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FINAL  
MONTHLY PROGRESS REPORT  
TO  
WISCONSIN ELECTRIC POWER COMPANY  
MILWAUKEE, WISCONSIN

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

PREPARED AND SUBMITTED  
BY  
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# POINT BEACH NUCLEAR PLANT

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# POINT BEACH NUCLEAR PLANT

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## POINT BEACH NUCLEAR PLANT

### 1.0 INTRODUCTION

The following constitutes the current, 1996 Monthly Progress Report for the Environmental Radiological Monitoring Program conducted at the Point Beach Nuclear Plant, Two Rivers, Wisconsin. Results of completed analyses are presented in the attached tables. Missing entries indicate analyses that are not completed. These results will appear in subsequent reports. Data tables reflect sample analysis results for both Technical Specification requirements and Special Interest locations and samples are randomly selected within the Program monitoring area to provide additional data for cross-comparisons.

Data obtained in the program are well within the ranges previously encountered in the program and to be expected in the environmental media sampled. None of the media sampled during the current month contained radioactivity attributable to the operation of Point Beach Nuclear Plant.

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

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

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



POINT BEACH NUCLEAR PLANT

2.0 LISTING OF MISSED SAMPLES

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Sample Type	Location	Expected Collection Date	Reason
AP, AI	E-01	5/28/96	No sample - Sampler found broke.
AP, AI	E-02	6/4/96	No sample - Sampler found broke.
AP, AI	E-03	10/1/96	No sample - Sampler found not working.
AP, AI	E-08	10/15/96	No sample - Pump found seized.
TLD	E-3	4th Qtr.	TLD Lost in the field.
TLD	E-5	4th Qtr.	TLD Lost in the field.
TLD	E-9	4th Qtr.	TLD Lost in the field.
TLD	E-12	4th Qtr.	TLD Lost in the field.
TLD	E-22	4th Qtr.	TLD Lost in the field.
TLD	E-23	4th Qtr.	TLD Lost in the field.
TLD	E-31	4th Qtr.	TLD Lost in the field.

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NOTE: Page 3 is intentionally left out.

POINT BEACH NUCLEAR PLANT  
AIRBORNE IODINE-131 AND GROSS BETA  
IN AIR PARTICULATE FILTERS  
E-01 Meteorological Tower

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
<u>Required LLD</u>		<u>0.010</u>	<u>0.030</u>			<u>0.010</u>	<u>0.030</u>
01-09-96	288	0.030 ± 0.003	-0.002 ± 0.010	07-09-96	287	0.017 ± 0.003	-0.002 ± 0.010
01-16-96	286	0.032 ± 0.003	-0.004 ± 0.012	07-16-96	252	0.017 ± 0.003	-0.002 ± 0.015
01-23-96	278	0.028 ± 0.003	0.011 ± 0.011	07-23-96	250	0.017 ± 0.003	0.003 ± 0.015
01-31-96	330	0.022 ± 0.003	-0.005 ± 0.007	07-30-96	252	0.016 ± 0.003	-0.007 ± 0.010
02-06-96	355	0.028 ± 0.003	0.003 ± 0.009	08-05-96	217	0.010 ± 0.003	0.014 ± 0.018
02-13-96	299	0.027 ± 0.003	-0.005 ± 0.011	08-13-96	313	0.017 ± 0.003	-0.001 ± 0.010
02-20-96	286	0.019 ± 0.003	-0.001 ± 0.006	08-20-96	251	0.016 ± 0.003	-0.009 ± 0.012
02-27-96	278	0.021 ± 0.003	-0.002 ± 0.012	08-27-96	252	0.017 ± 0.003	-0.013 ± 0.018
03-06-96	278	0.018 ± 0.003	-0.000 ± 0.013	09-03-96	260	0.022 ± 0.003	-0.021 ± 0.016
03-12-96	278	0.028 ± 0.003	-0.003 ± 0.008	09-10-96	251	0.054 ± 0.005	-0.005 ± 0.018
03-20-96	321	0.022 ± 0.003	-0.007 ± 0.010	09-16-96	216	0.015 ± 0.003	0.003 ± 0.016
03-26-96	235	0.023 ± 0.004	0.006 ± 0.009	09-24-96	276	0.026 ± 0.003	0.017 ± 0.015
04-02-96	278	0.025 ± 0.003	0.011 ± 0.015	10-01-96	244	0.024 ± 0.003	0.011 ± 0.014
1st Quarter		0.025 ± 0.004	0.000 ± 0.006	3rd Quarter		0.021 ± 0.011	-0.001 ± 0.011
04-09-96	277	0.018 ± 0.003	-0.001 ± 0.009	10-08-96	249	0.031 ± 0.004	-0.009 ± 0.018
04-16-96	277	0.018 ± 0.003	0.001 ± 0.013	10-15-96	251	0.024 ± 0.003	0.003 ± 0.014
04-23-96	279	0.018 ± 0.003	-0.004 ± 0.008	10-22-96	305	0.034 ± 0.003	0.001 ± 0.010
04-30-96	278	0.017 ± 0.003	0.008 ± 0.012	10-29-96	319	0.027 ± 0.003	-0.002 ± 0.012
05-07-96	280	0.012 ± 0.003	-0.009 ± 0.013	11-05-96	326	0.022 ± 0.003	0.003 ± 0.012
05-14-96	276	0.017 ± 0.003	-0.006 ± 0.012	11-12-96	335	0.025 ± 0.003	-0.004 ± 0.010
05-21-96	278	0.017 ± 0.003	-0.001 ± 0.008	11-19-96	336	0.028 ± 0.003	0.005 ± 0.011
05-28-96	ND*	-	-	11-26-96	320	0.021 ± 0.003	-0.006 ± 0.015
06-04-96	250	0.010 ± 0.003	0.006 ± 0.014	12-03-96	317	0.041 ± 0.004	0.002 ± 0.011
06-11-96	293	0.007 ± 0.002	0.013 ± 0.018	12-10-96	316	0.027 ± 0.003	0.012 ± 0.010
06-17-96	252	0.013 ± 0.003	0.003 ± 0.018	12-17-96	317	0.023 ± 0.003	-0.009 ± 0.014
06-25-96	328	0.007 ± 0.002	0.001 ± 0.010	12-23-96	258	0.041 ± 0.004	-0.007 ± 0.015
07-01-96	229	0.019 ± 0.004	0.010 ± 0.016	12-30-96	310	0.028 ± 0.003	0.002 ± 0.014
2nd Quarter		0.014 ± 0.004	0.002 ± 0.007	4th Quarter		0.029 ± 0.006	0.000 ± 0.006

\* ND = No data; sampler found broke.

# POINT BEACH NUCLEAR PLANT

## AIRBORNE IODINE-131 AND GROSS BETA

### IN AIR PARTICULATE FILTERS

#### E-02 Site Boundary Control Center

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
<u>Required LLD</u>		<u>0.010</u>	<u>0.030</u>			<u>0.010</u>	<u>0.030</u>
01-09-96	309	0.029 ± 0.003	0.005 ± 0.009	07-09-96	347	0.017 ± 0.003	-0.001 ± 0.007
01-16-96	306	0.032 ± 0.003	-0.001 ± 0.012	07-16-96	302	0.018 ± 0.003	0.000 ± 0.011
01-23-96	302	0.030 ± 0.003	-0.003 ± 0.012	07-23-96	301	0.019 ± 0.003	0.003 ± 0.007
01-31-96	347	0.018 ± 0.003	0.000 ± 0.007	07-30-96	304	0.014 ± 0.003	0.000 ± 0.009
02-06-96	260	0.043 ± 0.004	0.003 ± 0.008	08-05-96	262	0.013 ± 0.003	-0.003 ± 0.015
02-13-96	303	0.026 ± 0.003	0.000 ± 0.010	08-13-96	343	0.017 ± 0.003	0.001 ± 0.011
02-20-96	301	0.019 ± 0.003	0.000 ± 0.005	08-20-96	305	0.018 ± 0.003	0.001 ± 0.009
02-27-96	303	0.019 ± 0.003	-0.002 ± 0.011	08-27-96	301	0.020 ± 0.003	-0.007 ± 0.014
03-06-96	302	0.018 ± 0.003	0.013 ± 0.011	09-03-96	304	0.026 ± 0.003	-0.002 ± 0.007
03-12-96	302	0.022 ± 0.003	-0.001 ± 0.014	09-10-96	302	0.043 ± 0.004	0.010 ± 0.014
03-20-96	349	0.019 ± 0.003	-0.010 ± 0.010	09-16-96	261	0.014 ± 0.003	0.013 ± 0.015
03-26-96	256	0.020 ± 0.003	0.000 ± 0.014	09-24-96	338	0.022 ± 0.003	0.002 ± 0.012
04-02-96	303	0.023 ± 0.003	-0.004 ± 0.013	10-01-96	299	0.022 ± 0.003	-0.004 ± 0.012
1st Quarter		0.025 ± 0.007	-0.000 ± 0.005	3rd Quarter		0.020 ± 0.008	0.001 ± 0.005
04-09-96	300	0.017 ± 0.003	-0.009 ± 0.009	10-08-96	300	0.026 ± 0.003	0.009 ± 0.016
04-16-96	302	0.014 ± 0.003	-0.012 ± 0.011	10-15-96	302	0.020 ± 0.003	-0.008 ± 0.013
04-23-96	303	0.016 ± 0.003	0.006 ± 0.012	10-22-96	302	0.028 ± 0.003	-0.014 ± 0.011
04-30-96	302	0.015 ± 0.003	0.014 ± 0.011	10-29-96	303	0.024 ± 0.003	-0.003 ± 0.013
05-07-96	305	0.009 ± 0.002	0.012 ± 0.010	11-05-96	303	0.023 ± 0.003	0.001 ± 0.006
05-14-96	299	0.015 ± 0.003	-0.017 ± 0.012	11-12-96	302	0.025 ± 0.003	-0.005 ± 0.013
05-21-96	302	0.016 ± 0.003	-0.002 ± 0.015	11-19-96	304	0.023 ± 0.003	0.001 ± 0.011
05-28-96	304	0.015 ± 0.003	0.010 ± 0.013	11-26-96	302	0.018 ± 0.003	0.004 ± 0.009
06-04-96	ND*	-	-	12-03-96	300	0.033 ± 0.004	-0.004 ± 0.011
06-11-96	211	0.011 ± 0.003	0.002 ± 0.014	12-10-96	304	0.023 ± 0.003	0.010 ± 0.009
06-17-96	260	0.018 ± 0.003	0.004 ± 0.016	12-17-96	301	0.023 ± 0.003	0.013 ± 0.018
06-25-96	339	0.008 ± 0.002	0.003 ± 0.009	12-23-96	259	0.032 ± 0.004	-0.017 ± 0.016
07-01-96	255	0.019 ± 0.003	-0.000 ± 0.014	12-30-96	302	0.026 ± 0.003	0.000 ± 0.015
2nd Quarter		0.014 ± 0.003	0.001 ± 0.010	4th Quarter		0.025 ± 0.004	-0.001 ± 0.009

