-90 and gamma-emitting isotopes.  
 Collection: Quarterly composites of weekly grab samples.  
 Units: pCi/L

Location		T-22				
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.		
Lab Code	TSWT- 1347	TSWT- 3322	TSWT- 5438	TSWT- 7225	<u>Req. LLD</u>	
H-3	< 330	< 330	< 330	< 330	330	
Sr-89	< 0.6	< 0.6	< 0.7	< 0.6		
Sr-90	< 0.4	< 0.5	< 0.5	< 0.5		
Mn-54	< 3.9	< 2.7	< 1.7	< 2.1	15	
Fe-59	< 5.0	< 6.5	< 3.4	< 4.6	30	
Co-58	< 3.1	< 2.2	< 2.4	< 2.8	15	
Co-60	< 2.8	< 2.2	< 1.7	< 1.2	15	
Zn-65	< 3.9	< 2.6	< 4.8	< 4.1	30	
Zr-Nb-95	< 4.3	< 3.0	< 2.6	< 2.3	15	
Cs-134	< 4.6	< 3.9	< 2.7	< 2.5	10	
Cs-137	< 4.7	< 3.9	< 3.1	< 3.7	18	
Ba-La-140	< 6.7	< 5.0	< 5.3	< 1.5	15	



Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.

Location: T-3

Collection: Monthly composites of weekly grab samples

Units: pCi/L

Lab Code	TSWU- 440	TSWU- 739	TSWU- 1260	TSWU- 1837	
Date Collected	01-29-14	02-25-14	04-01-14	04-29-14	Req. LLD
Gross beta	2.5 ± 0.7	3.6 ± 0.8	2.8 ± 0.5	2.1 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.3	< 3.2	< 2.3	< 2.8	15
Fe-59	< 4.5	< 7.6	< 6.8	< 8.2	30
Co-58	< 1.4	< 1.3	< 1.9	< 1.3	15
Co-60	< 2.3	< 2.4	< 2.0	< 2.6	15
Zn-65	< 3.9	< 6.5	< 2.6	< 5.1	30
Zr-Nb-95	< 2.6	< 2.1	< 3.8	< 2.5	15
Cs-134	< 3.0	< 3.5	< 3.1	< 3.7	10
Cs-137	< 2.0	< 3.8	< 3.7	< 3.9	18
Ba-La-140	< 4.1	< 3.3	< 4.0	< 2.1	15
Lab Code	TSWU- 2335	TSWU- 3219	TSWU- 3872	TSWU- 4694	
Date Collected	05-27-14	07-01-14	07-29-14	09-02-14	Req. LLD
Gross Beta	2.6 ± 0.5	2.7 ± 0.7	1.3 ± 0.4	2.8 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 1.7	< 1.4	< 2.3	< 2.6	15
Fe-59	< 2.5	< 5.1	< 4.7	< 3.9	30
Co-58	< 2.3	< 2.4	< 3.1	< 2.0	15
Co-60	< 2.4	< 1.9	< 2.6	< 2.7	15
Zn-65	< 2.7	< 2.5	< 3.0	< 2.2	30
Zr-Nb-95	< 2.7	< 4.2	< 3.7	< 3.3	15
Cs-134	< 3.3	< 2.9	< 3.2	< 3.6	10
Cs-137	< 3.0	< 3.1	< 3.8	< 2.2	18
Ba-La-140	< 1.6	< 2.6	< 2.5	< 2.6	15
Lab Code	TSWU- 5330	TSWU- 6104	TSWU- 6871	TSWU- 7216	
Date Collected	09-30-14	10-28-14	12-02-14	12-30-14	Req. LLD
Gross Beta	3.0 ± 1.1	1.7 ± 0.6	2.4 ± 0.5	3.1 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 1.4	< 2.4	< 2.1	< 2.6	15
Fe-59	< 3.6	< 4.4	< 2.3	< 4.1	30
Co-58	< 2.0	< 2.6	< 2.6	< 3.2	15
Co-60	< 1.4	< 2.7	< 1.7	< 2.9	15
Zn-65	< 4.0	< 6.8	< 2.6	< 4.5	30
Zr-Nb-95	< 4.4	< 3.2	< 2.9	< 3.1	15
Cs-134	< 2.9	< 3.5	< 3.5	< 2.4	10
Cs-137	< 2.5	< 2.6	< 2.2	< 3.4	18
Ba-La-140	< 3.7	< 3.3	< 1.4	< 2.6	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.

Location: T-11 (C)

Collection: Monthly composites of weekly grab samples

Units: pCi/L

Lab Code	TSWU- 442	TSWU- 741	TSWU- 1263	TSWU- 1839	Req. LLD
Date Collected	01-29-14	02-25-14	04-01-14	04-29-14	
Gross beta	2.2 ± 0.6	1.1 ± 0.5	1.6 ± 0.4	1.4 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.7	< 2.4	< 2.7	< 2.5	15
Fe-59	< 5.9	< 3.5	< 3.5	< 3.4	30
Co-58	< 4.6	< 1.3	< 0.8	< 2.0	15
Co-60	< 2.5	< 1.7	< 1.9	< 2.1	15
Zn-65	< 2.3	< 3.0	< 3.4	< 3.1	30
Zr-Nb-95	< 4.1	< 2.3	< 2.0	< 3.1	15
Cs-134	< 3.3	< 3.1	< 3.4	< 2.6	10
Cs-137	< 3.9	< 2.3	< 2.8	< 3.1	18
Ba-La-140	< 7.6	< 2.1	< 2.2	< 4.6	15
Lab Code	TSWU- 2337	TSWU- 3221	TSWU- 3874	TSWU- 4696	Req. LLD
Date Collected	05-27-14	07-01-14	07-29-14	09-02-14	
Gross Beta	1.3 ± 0.4	0.9 ± 0.5	1.4 ± 0.4	2.1 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.0	< 3.4	< 2.0	< 2.1	15
Fe-59	< 4.6	< 8.0	< 4.2	< 2.9	30
Co-58	< 2.3	< 5.5	< 2.7	< 2.7	15
Co-60	< 2.8	< 5.2	< 1.5	< 2.5	15
Zn-65	< 3.2	< 8.3	< 3.1	< 2.6	30
Zr-Nb-95	< 2.8	< 6.5	< 2.2	< 1.8	15
Cs-134	< 3.1	< 4.4	< 2.5	< 2.4	10
Cs-137	< 2.8	< 5.0	< 3.8	< 3.1	18
Ba-La-140	< 4.0	< 5.7	< 2.0	< 2.0	15
Lab Code	TSWU- 5332	TSWU- 6106	TSWU- 6873	TSWU- 7218	Req. LLD
Date Collected	09-30-14	10-28-14	12-02-14	12-30-14	
Gross Beta	2.2 ± 1.0	2.0 ± 0.6	0.9 ± 0.4	2.4 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 1.6	< 1.7	< 2.6	< 2.8	15
Fe-59	< 3.8	< 4.7	< 3.1	< 3.9	30
Co-58	< 3.5	< 3.1	< 1.7	< 1.7	15
Co-60	< 2.4	< 1.7	< 1.8	< 0.8	15
Zn-65	< 1.8	< 1.9	< 4.1	< 4.8	30
Zr-Nb-95	< 2.3	< 1.9	< 3.1	< 3.3	15
Cs-134	< 3.0	< 3.0	< 2.8	< 2.4	10
Cs-137	< 3.4	< 2.4	< 3.5	< 2.6	18
Ba-La-140	< 1.8	< 3.9	< 3.5	< 2.5	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.