\* ND = No data; sampler found broke.

POINT BEACH NUCLEAR PLANT  
AIRBORNE IODINE-131 AND GROSS BETA  
IN AIR PARTICULATE FILTERS

E-03 West Boundary

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
<u>Required LLD</u>		<u>0.010</u>	<u>0.030</u>			<u>0.010</u>	<u>0.030</u>
01-09-96	303	0.029 ± 0.003	-0.001 ± 0.011	07-09-96	343	0.016 ± 0.003	-0.012 ± 0.016
01-16-96	301	0.028 ± 0.003	0.001 ± 0.011	07-16-96	304	0.018 ± 0.003	-0.006 ± 0.012
01-23-96	301	0.028 ± 0.003	0.001 ± 0.011	07-23-96	301	0.020 ± 0.003	0.002 ± 0.007
01-31-96	353	0.019 ± 0.003	-0.002 ± 0.007	07-30-96	304	0.015 ± 0.003	-0.001 ± 0.010
02-06-96	254	0.040 ± 0.004	0.005 ± 0.007	08-05-96	270	0.015 ± 0.003	0.002 ± 0.014
02-13-96	305	0.027 ± 0.003	0.005 ± 0.009	08-13-96	355	0.015 ± 0.002	-0.000 ± 0.012
02-20-96	299	0.018 ± 0.003	0.001 ± 0.005	08-20-96	305	0.018 ± 0.003	-0.006 ± 0.011
02-27-96	303	0.024 ± 0.003	0.013 ± 0.011	08-27-96	312	0.019 ± 0.003	0.001 ± 0.013
03-06-96	312	0.021 ± 0.003	0.001 ± 0.012	09-03-96	310	0.025 ± 0.003	-0.007 ± 0.016
03-12-96	304	0.024 ± 0.003	0.003 ± 0.014	09-10-96	304	0.049 ± 0.004	0.014 ± 0.014
03-20-96	347	0.022 ± 0.003	-0.000 ± 0.010	09-16-96	262	0.015 ± 0.003	-0.004 ± 0.016
03-26-96	256	0.025 ± 0.004	0.005 ± 0.017	09-24-96	344	0.025 ± 0.003	0.001 ± 0.011
04-02-96	304	0.021 ± 0.003	-0.011 ± 0.012	10-01-96	NS*	-	-
1st Quarter		0.025 ± 0.006	0.002 ± 0.005	3rd Quarter		0.021 ± 0.010	-0.001 ± 0.007
04-09-96	302	0.019 ± 0.003	-0.008 ± 0.008	10-08-96	305	0.022 ± 0.003	0.003 ± 0.009
04-16-96	302	0.016 ± 0.003	0.002 ± 0.011	10-15-96	322	0.019 ± 0.003	0.003 ± 0.012
04-23-96	304	0.017 ± 0.003	-0.007 ± 0.012	10-22-96	311	0.026 ± 0.003	0.006 ± 0.010
04-30-96	302	0.016 ± 0.003	-0.000 ± 0.011	10-29-96	304	0.023 ± 0.003	0.003 ± 0.013
05-07-96	305	0.011 ± 0.003	-0.007 ± 0.010	11-05-96	313	0.021 ± 0.003	0.008 ± 0.014
05-14-96	300	0.017 ± 0.003	0.010 ± 0.011	11-12-96	313	0.018 ± 0.003	-0.006 ± 0.011
05-21-96	302	0.018 ± 0.003	0.010 ± 0.010	11-19-96	324	0.019 ± 0.003	-0.000 ± 0.010
05-28-96	304	0.015 ± 0.003	0.001 ± 0.008	11-26-96	320	0.013 ± 0.002	-0.006 ± 0.015
06-04-96	301	0.016 ± 0.003	0.004 ± 0.011	12-03-96	327	0.026 ± 0.003	0.004 ± 0.010
06-11-96	306	0.009 ± 0.002	0.001 ± 0.013	12-10-96	317	0.018 ± 0.003	0.008 ± 0.008
06-17-96	256	0.016 ± 0.003	-0.005 ± 0.016	12-17-96	321	0.016 ± 0.003	0.006 ± 0.015
06-25-96	348	0.009 ± 0.002	-0.000 ± 0.009	12-23-96	276	0.028 ± 0.003	0.001 ± 0.013
07-01-96	260	0.021 ± 0.003	0.011 ± 0.014	12-30-96	338	0.021 ± 0.003	-0.010 ± 0.013
2nd Quarter		0.015 ± 0.004	0.001 ± 0.007	4th Quarter		0.021 ± 0.004	0.002 ± 0.006

\* NS = No sample; Sampler found not working.