Location: T-12 (C)

Collection: Monthly composites of weekly grab samples

Units: pCi/L

Lab Code	TSWU- 443	TSWU- 742	TSWU- 1264	TSWU- 1840	
Date Collected	01-29-14	02-25-14	04-01-14	04-29-14	Req. LLD
Gross beta	2.0 ± 0.6	3.0 ± 0.7	2.9 ± 0.5	2.2 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.5	< 2.7	< 2.7	< 1.5	15
Fe-59	< 2.8	< 3.8	< 3.3	< 4.1	30
Co-58	< 1.8	< 1.8	< 2.2	< 2.3	15
Co-60	< 1.7	< 2.3	< 1.7	< 1.6	15
Zn-65	< 3.9	< 3.8	< 6.7	< 3.3	30
Zr-Nb-95	< 2.6	< 2.8	< 2.6	< 2.5	15
Cs-134	< 2.5	< 2.5	< 2.6	< 2.6	10
Cs-137	< 2.0	< 2.5	< 2.9	< 2.2	18
Ba-La-140	< 3.4	< 1.9	< 2.8	< 3.2	15
Lab Code	TSWU- 2338	TSWU- 3222	TSWU- 3875	TSWU- 4697	
Date Collected	05-27-14	07-01-14	07-29-14	09-02-14	Req. LLD
Gross Beta	1.9 ± 0.4	0.9 ± 0.5	1.3 ± 0.4	2.0 ± 0.5	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.1	< 1.6	< 2.2	< 2.0	15
Fe-59	< 3.2	< 3.2	< 1.5	< 4.8	30
Co-58	< 2.0	< 2.9	< 2.8	< 2.5	15
Co-60	< 2.7	< 2.1	< 2.6	< 2.6	15
Zn-65	< 3.7	< 4.4	< 3.6	< 5.9	30
Zr-Nb-95	< 3.5	< 2.6	< 3.7	< 3.6	15
Cs-134	< 4.5	< 2.4	< 2.9	< 4.0	10
Cs-137	< 2.7	< 2.3	< 3.0	< 3.7	18
Ba-La-140	< 3.9	< 3.0	< 4.2	< 2.9	15
Lab Code	TSWU- 5333	TSWU- 6107	TSWU- 6874	TSWU- 7219	
Date Collected	09-30-14	10-28-14	12-02-14	12-30-14	Req. LLD
Gross Beta	2.2 ± 0.9	1.1 ± 0.5	0.7 ± 0.4	2.7 ± 0.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.7	< 3.1	< 2.2	< 2.1	15
Fe-59	< 5.3	< 4.1	< 4.8	< 6.5	30
Co-58	< 1.9	< 1.6	< 2.5	< 1.2	15
Co-60	< 1.8	< 2.0	< 1.3	< 1.9	15
Zn-65	< 4.9	< 4.5	< 4.0	< 2.3	30
Zr-Nb-95	< 2.3	< 2.4	< 3.2	< 2.7	15
Cs-134	< 3.6	< 2.5	< 2.7	< 2.8	10
Cs-137	< 1.9	< 3.1	< 2.7	< 3.6	18
Ba-La-140	< 4.4	< 3.2	< 2.2	< 2.6	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.