POINT BEACH NUCLEAR PLANT  
AIRBORNE IODINE-131 AND GROSS BETA  
IN AIR PARTICULATE FILTERS

E-04 North Boundary

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
Required LLD		0.010	0.030			0.010	0.030
01-09-96	303	0.032 ± 0.003	0.008 ± 0.012	07-09-96	341	0.016 ± 0.003	-0.002 ± 0.010
01-16-96	302	0.033 ± 0.003	-0.003 ± 0.012	07-16-96	304	0.018 ± 0.003	-0.016 ± 0.011
01-23-96	310	0.032 ± 0.003	0.003 ± 0.011	07-23-96	301	0.017 ± 0.003	0.000 ± 0.007
01-31-96	370	0.022 ± 0.003	-0.001 ± 0.006	07-30-96	304	0.015 ± 0.003	0.003 ± 0.009
02-06-96	258	0.045 ± 0.004	-0.003 ± 0.010	08-05-96	262	0.014 ± 0.003	-0.004 ± 0.015
02-13-96	305	0.031 ± 0.003	0.004 ± 0.010	08-13-96	343	0.015 ± 0.002	0.005 ± 0.011
02-20-96	299	0.017 ± 0.003	-0.004 ± 0.008	08-20-96	305	0.019 ± 0.003	0.004 ± 0.008
02-27-96	303	0.023 ± 0.003	0.013 ± 0.011	08-27-96	302	0.022 ± 0.003	0.002 ± 0.013
03-06-96	302	0.019 ± 0.003	0.005 ± 0.012	09-03-96	300	0.025 ± 0.003	0.001 ± 0.008
03-12-96	304	0.022 ± 0.003	-0.011 ± 0.014	09-10-96	304	0.047 ± 0.004	0.000 ± 0.013
03-20-96	347	0.021 ± 0.003	-0.014 ± 0.011	09-16-96	262	0.013 ± 0.003	0.006 ± 0.014
03-26-96	259	0.026 ± 0.004	-0.002 ± 0.012	09-24-96	332	0.024 ± 0.003	0.007 ± 0.012
04-02-96	303	0.025 ± 0.003	-0.008 ± 0.013	10-01-96	294	0.021 ± 0.003	-0.002 ± 0.013
1st Quarter		0.027 ± 0.008	-0.001 ± 0.008	3rd Quarter		0.020 ± 0.009	0.000 ± 0.006
04-09-96	302	0.020 ± 0.003	-0.010 ± 0.009	10-08-96	309	0.027 ± 0.003	0.013 ± 0.015
04-16-96	301	0.017 ± 0.003	0.012 ± 0.011	10-15-96	322	0.019 ± 0.003	0.009 ± 0.010
04-23-96	303	0.018 ± 0.003	-0.001 ± 0.011	10-22-96	321	0.024 ± 0.003	-0.010 ± 0.010
04-30-96	302	0.015 ± 0.003	0.002 ± 0.011	10-29-96	324	0.025 ± 0.003	-0.000 ± 0.014
05-07-96	305	0.013 ± 0.003	0.006 ± 0.012	11-05-96	323	0.021 ± 0.003	-0.002 ± 0.007
05-14-96	300	0.017 ± 0.003	-0.004 ± 0.012	11-12-96	313	0.022 ± 0.003	0.002 ± 0.012
05-21-96	301	0.017 ± 0.003	-0.000 ± 0.013	11-19-96	304	0.023 ± 0.003	0.012 ± 0.011
05-28-96	304	0.014 ± 0.003	0.006 ± 0.016	11-26-96	309	0.019 ± 0.003	-0.005 ± 0.015
06-04-96	301	0.013 ± 0.003	0.006 ± 0.011	12-03-96	313	0.035 ± 0.004	0.010 ± 0.011
06-11-96	305	0.010 ± 0.002	0.006 ± 0.009	12-10-96	309	0.023 ± 0.003	0.004 ± 0.008
06-17-96	257	0.016 ± 0.003	0.010 ± 0.016	12-17-96	306	0.023 ± 0.003	0.004 ± 0.016
06-25-96	348	0.010 ± 0.002	-0.001 ± 0.009	12-23-96	259	0.036 ± 0.004	-0.008 ± 0.014
07-01-96	260	0.021 ± 0.003	0.011 ± 0.015	12-30-96	318	0.027 ± 0.003	-0.014 ± 0.014
2nd Quarter		0.015 ± 0.003	0.003 ± 0.006	4th Quarter		0.025 ± 0.005	0.001 ± 0.009

POINT BEACH NUCLEAR PLANT  
AIRBORNE IODINE-131 AND GROSS BETA  
IN AIR PARTICULATE FILTERS  
E-08 G. I. Francar Residence

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
<u>Required LLD</u>		<u>0.010</u>	<u>0.030</u>			<u>0.010</u>	<u>0.030</u>
01-09-96	328	0.023 ± 0.003	0.002 ± 0.010	07-09-96	339	0.017 ± 0.003	0.004 ± 0.010
01-16-96	326	0.027 ± 0.003	-0.004 ± 0.010	07-16-96	355	0.014 ± 0.002	-0.002 ± 0.010
01-23-96	324	0.022 ± 0.003	0.013 ± 0.011	07-23-96	352	0.013 ± 0.002	0.003 ± 0.006
01-31-96	366	0.020 ± 0.003	0.000 ± 0.006	07-30-96	359	0.012 ± 0.002	-0.000 ± 0.007
02-06-96	259	0.037 ± 0.004	-0.005 ± 0.010	08-05-96	304	0.011 ± 0.003	0.009 ± 0.012
02-13-96	308	0.024 ± 0.003	-0.004 ± 0.010	08-13-96	401	0.013 ± 0.002	-0.010 ± 0.010
02-20-96	301	0.013 ± 0.003	0.002 ± 0.006	08-20-96	406	0.013 ± 0.002	-0.002 ± 0.010
02-27-96	328	0.020 ± 0.003	-0.004 ± 0.010	08-27-96	304	0.019 ± 0.003	-0.001 ± 0.014
03-06-96	327	0.020 ± 0.003	-0.002 ± 0.012	09-03-96	360	0.018 ± 0.003	-0.003 ± 0.013
03-12-96	328	0.023 ± 0.003	-0.001 ± 0.014	09-10-96	345	0.037 ± 0.003	-0.002 ± 0.014
03-20-96	375	0.018 ± 0.002	-0.001 ± 0.009	09-16-96	308	0.012 ± 0.002	-0.001 ± 0.012
03-26-96	277	0.017 ± 0.003	0.001 ± 0.011	09-24-96	402	0.017 ± 0.002	-0.002 ± 0.010
04-02-96	328	0.018 ± 0.003	-0.011 ± 0.013	10-01-96	356	0.014 ± 0.002	-0.000 ± 0.010
1st Quarter		0.022 ± 0.006	-0.001 ± 0.005	3rd Quarter		0.016 ± 0.007	-0.001 ± 0.004
04-09-96	324	0.019 ± 0.003	-0.001 ± 0.008	10-08-96	350	0.020 ± 0.003	0.001 ± 0.017
04-16-96	325	0.014 ± 0.003	-0.004 ± 0.011	10-15-96	NS*	-	-
04-23-96	328	0.014 ± 0.002	-0.007 ± 0.011	10-22-96	332	0.024 ± 0.003	0.001 ± 0.010
04-30-96	326	0.012 ± 0.002	-0.007 ± 0.010	10-29-96	334	0.024 ± 0.003	-0.002 ± 0.013
05-07-96	331	0.010 ± 0.002	-0.001 ± 0.012	11-05-96	350	0.021 ± 0.003	-0.003 ± 0.015
05-14-96	322	0.013 ± 0.002	0.001 ± 0.012	11-12-96	312	0.023 ± 0.003	-0.002 ± 0.012
05-21-96	325	0.014 ± 0.002	-0.002 ± 0.012	11-19-96	304	0.021 ± 0.003	0.003 ± 0.011
05-28-96	328	0.011 ± 0.002	-0.000 ± 0.010	11-26-96	299	0.019 ± 0.003	-0.006 ± 0.014
06-04-96	336	0.011 ± 0.002	0.003 ± 0.010	12-03-96	305	0.033 ± 0.003	0.003 ± 0.011
06-11-96	349	0.009 ± 0.002	0.008 ± 0.009	12-10-96	302	0.020 ± 0.003	0.004 ± 0.012
06-17-96	299	0.014 ± 0.003	-0.007 ± 0.014	12-17-96	301	0.018 ± 0.003	0.003 ± 0.017
06-25-96	388	0.008 ± 0.002	-0.002 ± 0.009	12-23-96	259	0.030 ± 0.004	0.016 ± 0.014
07-01-96	322	0.017 ± 0.003	0.010 ± 0.011	12-30-96	303	0.023 ± 0.003	-0.001 ± 0.014
2nd Quarter		0.013 ± 0.003	-0.001 ± 0.005	4th Quarter		0.023 ± 0.005	0.001 ± 0.005

\* NS = No sample; pump seized.