Location: T-22

Collection: Monthly composites of weekly grab samples

Units: pCi/L

Lab Code	TSWU- 445	TSWU- 745	TSWU- 1266	TSWU- 1842	
Date Collected	01-29-14	02-25-14	04-01-14	04-29-14	Req. LLD
Gross beta	1.3 ± 0.6	1.7 ± 0.6	2.7 ± 0.5	1.4 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.7	< 1.7	< 3.1	< 1.7	15
Fe-59	< 3.6	< 4.0	< 2.5	< 4.9	30
Co-58	< 2.1	< 1.4	< 2.1	< 1.2	15
Co-60	< 1.8	< 1.6	< 2.0	< 2.0	15
Zn-65	< 3.7	< 3.7	< 3.0	< 4.0	30
Zr-Nb-95	< 4.3	< 3.2	< 2.5	< 3.1	15
Cs-134	< 2.6	< 2.4	< 3.0	< 2.8	10
Cs-137	< 2.8	< 1.9	< 2.2	< 2.9	18
Ba-La-140	< 3.6	< 2.5	< 3.0	< 2.3	15
Lab Code	TSWU- 2340	TSWU- 3224	TSWU- 3877	TSWU- 4699	
Date Collected	05-27-14	07-01-14	07-29-14	09-02-14	Req. LLD
Gross Beta	1.7 ± 0.4	2.3 ± 0.7	1.1 ± 0.4	1.3 ± 0.4	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.1	< 2.2	< 2.1	< 3.9	15
Fe-59	< 4.8	< 4.2	< 3.9	< 4.1	30
Co-58	< 1.5	< 1.6	< 1.2	< 3.9	15
Co-60	< 1.5	< 2.1	< 2.5	< 3.6	15
Zn-65	< 3.3	< 3.4	< 3.6	< 4.1	30
Zr-Nb-95	< 2.9	< 4.7	< 2.8	< 5.2	15
Cs-134	< 3.4	< 3.8	< 3.0	< 4.2	10
Cs-137	< 2.5	< 3.4	< 2.8	< 4.5	18
Ba-La-140	< 2.8	< 4.2	< 3.8	< 2.4	15
Lab Code	TSWU- 5335	TSWU- 6109	TSWU- 6876	TSWU- 7221	
Date Collected	09-30-14	10-28-14	12-02-14	12-30-14	Req. LLD
Gross Beta	2.1 ± 1.0	1.2 ± 0.6	1.6 ± 0.4	2.5 ± 0.8	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.1	< 2.8	< 3.1	< 2.1	15
Fe-59	< 4.2	< 5.2	< 6.8	< 3.3	30
Co-58	< 2.8	< 2.9	< 2.8	< 3.1	15
Co-60	< 1.3	< 0.8	< 2.1	< 2.1	15
Zn-65	< 4.7	< 4.6	< 4.7	< 4.5	30
Zr-Nb-95	< 3.7	< 3.8	< 3.0	< 2.4	15
Cs-134	< 3.1	< 2.6	< 4.3	< 3.0	10
Cs-137	< 2.6	< 3.3	< 2.8	< 3.4	18
Ba-La-140	< 2.8	< 2.8	< 1.6	< 3.2	15

Table 25. Untreated surface water, analyses for gross beta, tritium and gamma emitting isotopes.  
 Location: T-145 (QC)  
 Collection: Monthly composites of weekly grab samples  
 Units: pCi/L

Lab Code	TSWU- 446	TSWU- 746	TSWU- 1267	TSWU- 1843	
Date Collected	01-29-14	02-25-14	04-01-14	04-29-14	Req. LLD
Gross beta	1.1 ± 0.5	1.2 ± 0.6	2.8 ± 0.7	1.7 ± 0.6	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 2.4	< 2.3	< 3.1	< 3.1	15
Fe-59	< 4.5	< 1.8	< 5.8	< 6.0	30
Co-58	< 2.0	< 1.5	< 1.3	< 3.0	15
Co-60	< 1.2	< 2.4	< 2.4	< 1.5	15
Zn-65	< 3.9	< 2.2	< 4.7	< 3.7	30
Zr-Nb-95	< 3.9	< 1.7	< 3.1	< 3.3	15
Cs-134	< 2.6	< 2.6	< 3.5	< 3.6	10
Cs-137	< 2.3	< 2.9	< 1.9	< 2.1	18
Ba-La-140	< 4.9	< 2.6	< 3.0	< 3.1	15
Lab Code	TSWU- 2341	TSWU- 3225	TSWU- 3878	TSWU- 4700	
Date Collected	05-27-14	07-01-14	07-29-14	09-02-14	Req. LLD
Gross Beta	1.6 ± 0.5	3.0 ± 1.0	1.6 ± 0.5	0.9 ± 0.4	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 3.2	< 3.0	< 4.0	< 1.8	15
Fe-59	< 5.3	< 3.2	< 5.5	< 3.4	30
Co-58	< 3.7	< 2.3	< 1.9	< 1.8	15
Co-60	< 2.6	< 1.6	< 1.4	< 2.7	15
Zn-65	< 3.6	< 4.7	< 3.6	< 2.8	30
Zr-Nb-95	< 3.4	< 2.1	< 4.7	< 2.7	15
Cs-134	< 3.7	< 2.6	< 4.3	< 2.6	10
Cs-137	< 2.6	< 3.0	< 2.9	< 3.6	18
Ba-La-140	< 5.1	< 2.9	< 3.3	< 2.5	15
Lab Code	TSWU- 5336	TSWU- 6110	TSWU- 6877	TSWU- 7222	
Date Collected	09-30-14	10-28-14	12-02-14	12-30-14	Req. LLD
Gross Beta	2.5 ± 1.0	2.9 ± 0.8	0.7 ± 0.4	2.2 ± 0.7	4.0
H-3	< 330	< 330	< 330	< 330	330
Mn-54	< 1.5	< 3.6	< 3.7	< 2.4	15
Fe-59	< 4.7	< 4.6	< 4.9	< 3.1	30
Co-58	< 2.8	< 2.1	< 2.2	< 1.9	15
Co-60	< 0.8	< 2.2	< 3.9	< 2.5	15
Zn-65	< 2.2	< 5.8	< 4.3	< 3.8	30
Zr-Nb-95	< 2.9	< 3.6	< 2.5	< 2.4	15
Cs-134	< 2.6	< 3.8	< 4.5	< 2.9	10
Cs-137	< 2.5	< 4.6	< 3.7	< 3.3	18
Ba-La-140	< 3.9	< 4.5	< 2.3	< 1.6	15