POINT BEACH NUCLEAR PLANT  
AIRBORNE IODINE-131 AND GROSS BETA  
IN AIR PARTICULATE FILTERS  
E-20 Silver Lake

Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )	Date Collected	Volume (m <sup>3</sup> )	Gross Beta (pCi/m <sup>3</sup> )	Iodine-131 (pCi/m <sup>3</sup> )
<u>Required LLD</u>		<u>0.010</u>	<u>0.030</u>			<u>0.010</u>	<u>0.030</u>
01-09-96	289	0.033 ± 0.003	0.013 ± 0.011	07-09-96	341	0.014 ± 0.002	-0.002 ± 0.007
01-16-96	284	0.029 ± 0.003	-0.006 ± 0.012	07-16-96	302	0.015 ± 0.003	-0.002 ± 0.011
01-23-96	278	0.029 ± 0.004	0.010 ± 0.012	07-23-96	300	0.018 ± 0.003	-0.002 ± 0.007
01-31-96	321	0.025 ± 0.003	-0.000 ± 0.006	07-30-96	308	0.016 ± 0.003	-0.004 ± 0.008
02-06-96	244	0.048 ± 0.004	-0.013 ± 0.017	08-05-96	260	0.014 ± 0.003	0.003 ± 0.014
02-13-96	303	0.029 ± 0.003	-0.002 ± 0.018	08-13-96	340	0.017 ± 0.003	0.010 ± 0.010
02-20-96	286	0.019 ± 0.003	0.000 ± 0.006	08-20-96	306	0.019 ± 0.003	-0.007 ± 0.009
02-27-96	286	0.020 ± 0.003	-0.008 ± 0.012	08-27-96	301	0.022 ± 0.003	0.001 ± 0.015
03-06-96	292	0.024 ± 0.003	0.003 ± 0.013	09-03-96	302	0.026 ± 0.003	0.004 ± 0.008
03-12-96	294	0.023 ± 0.003	-0.017 ± 0.016	09-10-96	305	0.039 ± 0.004	-0.012 ± 0.016
03-20-96	331	0.019 ± 0.003	-0.008 ± 0.010	09-16-96	258	0.015 ± 0.003	-0.009 ± 0.013
03-26-96	243	0.025 ± 0.004	0.000 ± 0.016	09-24-96	354	0.021 ± 0.003	-0.000 ± 0.011
04-02-96	282	0.027 ± 0.003	0.003 ± 0.013	10-01-96	314	0.021 ± 0.003	-0.003 ± 0.012
1st Quarter		0.027 ± 0.008	-0.002 ± 0.008	3rd Quarter		0.020 ± 0.007	-0.002 ± 0.006
04-09-96	279	0.020 ± 0.003	0.004 ± 0.009	10-08-96	310	0.024 ± 0.003	0.001 ± 0.008
04-16-96	287	0.015 ± 0.003	-0.002 ± 0.013	10-15-96	325	0.021 ± 0.003	-0.002 ± 0.011
04-23-96	305	0.015 ± 0.003	-0.004 ± 0.011	10-22-96	320	0.024 ± 0.003	-0.003 ± 0.011
04-30-96	296	0.013 ± 0.003	-0.009 ± 0.013	10-29-96	324	0.023 ± 0.003	0.010 ± 0.012
05-07-96	320	0.013 ± 0.003	-0.002 ± 0.012	11-05-96	315	0.020 ± 0.003	0.007 ± 0.007
05-14-96	285	0.016 ± 0.003	-0.006 ± 0.012	11-12-96	327	0.022 ± 0.003	0.002 ± 0.010
05-21-96	291	0.018 ± 0.003	-0.001 ± 0.013	11-19-96	303	0.021 ± 0.003	0.006 ± 0.011
05-28-96	281	0.012 ± 0.003	0.005 ± 0.011	11-26-96	303	0.016 ± 0.003	0.015 ± 0.016
06-04-96	281	0.015 ± 0.003	-0.001 ± 0.011	12-03-96	306	0.034 ± 0.004	-0.002 ± 0.010
06-11-96	283	0.010 ± 0.003	0.008 ± 0.011	12-10-96	298	0.023 ± 0.003	0.003 ± 0.011
06-17-96	266	0.015 ± 0.003	0.019 ± 0.016	12-17-96	304	0.023 ± 0.003	0.003 ± 0.016
06-25-96	324	0.010 ± 0.002	0.003 ± 0.011	12-23-96	256	0.037 ± 0.004	-0.002 ± 0.014
07-01-96	262	0.022 ± 0.003	0.006 ± 0.015	12-30-96	302	0.026 ± 0.003	-0.002 ± 0.015
2nd Quarter		0.015 ± 0.004	0.002 ± 0.007	4th Quarter		0.024 ± 0.005	0.003 ± 0.006

POINT BEACH NUCLEAR PLANT  
GAMMA EMITTERS IN QUARTERLY COMPOSITES OF  
AIR PARTICULATE FILTERS  
(Concentration pCi/m<sup>3</sup>)

Location	Lab Code	Be-7	Cs-134	Cs-137	Other Gammas <sup>a</sup>
<u>1st Quarter, 1996</u>					
E-01	EAP- 2211	0.094 ± 0.010	0.0000 ± 0.0004	0.0003 ± 0.0004	0.0001 ± 0.0004
E-02	- 2212	0.082 ± 0.012	0.0003 ± 0.0004	0.0001 ± 0.0004	-0.0001 ± 0.0004
E-03	- 2213	0.096 ± 0.011	0.0002 ± 0.0003	0.0001 ± 0.0004	0.0001 ± 0.0004
E-04	- 2214	0.107 ± 0.012	0.0002 ± 0.0004	0.0003 ± 0.0003	-0.0003 ± 0.0004
E-08	- 2215	0.083 ± 0.012	-0.0003 ± 0.0004	0.0001 ± 0.0004	-0.0002 ± 0.0004
E-20	- 2216	0.102 ± 0.011	0.0003 ± 0.0004	-0.0002 ± 0.0004	0.0001 ± 0.0004
<u>2nd Quarter, 1996</u>					
E-01	EAP- 4649	0.078 ± 0.013	-0.0001 ± 0.0006	0.0000 ± 0.0004	-0.0001 ± 0.0005
E-02	- 4650	0.090 ± 0.017	0.0001 ± 0.0007	-0.0002 ± 0.0005	0.0005 ± 0.0008
E-03	- 4651	0.084 ± 0.015	0.0004 ± 0.0007	0.0001 ± 0.0006	-0.0001 ± 0.0007
E-04	- 4652	0.10 ± 0.019	0.0001 ± 0.0007	0.0001 ± 0.0006	0.0000 ± 0.0006
E-08	- 4653	0.080 ± 0.012	-0.0001 ± 0.0004	-0.0002 ± 0.0004	0.0003 ± 0.0004
E-20	- 4654	0.086 ± 0.011	0.0002 ± 0.0004	0.0002 ± 0.0005	0.0000 ± 0.0004
<u>3rd Quarter, 1996</u>					
E-01	EAP- 7218	0.084 ± 0.013	0.0000 ± 0.0005	-0.0001 ± 0.0005	0.0001 ± 0.0005
E-02	- 7219	0.082 ± 0.017	-0.0003 ± 0.0007	0.0000 ± 0.0007	-0.0005 ± 0.0008
E-03	- 7220	0.11 ± 0.017	-0.0001 ± 0.0006	-0.0002 ± 0.0006	0.0006 ± 0.0007
E-04	- 7222	0.095 ± 0.011	-0.0020 ± 0.0004	-0.0001 ± 0.0004	-0.0005 ± 0.0005
E-08	- 7223	0.062 ± 0.010	-0.0001 ± 0.0005	0.0002 ± 0.0004	0.0001 ± 0.0005
E-20	- 7224	0.091 ± 0.016	0.0003 ± 0.0006	-0.0001 ± 0.0007	-0.0002 ± 0.0007
<u>4th Quarter, 1996</u>					
E-01	EAP- 9678	0.060 ± 0.011	0.0000 ± 0.0004	0.0001 ± 0.0004	-0.0001 ± 0.0004
E-02	- 9679	0.055 ± 0.001	0.0000 ± 0.0003	0.0001 ± 0.0003	0.0001 ± 0.0004
E-03	- 9680	0.049 ± 0.011	-0.0001 ± 0.0005	0.0000 ± 0.0005	0.0001 ± 0.0007
E-04	- 9681	0.050 ± 0.009	-0.0001 ± 0.0004	-0.0003 ± 0.0004	0.0005 ± 0.0004
E-08	- 9682	0.053 ± 0.011	0.0002 ± 0.0004	0.0002 ± 0.0004	0.0003 ± 0.0004
E-20	- 9683	0.051 ± 0.010	-0.0001 ± 0.0004	0.0000 ± 0.0003	0.0002 ± 0.0003

<sup>a</sup> See Introduction



POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-11 Funk Dairy Farm</u>				Required LLD
Collection Date	01-10-96	02-14-96	03-06-96	
Lab Code	EMI-152	EMI-732	EMI-1157	
Sr-89	-1.8 ± 1.5	-0.3 ± 1.2	0.9 ± 1.5	5.0
Sr-90	1.7 ± 0.4	1.2 ± 0.3	0.8 ± 0.3	1.0
I-131	0.14 ± 0.24	0.07 ± 0.15	0.14 ± 0.30	0.5
K-40	1440 ± 90	1390 ± 50	1410 ± 100	
Cs-134	0.1 ± 2.4	0.4 ± 1.0	-1.0 ± 2.8	5.0
Cs-137	0.1 ± 1.8	0.8 ± 1.0	0.4 ± 2.4	5.0
Ba-La-140	0.1 ± 2.1	-0.8 ± 0.9	-1.6 ± 3.2	5.0
Other Gammas <sup>a</sup>	0.3 ± 2.4	1.0 ± 1.2	2.1 ± 3.0	15.0
Collection Date	04-17-96	05-08-96	06-05-96	
Lab Code	EMI-2254	EMI-2850	EMI-3601	
Sr-89	0.4 ± 1.6	-0.5 ± 1.4	-0.7 ± 1.4	5.0
Sr-90	1.3 ± 0.4	1.1 ± 0.4	1.3 ± 0.3	1.0
I-131	0.19 ± 0.23	0.14 ± 0.25	0.07 ± 0.31	0.5
K-40	1410 ± 110	1460 ± 150	1440 ± 100	
Cs-134	0.7 ± 2.4	1.9 ± 3.4	0.1 ± 2.2	5.0
Cs-137	-1.2 ± 2.5	-1.4 ± 3.7	2.1 ± 2.3	5.0
Ba-La-140	-1.5 ± 1.9	0.8 ± 3.9	0.4 ± 2.7	5.0
Other Gammas <sup>a</sup>	-1.5 ± 3.0	1.2 ± 4.1	1.5 ± 2.5	15.0

<sup>a</sup> See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-11 Funk Dairy Farm</u>				Required LLD
Collection Date	07-10-96	08-14-96	09-11-96	
Lab Code	EMI-4527, 8	EMI-5541	EMI-6219	
Sr-89	-0.9 ± 0.8	0.8 ± 1.3	0.1 ± 1.0	5.0
Sr-90	1.2 ± 0.2	0.8 ± 0.3	0.8 ± 0.4	1.0
I-131	0.14 ± 0.32	-0.05 ± 0.24	0.02 ± 0.27	0.5
K-40	1410 ± 70	1390 ± 70	1440 ± 90	
Cs-134	1.4 ± 1.6	-0.8 ± 1.6	0.8 ± 2.2	5.0
Cs-137	-0.3 ± 1.5	0.9 ± 1.5	0.8 ± 2.3	5.0
Ba-La-140	-0.6 ± 1.9	-1.2 ± 1.4	5.3 ± 8.9	5.0
Other Gammas*	0.6 ± 1.8	-0.1 ± 1.7	-0.6 ± 2.5	15.0
Collection Date	10-16-96	11-06-96	12-04-96	
Lab Code	EMI-7353	EMI-8024	EMI-8725, 6	
Sr-89	0.4 ± 1.1	0.5 ± 0.8	-1.1 ± 0.7	5.0
Sr-90	0.8 ± 0.4	0.7 ± 0.3	1.2 ± 0.3	1.0
I-131	-0.08 ± 0.16	-0.07 ± 0.14	-0.18 ± 0.14	0.5
K-40	1380 ± 80	1440 ± 90	1350 ± 90	
Cs-134	0.0 ± 1.9	0.1 ± 2.0	0.3 ± 2.2	5.0
Cs-137	0.7 ± 1.6	-0.7 ± 1.9	1.4 ± 2.1	5.0
Ba-La-140	-2.4 ± 1.7	1.0 ± 1.9	-1.0 ± 1.3	5.0
Other Gammas*	0.3 ± 2.1	-0.6 ± 2.3	0.5 ± 2.6	15.0

\* See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-19 Engelbrecht Dairy</u>				
Collection Date	01-10-96	02-14-96	03-06-96	Required LLD
Lab Code	EMI-153	EMI-733	EMI-1158	
Sr-89	-0.6 ± 1.0	-0.3 ± 1.1	-0.9 ± 1.8	5.0
Sr-90	1.6 ± 0.4	1.4 ± 0.4	1.5 ± 0.4	1.0
I-131	0.08 ± 0.13	0.26 ± 0.27	0.20 ± 0.22	0.5
K-40	1550 ± 120	1460 ± 50	1470 ± 90	
Cs-134	0.7 ± 2.5	0.8 ± 1.0	-0.1 ± 1.9	5.0
Cs-137	2.4 ± 2.9	0.8 ± 1.0	-0.8 ± 1.9	5.0
Ba-La-140	-0.6 ± 2.5	0.1 ± 0.8	0.3 ± 2.6	5.0
Other Gammas*	1.9 ± 3.5	-0.3 ± 0.8	0.3 ± 2.6	15.0
Collection Date	04-17-96	05-08-96	06-05-96	
Lab Code	EMI-2255	EMI-2851	EMI-3602	
Sr-89	0.8 ± 1.4	-0.9 ± 2.2	-1.6 ± 1.8	5.0
Sr-90	0.9 ± 0.3	1.9 ± 0.4	2.3 ± 0.5	1.0
I-131	0.15 ± 0.22	0.04 ± 0.20	0.26 ± 0.27	0.5
K-40	1470 ± 110	1470 ± 110	1330 ± 90	
Cs-134	-2.0 ± 2.7	-0.4 ± 2.6	-0.1 ± 1.9	5.0
Cs-137	1.3 ± 2.5	0.7 ± 2.4	1.5 ± 1.8	5.0
Ba-La-140	-0.8 ± 2.7	-0.5 ± 2.4	-0.5 ± 2.0	5.0
Other Gammas*	0.3 ± 3.1	-0.2 ± 2.7	0.4 ± 2.3	15.0

\* See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-19 Engelbrecht Dairy</u>				Required LLD
Collection Date	07-10-96	08-14-96	09-11-96	
Lab Code	EMI-4529	EMI-5542	EMI-6220	
Sr-89	-0.3 ± 1.2	-1.2 ± 1.7	0.7 ± 1.2	5.0
Sr-90	1.5 ± 0.3	1.6 ± 0.5	1.4 ± 0.4	1.0
I-131	0.26 ± 0.26	0.08 ± 0.28	0.28 ± 0.28	0.5
K-40	1480 ± 90	1450 ± 70	1550 ± 110	
Cs-134	-0.2 ± 2.3	0.2 ± 1.4	0.2 ± 0.2	5.0
Cs-137	0.3 ± 1.8	1.6 ± 1.5	0.7 ± 2.4	5.0
Ba-La-140	-0.1 ± 2.1	-0.4 ± 1.4	1.1 ± 2.3	5.0
Other Gammas <sup>a</sup>	-0.2 ± 2.5	0.5 ± 1.9	-1.2 ± 2.9	15.0
Collection Date	10-16-96	11-06-96	12-04-96	
Lab Code	EMI-7354	EMI-8025	EMI-8727	
Sr-89	-0.5 ± 1.2	-0.7 ± 0.8	-0.3 ± 1.1	5.0
Sr-90	1.5 ± 0.4	1.2 ± 0.4	0.9 ± 0.4	1.0
I-131	0.01 ± 0.12	-0.05 ± 0.14	0.08 ± 0.21	0.5
K-40	1490 ± 60	1470 ± 100	1500 ± 150	
Cs-134	0.4 ± 1.3	0.3 ± 2.1	0.9 ± 3.6	5.0
Cs-137	1.0 ± 1.3	0.1 ± 2.0	-0.7 ± 3.3	5.0
Ba-La-140	-0.5 ± 1.3	-0.2 ± 2.3	-0.3 ± 4.0	5.0
Other Gammas <sup>a</sup>	0.3 ± 1.5	-0.8 ± 2.3	3.0 ± 4.8	15.0

<sup>a</sup> See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-21 Strutz Dairy Farm</u>				
Collection Date	01-10-96	02-14-96	03-06-96	Required LLD
Lab Code	EMI-154, 5	EMI-734	EMI-1159	
Sr-89	-0.6 ± 0.6	1.1 ± 1.2	-0.3 ± 1.4	5.0
Sr-90	0.9 ± 0.2	0.6 ± 0.3	0.8 ± 0.3	1.0
I-131	0.04 ± 0.17	0.10 ± 0.22	-0.02 ± 0.34	0.5
K-40	1570 ± 80	1540 ± 60	1510 ± 110	
Cs-134	-1.1 ± 1.7	0.6 ± 1.4	0.7 ± 2.3	5.0
Cs-137	0.0 ± 1.7	-0.7 ± 1.4	0.5 ± 2.5	5.0
Ba-La-140	-0.2 ± 1.9	-1.2 ± 1.4	-1.9 ± 1.1	5.0
Other Gammas*	0.6 ± 2.1	0.3 ± 1.8	0.3 ± 3.3	15.0
Collection Date	04-17-96	05-08-96	06-05-96	
Lab Code	EMI-2256	EMI-2852	EMI-3603	
Sr-89	0.5 ± 1.4	-1.0 ± 1.3	0.7 ± 1.3	5.0
Sr-90	0.6 ± 0.4	1.0 ± 0.4	0.7 ± 0.4	1.0
I-131	0.14 ± 0.21	0.01 ± 0.31	-0.09 ± 0.30	0.5
K-40	1510 ± 110	1540 ± 130	1480 ± 110	
Cs-134	1.4 ± 2.5	-1.1 ± 2.5	1.5 ± 2.5	5.0
Cs-137	3.1 ± 2.5	-1.1 ± 2.4	0.5 ± 2.4	5.0
Ba-La-140	-0.3 ± 2.0	-0.8 ± 2.3	-0.6 ± 2.4	5.0
Other Gammas*	0.2 ± 2.9	-1.1 ± 3.2	0.9 ± 2.8	15.0

\* See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN MILK SAMPLES  
 (Monthly Collections)

Sample Description and Concentration (pCi/L)				
<u>E-21 Strutz Dairy Farm</u>				Required LLD
Collection Date	07-10-96	08-14-96	09-11-96	
Lab Code	EMI-4530	EMI-5543	EMI-6221	
Sr-89	0.9 ± 1.0	-0.1 ± 1.3	0.0 ± 0.9	5.0
Sr-90	0.7 ± 0.2	0.8 ± 0.3	0.7 ± 0.3	1.0
I-131	0.06 ± 0.30	0.14 ± 0.23	0.21 ± 0.26	0.5
K-40	1610 ± 110	1520 ± 80	1560 ± 100	
Cs-134	1.3 ± 2.4	0.2 ± 1.8	0.4 ± 2.4	5.0
Cs-137	0.4 ± 2.3	1.0 ± 1.8	0.4 ± 2.1	5.0
Ba-La-140	-1.0 ± 2.8	-1.1 ± 1.9	-0.5 ± 2.4	5.0
Other Gammas <sup>a</sup>	0.4 ± 3.0	2.2 ± 2.3	-0.1 ± 2.5	15.0
Collection Date	10-16-96	11-06-96	12-04-96	
Lab Code	EMI-7355	EMI-8026	EMI-8728	
Sr-89	0.4 ± 1.1	-0.4 ± 0.8	0.5 ± 1.1	5.0
Sr-90	0.8 ± 0.3	1.0 ± 0.3	0.8 ± 0.4	1.0
I-131	0.13 ± 0.18	-0.08 ± 0.14	0.02 ± 0.21	
K-40	1440 ± 50	1420 ± 100	1490 ± 120	
Cs-134	-0.3 ± 1.1	-0.2 ± 2.2	-1.0 ± 2.4	5.0
Cs-137	0.5 ± 1.0	1.1 ± 2.1	2.4 ± 2.8	5.0
Ba-La-140	0.0 ± 0.9	0.2 ± 2.2	-0.8 ± 1.8	5.0
Other Gammas <sup>a</sup>	0.2 ± 1.3	-1.0 ± 2.5	1.2 ± 3.0	15.0