Table 26. Untreated surface water samples, analyses for strontium-89 and strontium-90.  
 Collection: Quarterly composites of weekly grab samples  
 Units: pCi/L

Location T-3				
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1363	TSWU- 3358	TSWU- 5586	TSWU- 7233
Sr-89	< 0.7	< 0.7	< 0.7	< 0.7
Sr-90	< 0.5	< 0.5	< 0.5	< 0.6

Location T-11 (C)				
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1364	TSWU- 3359	TSWU- 5587	TSWU- 7234
Sr-89	< 0.7	< 0.7	< 0.8	< 0.7
Sr-90	< 0.5	< 0.5	< 0.5	< 0.5

Location T-12 (C)				
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1365	TSWU- 3360	TSWU- 5588	TSWU- 7235
Sr-89	< 0.6	< 0.6	< 0.7	< 0.6
Sr-90	< 0.5	< 0.4	< 0.5	< 0.5

Location T-22				
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	TSWU- 1366	TSWU- 3361	TSWU- 5589	TSWU- 7237
Sr-89	< 0.7	< 0.6	< 0.7	< 0.6
Sr-90	< 0.5	< 0.4	< 0.4	< 0.5

Table 27. Fish samples, analyses for gross beta and gamma-emitting isotopes.  
 Collection: Annually  
 Units: pCi/g wet

Location		T-33 (Lake Erie, 1.5 mi. NE of Station)	
Lab Code	TF- 3161	TF- 3162	
Date Collected	06-05-14	05-22-14	
Sample Type	Walleye	White Perch	
Gross Beta	3.95 ± 0.11	2.67 ± 0.09	
K-40	3.35 ± 0.41	2.56 ± 0.37	
Mn-54	< 0.016	< 0.021	
Fe-59	< 0.075	< 0.066	
Co-58	< 0.024	< 0.024	
Co-60	< 0.015	< 0.018	
Zn-65	< 0.040	< 0.038	
Cs-134	< 0.015	< 0.017	
Cs-137	< 0.016	< 0.021	

Location		T-35	
Lab Code	TF- 3163	TF- 3164	TF- 3165
Date Collected	05-19-14	03-14-14	06-05-14
Sample Type	Perch / Bass	Walleye	Carp
Gross Beta	3.35 ± 0.10	3.34 ± 0.10	3.43 ± 0.11
K-40	2.94 ± 0.38	3.35 ± 0.38	3.36 ± 0.41
Mn-54	< 0.011	< 0.015	< 0.020
Fe-59	< 0.094	< 0.279	< 0.044
Co-58	< 0.021	< 0.051	< 0.022
Co-60	< 0.015	< 0.016	< 0.018
Zn-65	< 0.039	< 0.037	< 0.014
Cs-134	< 0.019	< 0.016	< 0.015
Cs-137	< 0.015	< 0.019	< 0.017

Table 28. Shoreline sediment samples, analyses for gamma-emitting isotopes.