<sup>a</sup> See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN WELL WATER SAMPLES, E-10

(Quarterly Collections)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Required LLD
Collection Date	01-03-96	04-02-96	07-02-96	09-04-96	
Lab Code	EW-107	EW-1919	EW-4426	EW-6048	
Gross Beta	2.6 ± 0.1	-0.5 ± 1.5	0.9 ± 2.0	0.8 ± 2.1	4.0
H-3	-27.0 ± 98.0	13.5 ± 75.9	-27.0 ± 76.0	49.0 ± 83.0	500
Sr-89	0.36 ± 0.64	0.20 ± 0.66	0.17 ± 0.93	-0.54 ± 0.70	5.0
Sr-90	-0.02 ± 0.14	0.05 ± 0.22	0.18 ± 0.21	0.17 ± 0.24	1.0
I-131	0.15 ± 0.22	-0.02 ± 0.18	0.12 ± 0.39	0.31 ± 0.31	0.5
Mn-54	0.6 ± 1.0	0.4 ± 1.2	-0.3 ± 1.6	0.8 ± 2.1	10.0
Fe-59	-1.8 ± 2.4	1.2 ± 2.5	-0.3 ± 3.2	1.0 ± 3.5	30.0
Co-58	-0.6 ± 1.1	0.2 ± 1.2	2.2 ± 1.7	1.1 ± 1.9	10.0
Co-60	-0.5 ± 1.1	0.9 ± 1.4	0.8 ± 1.7	0.5 ± 2.1	10.0
Zn-65	-1.0 ± 2.1	-3.1 ± 2.6	-1.4 ± 3.8	-3.5 ± 4.4	30.0
Zr-Nb-95	0.3 ± 1.4	-0.1 ± 1.2	0.5 ± 2.2	-1.9 ± 2.7	15.0
Cs-134	-0.3 ± 1.1	0.9 ± 1.2	0.0 ± 1.8	-0.5 ± 2.3	10.0
Cs-137	1.7 ± 1.2	0.6 ± 1.4	1.0 ± 1.8	-0.6 ± 2.4	10.0
Ba-La-140	-0.6 ± 2.9	-2.0 ± 2.1	3.0 ± 4.3	-0.2 ± 2.6	15.0
Other Gammas <sup>a</sup>	-1.8 ± 1.5	-0.8 ± 1.4	-0.8 ± 2.1	-1.5 ± 2.4	30.0

<sup>a</sup> Ru-103

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN LAKE WATER SAMPLES

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume <sup>a</sup>
Gross Beta (Required LLD 4.0)					
January	2.7 ± 0.5	2.2 ± 0.4	2.0 ± 6.0	2.9 ± 0.6	1.7 ± 0.5
February	4.5 ± 0.8	3.3 ± 0.6	2.2 ± 0.5	2.5 ± 0.7	2.2 ± 0.5
March	2.7 ± 0.4	2.7 ± 0.5	2.3 ± 0.5	2.7 ± 0.5	2.8 ± 0.4
April	2.9 ± 0.4	2.1 ± 0.5	2.3 ± 0.5	3.3 ± 0.6	2.5 ± 0.4
May	3.4 ± 0.6	2.9 ± 0.6	2.4 ± 0.5	1.9 ± 0.5	3.2 ± 0.4
June	3.0 ± 0.6	2.6 ± 0.6	2.3 ± 0.6	4.5 ± 0.7	2.0 ± 0.5
July	1.8 ± 0.5	1.6 ± 0.5	2.3 ± 0.5	2.7 ± 0.5	2.4 ± 0.5
August	2.5 ± 0.5	5.1 ± 0.6	2.7 ± 0.7	3.2 ± 0.5	2.1 ± 0.5
September	1.8 ± 0.5	1.6 ± 0.5	4.6 ± 0.6	2.6 ± 0.4	3.8 ± 0.6
October	2.9 ± 0.4	3.4 ± 0.6	2.9 ± 0.5	2.6 ± 0.5	2.5 ± 0.5
November	2.4 ± 0.5	2.5 ± 0.5	2.1 ± 0.5	2.7 ± 0.5	1.9 ± 0.5
December	1.3 ± 0.5	2.9 ± 0.6	3.2 ± 0.6	2.7 ± 0.6	1.8 ± 0.5
Iodine-131 (Required LLD 0.5)					
January	0.21 ± 0.24	0.06 ± 0.19	0.07 ± 0.21	0.12 ± 0.21	0.04 ± 0.17
February	0.16 ± 0.21	0.05 ± 0.17	0.19 ± 0.20	0.17 ± 0.18	0.01 ± 0.18
March	0.30 ± 0.37	0.16 ± 0.16	0.28 ± 0.29	0.13 ± 0.30	0.10 ± 0.15
April	0.06 ± 0.17	0.16 ± 0.21	0.15 ± 0.22	-0.06 ± 0.17	0.04 ± 0.25
May	-0.28 ± 0.26	0.21 ± 0.23	0.16 ± 0.20	0.02 ± 0.16	-0.01 ± 0.27
June	0.21 ± 0.26	0.10 ± 0.25	0.15 ± 0.26	0.09 ± 0.25	0.05 ± 0.24
July	0.25 ± 0.43	0.00 ± 0.48	0.12 ± 0.42	-0.10 ± 0.44	0.11 ± 0.30
August	0.06 ± 0.23	0.02 ± 0.23	0.11 ± 0.23	0.05 ± 0.23	0.12 ± 0.30
September	-0.14 ± 0.27	0.08 ± 0.26	-0.08 ± 0.26	-0.20 ± 0.25	0.15 ± 0.43
October	-0.05 ± 0.50	-0.25 ± 0.44	0.02 ± 0.29	0.14 ± 0.41	0.13 ± 0.19
November	-0.01 ± 0.24	-0.06 ± 0.23	-0.01 ± 0.22	0.08 ± 0.22	0.19 ± 0.21
December	-0.10 ± 0.20	-0.09 ± 0.21	-0.04 ± 0.20	0.07 ± 0.21	-0.07 ± 0.22

<sup>a</sup> E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.



**POINT BEACH NUCLEAR PLANT**  
**RADIOACTIVITY IN LAKE WATER SAMPLES**

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume <sup>a</sup>
<hr/> Mn-54 (Required LLD 10.0) <hr/>					
January	-1.7 ± 1.5	0.7 ± 1.3	1.1 ± 1.1	0.2 ± 0.9	1.3 ± 1.7
February	-0.5 ± 1.1	0.3 ± 1.4	0.4 ± 2.0	-0.7 ± 1.6	0.3 ± 1.9
March	0.7 ± 2.4	0.9 ± 2.0	0.4 ± 1.8	0.9 ± 3.0	1.2 ± 1.6
April	0.0 ± 1.3	-1.5 ± 2.0	-0.9 ± 1.6	1.7 ± 2.9	-0.6 ± 1.9
May	0.7 ± 1.4	-0.1 ± 1.8	0.7 ± 2.5	1.1 ± 1.4	0.2 ± 1.9
June	0.8 ± 1.7	-0.9 ± 3.2	1.0 ± 3.2	-0.2 ± 1.8	0.5 ± 1.5
July	-0.6 ± 2.0	-0.3 ± 1.6	0.3 ± 1.0	0.1 ± 3.0	1.1 ± 1.6
August	-1.6 ± 2.9	1.4 ± 2.7	1.3 ± 3.4	1.3 ± 1.6	0.8 ± 2.5
September	-2.3 ± 2.0	0.3 ± 2.8	0.8 ± 3.3	0.3 ± 1.2	-0.8 ± 2.6
October	-4.4 ± 3.3	-0.9 ± 1.7	-0.3 ± 1.9	0.6 ± 1.9	-0.2 ± 2.1
November	0.3 ± 2.3	-0.3 ± 1.8	0.5 ± 2.6	-0.8 ± 2.3	-0.3 ± 2.4
December	0.4 ± 2.0	3.7 ± 2.8	-0.8 ± 2.0	-2.9 ± 2.5	-0.1 ± 2.3
<hr/> Fe-59 (Required LLD 30.0) <hr/>					
January	3.0 ± 3.6	0.5 ± 3.0	-0.6 ± 2.9	-0.5 ± 2.0	-0.9 ± 3.1
February	-0.4 ± 2.1	-0.2 ± 2.9	-2.0 ± 4.2	1.9 ± 3.6	0.4 ± 3.6
March	-2.5 ± 5.3	-0.4 ± 4.0	-2.0 ± 4.4	-2.5 ± 6.1	1.4 ± 4.1
April	-0.2 ± 2.8	-1.8 ± 4.0	-3.5 ± 3.8	3.1 ± 5.8	-0.7 ± 4.8
May	0.5 ± 3.7	0.6 ± 4.1	-0.4 ± 8.3	-1.0 ± 3.5	1.8 ± 4.6
June	-3.7 ± 5.1	2.6 ± 6.9	0.9 ± 8.9	-0.6 ± 4.4	-1.6 ± 3.0
July	-0.3 ± 4.8	-0.3 ± 4.2	0.6 ± 2.1	-6.3 ± 6.3	4.1 ± 3.0
August	4.1 ± 6.9	4.2 ± 6.3	0.5 ± 8.3	1.3 ± 3.8	-3.8 ± 9.8
September	-2.6 ± 6.4	0.8 ± 5.1	4.1 ± 8.1	0.3 ± 2.5	8.5 ± 6.9
October	0.5 ± 9.7	-2.0 ± 4.8	-0.3 ± 1.9	-1.2 ± 5.0	-1.9 ± 4.1
November	2.0 ± 6.6	-0.2 ± 3.5	2.0 ± 5.5	3.1 ± 7.2	1.4 ± 6.0
December	1.6 ± 5.3	-2.5 ± 6.8	-3.2 ± 6.0	1.1 ± 4.6	0.5 ± 5.3

<sup>a</sup> E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

**POINT BEACH NUCLEAR PLANT**  
**RADIOACTIVITY IN LAKE WATER SAMPLES**

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume*
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Co-58 (Required LLD 10.0)

January	0.3 ± 2.3	0.4 ± 1.4	0.7 ± 1.6	0.1 ± 0.8	0.9 ± 2.9
February	0.1 ± 1.0	1.3 ± 1.4	-0.4 ± 2.0	1.4 ± 1.6	-1.3 ± 2.3
March	1.4 ± 2.5	-0.2 ± 1.9	0.7 ± 1.8	-0.7 ± 2.7	0.7 ± 1.6
April	-0.1 ± 1.5	1.4 ± 2.4	0.1 ± 1.6	-1.0 ± 2.7	1.0 ± 2.2
May	1.2 ± 1.7	1.3 ± 2.0	1.6 ± 3.3	-0.9 ± 1.6	-1.2 ± 2.6
June	-0.3 ± 2.1	0.3 ± 3.5	1.6 ± 3.6	-0.1 ± 2.2	-1.3 ± 1.6
July	0.0 ± 2.4	0.4 ± 1.7	0.5 ± 1.1	1.5 ± 3.2	-1.2 ± 1.9
August	1.5 ± 2.9	-0.6 ± 2.4	-2.7 ± 3.6	-1.2 ± 1.9	-3.8 ± 3.3
September	0.5 ± 5.7	0.3 ± 3.1	0.2 ± 4.0	-0.1 ± 1.1	1.7 ± 3.4
October	1.8 ± 4.1	-1.3 ± 2.5	0.5 ± 2.2	0.6 ± 2.1	-0.5 ± 2.0
November	-1.4 ± 3.0	-0.2 ± 1.8	0.1 ± 2.8	-0.4 ± 2.4	-1.0 ± 2.5
December	-0.1 ± 2.3	-0.5 ± 1.7	-0.6 ± 2.2	-0.4 ± 2.2	1.4 ± 2.7

Co-60 (Required LLD 10.0)

January	0.8 ± 1.6	0.7 ± 1.4	-0.1 ± 1.3	0.9 ± 0.8	0.3 ± 1.6
February	0.8 ± 1.0	-0.3 ± 1.5	-0.2 ± 2.2	-0.3 ± 1.6	0.1 ± 1.8
March	3.0 ± 4.7	-1.1 ± 2.3	-0.5 ± 1.8	-2.6 ± 2.9	2.1 ± 1.7
April	1.7 ± 1.7	0.3 ± 2.2	2.3 ± 2.1	3.6 ± 2.9	2.5 ± 2.3
May	0.4 ± 1.5	-0.4 ± 2.0	4.1 ± 2.3	1.3 ± 1.6	1.2 ± 1.9
June	-1.2 ± 1.7	1.4 ± 2.8	1.3 ± 3.3	0.6 ± 2.0	0.7 ± 1.6
July	1.8 ± 2.1	1.2 ± 1.6	0.8 ± 1.0	1.3 ± 2.7	-0.1 ± 1.9
August	0.6 ± 2.8	2.9 ± 2.1	-2.2 ± 4.4	1.0 ± 1.8	0.6 ± 2.9
September	-0.2 ± 1.7	-0.3 ± 3.2	1.9 ± 3.2	0.2 ± 0.9	0.4 ± 3.2
October	-0.6 ± 2.7	1.4 ± 1.8	0.4 ± 2.1	1.4 ± 1.4	-0.2 ± 9.0
November	2.6 ± 2.9	0.8 ± 2.1	-3.2 ± 2.3	1.5 ± 2.7	0.4 ± 2.7
December	0.5 ± 2.0	1.6 ± 3.1	2.1 ± 2.5	-1.1 ± 1.8	0.2 ± 3.6

\* E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN LAKE WATER SAMPLES

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume <sup>a</sup>
<hr/> Zn-65 (Required LLD 30.0) <hr/>					
January	-1.2 ± 3.2	-0.5 ± 2.7	-0.6 ± 2.6	-0.8 ± 1.7	-0.3 ± 3.1
February	-2.4 ± 2.2	-0.3 ± 2.9	0.7 ± 4.3	-3.5 ± 3.5	0.7 ± 4.3
March	0.3 ± 6.2	0.2 ± 4.2	1.4 ± 3.9	-5.2 ± 6.5	-1.3 ± 3.1
April	0.5 ± 2.8	-0.7 ± 4.3	1.7 ± 3.2	3.8 ± 4.7	-0.8 ± 4.2
May	-1.9 ± 2.5	-0.7 ± 4.1	-3.7 ± 7.0	1.6 ± 2.8	-1.6 ± 4.5
June	-1.0 ± 4.3	-4.1 ± 7.5	-2.5 ± 7.1	-3.9 ± 3.9	0.4 ± 2.8
July	-1.8 ± 4.3	-3.1 ± 3.7	0.4 ± 2.1	-1.7 ± 6.5	0.3 ± 2.7
August	2.2 ± 5.9	0.7 ± 5.8	-1.7 ± 6.6	-0.6 ± 4.2	1.2 ± 7.2
September	-1.1 ± 4.2	4.9 ± 6.0	-0.8 ± 6.5	-0.4 ± 2.1	-5.4 ± 5.0
October	0.7 ± 7.3	0.5 ± 3.4	-2.4 ± 4.3	-2.5 ± 4.0	1.8 ± 4.3
November	-3.8 ± 5.8	1.0 ± 3.6	0.5 ± 5.1	-2.6 ± 5.3	-1.6 ± 5.5
December	-1.3 ± 4.3	0.7 ± 6.5	-5.6 ± 5.6	-1.9 ± 3.9	-2.2 ± 4.3
<hr/> Zr-Nb-95 (Required LLD 15.0) <hr/>					
January	0.4 ± 2.9	-0.5 ± 1.6	-0.1 ± 1.6	-0.6 ± 1.7	1.9 ± 1.9
February	-0.4 ± 1.1	-1.5 ± 1.4	0.1 ± 2.1	-0.2 ± 1.5	0.5 ± 2.3
March	0.4 ± 3.7	-0.4 ± 2.3	0.6 ± 2.0	0.6 ± 3.0	0.2 ± 1.7
April	-1.3 ± 2.4	0.3 ± 2.1	1.5 ± 2.2	0.2 ± 3.1	-1.4 ± 4.1
May	-0.4 ± 2.2	-1.9 ± 2.8	-2.4 ± 3.9	-0.7 ± 2.3	-0.7 ± 2.8
June	-0.8 ± 2.8	2.3 ± 3.6	-0.1 ± 3.7	0.8 ± 2.5	1.2 ± 2.0
July	1.7 ± 2.5	0.2 ± 1.9	0.1 ± 1.3	-2.2 ± 4.1	-0.7 ± 3.3
August	2.7 ± 5.9	-3.1 ± 3.6	-1.3 ± 4.8	0.7 ± 2.3	0.2 ± 4.2
September	1.3 ± 5.8	2.5 ± 4.5	-3.4 ± 5.1	-1.2 ± 2.3	-3.9 ± 4.2
October	-1.2 ± 6.4	-1.7 ± 3.5	-2.6 ± 2.3	2.0 ± 3.0	-1.0 ± 2.8
November	-0.3 ± 3.1	0.5 ± 2.4	-2.6 ± 3.6	1.8 ± 3.4	-0.3 ± 3.0
December	-0.2 ± 2.5	0.2 ± 4.9	2.5 ± 2.7	-0.9 ± 4.5	-2.4 ± 4.6