Collection: Semiannually

Units: pCi/g dry

Location	T-3	T-4	T-4P	T-27B	T-132
Lab Code	TSS- 2373	TSS- 2375	TSS- 2376	TSS- 2377	TSS- 2378
Date Collected	05-20-14	05-13-14	05-13-14	05-20-14	05-13-14
K-40	12.67 ± 0.62	12.69 ± 0.73	23.36 ± 1.06	10.98 ± 0.48	7.78 ± 0.47
Mn-54	< 0.019	< 0.031	< 0.035	< 0.011	< 0.015
Co-58	< 0.021	< 0.024	< 0.035	< 0.010	< 0.017
Co-60	< 0.009	< 0.020	< 0.020	< 0.013	< 0.006
Cs-134	< 0.012	< 0.021	< 0.020	< 0.011	< 0.012
Cs-137	< 0.017	0.070 ± 0.030	0.049 ± 0.025	< 0.014	< 0.012
Lab Code	TSS- 6317	TSS- 6318	TSS- 6319	TSS- 6320	TSS- 6321
Date Collected	11-05-14	11-05-14	11-05-14	11-05-14	11-05-14
K-40	11.22 ± 0.55	12.15 ± 0.69	19.76 ± 0.91	10.58 ± 0.54	10.41 ± 0.52
Mn-54	< 0.011	< 0.021	< 0.029	< 0.009	< 0.015
Co-58	< 0.015	< 0.017	< 0.030	< 0.017	< 0.014
Co-60	< 0.010	< 0.016	< 0.015	< 0.009	< 0.008
Cs-134	< 0.011	< 0.014	< 0.025	< 0.010	< 0.014
Cs-137	< 0.013	< 0.019	< 0.020	< 0.012	< 0.011





## APPENDIX A

### INTERLABORATORY COMPARISON PROGRAM RESULTS

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

July, 2013 through June, 2014

APPENDIX B

DATA REPORTING CONVENTIONS

## APPENDIX B. DATA REPORTING CONVENTIONS

---

### Data Reporting Conventions

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

### 2.0. Single Measurements

Each single measurement is reported as follows:  $x \pm s$   
where:  $x$  = value of the measurement;  
 $s = 2\sigma$  counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection  $L$ , it is reported as:  $< L$ , where  $L$  = the lower limit of detection based on  $4.66\sigma$  uncertainty for a background sample.

### 3.0. Duplicate analyses

If duplicate analyses are reported, the convention is as follows. :

- 3.1. Individual results: For two analysis results;  $x_1 \pm s_1$  and  $x_2 \pm s_2$   
Reported result:  $x \pm s$ ; where  $x = (1/2)(x_1 + x_2)$  and  $s = (1/2)\sqrt{s_1^2 + s_2^2}$
- 3.2. Individual results:  $< L_1, < L_2$       Reported result:  $< L$ , where  $L$  = lower of  $L_1$  and  $L_2$
- 3.3. Individual results:  $x \pm s, < L$       Reported result:  $x \pm s$  if  $x \geq L$ ;  $< L$  otherwise.

### 4.0. Computation of Averages and Standard Deviations

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

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

- 4.2 Values below the highest lower limit of detection are not included in the average.
- 4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.
- 4.4 If all but one of the values are less than the highest LLD, the single value  $x$  and associated two sigma error is reported.
- 4.5 In rounding off, the following rules are followed:
- 4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained numbers are kept unchanged. As an example, 11.443 is rounded off to 11.44.
- 4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.