<sup>a</sup> E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN LAKE WATER SAMPLES

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unit-1 Discharge Flume*
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Cs-134 (Required LLD 10.0)

January	0.0 ± 1.6	0.7 ± 1.4	-0.1 ± 1.3	-0.5 ± 0.9	0.3 ± 1.8
February	0.4 ± 1.2	0.2 ± 1.6	-0.4 ± 2.0	0.1 ± 1.7	-0.9 ± 2.3
March	1.0 ± 2.8	1.0 ± 2.1	-1.6 ± 2.0	-3.1 ± 3.0	1.5 ± 1.7
April	-0.2 ± 1.6	0.3 ± 1.9	-1.1 ± 2.0	0.2 ± 3.4	-1.3 ± 1.8
May	-1.1 ± 1.8	0.6 ± 2.2	2.6 ± 3.0	0.5 ± 1.5	-0.8 ± 2.4
June	0.5 ± 2.4	0.9 ± 3.4	-1.7 ± 3.2	-1.9 ± 1.9	-1.4 ± 2.0
July	-0.5 ± 2.2	0.2 ± 1.8	-0.2 ± 1.1	-0.4 ± 2.9	0.1 ± 1.9
August	-3.5 ± 3.0	1.7 ± 2.4	-2.2 ± 4.0	0.7 ± 2.2	-0.8 ± 3.0
September	0.6 ± 2.0	-0.7 ± 3.0	0.8 ± 3.2	0.6 ± 1.3	0.4 ± 3.0
October	0.8 ± 3.8	0.4 ± 2.3	-1.0 ± 2.2	0.8 ± 2.1	0.7 ± 2.2
November	-1.2 ± 3.2	1.5 ± 1.9	0.7 ± 2.5	0.2 ± 2.3	0.4 ± 3.3
December	-0.5 ± 2.4	-0.7 ± 2.7	1.9 ± 2.3	1.5 ± 1.9	0.4 ± 3.1

Cs-137 (Required LLD 10.0)

January	2.0 ± 1.5	0.5 ± 1.4	-0.4 ± 1.2	0.6 ± 0.9	-0.3 ± 1.7
February	1.3 ± 1.2	0.4 ± 1.8	0.6 ± 2.1	0.7 ± 1.8	1.7 ± 2.2
March	-2.9 ± 2.9	1.2 ± 1.9	-0.5 ± 2.0	-2.8 ± 3.1	1.7 ± 1.9
April	0.5 ± 1.6	0.6 ± 2.5	-0.1 ± 2.1	-0.8 ± 3.1	1.4 ± 2.3
May	0.2 ± 1.6	0.3 ± 2.3	-0.1 ± 3.0	0.7 ± 1.7	1.5 ± 2.2
June	0.2 ± 2.3	-0.8 ± 3.6	1.2 ± 3.3	2.6 ± 2.1	0.1 ± 2.0
July	-1.7 ± 2.2	-0.9 ± 1.8	1.3 ± 1.4	-0.4 ± 3.0	3.1 ± 2.1
August	-1.2 ± 3.0	1.7 ± 2.9	1.4 ± 3.8	1.1 ± 2.2	0.5 ± 2.9
September	0.1 ± 2.1	0.2 ± 3.0	2.1 ± 3.8	-0.1 ± 1.1	1.1 ± 2.8
October	2.0 ± 3.3	0.3 ± 2.2	0.5 ± 2.1	-1.4 ± 2.2	-1.3 ± 2.2
November	1.4 ± 2.8	0.1 ± 1.9	-0.4 ± 2.5	-0.4 ± 2.4	0.3 ± 2.9
December	1.1 ± 2.4	-0.2 ± 3.0	0.8 ± 2.9	1.0 ± 2.3	0.2 ± 3.6

\* E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

**POINT BEACH NUCLEAR PLANT**  
**RADIOACTIVITY IN LAKE WATER SAMPLES**

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume <sup>a</sup>
<hr/> Ba-La-140 (Required LLD 15.0) <hr/>					
January	0.1 ± 4.9	-2.0 ± 3.4	-2.0 ± 3.9	-1.9 ± 2.6	-1.2 ± 2.9
February	1.3 ± 1.4	0.2 ± 2.4	-1.5 ± 2.6	-0.6 ± 2.1	0.9 ± 2.9
March	-3.4 ± 3.6	0.9 ± 3.0	-1.9 ± 2.6	1.2 ± 3.7	-0.1 ± 2.2
April	-2.5 ± 2.7	0.3 ± 3.3	-0.3 ± 2.9	-3.1 ± 4.2	-9.5 ± 5.7
May	2.1 ± 2.8	-3.3 ± 5.0	-1.7 ± 6.8	-0.7 ± 2.9	-1.2 ± 6.6
June	-1.6 ± 4.7	-1.3 ± 7.3	2.1 ± 7.8	-3.2 ± 4.3	-0.7 ± 3.0
July	2.3 ± 5.2	0.2 ± 5.1	2.2 ± 2.5	-6.4 ± 7.3	-2.5 ± 2.7
August	0.8 ± 7.9	-2.9 ± 4.6	2.9 ± 10.3	0.5 ± 4.3	8.4 ± 14.7
September	-2.6 ± 9.7	4.2 ± 5.9	-11.3 ± 12.7	-1.0 ± 3.4	6.9 ± 12.0
October	-3.5 ± 10.0	-3.3 ± 9.2	-4.8 ± 9.3	2.4 ± 11.2	0.4 ± 5.2
November	0.8 ± 16.0	-0.9 ± 4.6	-1.6 ± 8.5	2.8 ± 5.5	-4.2 ± 4.7
December	-3.7 ± 5.3	-7.0 ± 6.5	3.2 ± 3.2	-8.4 ± 5.4	1.2 ± 1.6
<hr/> Other Gammas <sup>b</sup> (Required LLD 30.0) <hr/>					
January	-1.7 ± 2.1	1.0 ± 1.7	-1.5 ± 1.6	-0.7 ± 1.1	0.2 ± 1.8
February	-0.4 ± 1.1	-1.2 ± 1.5	-1.1 ± 2.2	-2.2 ± 1.8	0.6 ± 2.2
March	2.3 ± 2.9	-0.5 ± 2.6	-2.7 ± 2.2	1.4 ± 3.2	0.3 ± 1.8
April	0.3 ± 1.7	1.1 ± 2.8	0.1 ± 2.4	-2.2 ± 3.4	1.8 ± 2.6
May	-0.7 ± 2.3	1.2 ± 2.9	0.1 ± 4.0	0.3 ± 2.1	0.5 ± 3.3
June	-2.3 ± 2.5	-4.2 ± 3.8	-1.1 ± 4.1	0.8 ± 2.9	-1.4 ± 2.1
July	0.5 ± 2.8	0.6 ± 2.2	-1.8 ± 1.4	-1.5 ± 3.6	-0.8 ± 2.3
August	0.3 ± 3.7	-1.2 ± 3.3	-4.0 ± 4.8	-1.9 ± 2.5	0.7 ± 4.1
September	1.0 ± 3.9	3.4 ± 5.0	0.7 ± 5.1	1.1 ± 1.6	1.0 ± 4.3
October	-0.8 ± 4.9	-2.1 ± 3.7	2.1 ± 3.0	-2.3 ± 3.0	-0.2 ± 3.0
November	-0.2 ± 3.4	0.3 ± 2.4	-0.6 ± 3.4	-1.7 ± 3.3	1.2 ± 3.3
December	-1.5 ± 2.9	-3.0 ± 3.8	-2.6 ± 3.5	-1.4 ± 3.1	0.9 ± 3.2

<sup>a</sup> E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

<sup>b</sup> Ru-103

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN LAKE WATER SAMPLES

(Monthly Collections)

(pCi/L)

1996 Collection Period	E-01 Met. Tower	E-05 Two Creeks Park	E-06 Coast Guard Station	E-33 Nature Conservancy	E-12 Unite-1 Discharge Flume <sup>a</sup>
<hr/> Sr-89 (Required LLD 5.0) <hr/>					
1st Quarter	-0.6 ± 1.0	-0.4 ± 0.8	0.1 ± 1.1	-0.9 ± 1.1	-1.4 ± 1.0
2nd Quarter	-0.3 ± 1.2	-0.3 ± 1.1	-0.5 ± 1.2	-0.3 ± 1.3	0.0 ± 9.0
3rd Quarter	-1.4 ± 1.2	0.2 ± 1.0	-0.7 ± 0.8	0.1 ± 0.8	-0.7 ± 0.7
4th Quarter	-0.1 ± 0.6	-0.4 ± 0.7	-0.1 ± 0.6	-0.9 ± 0.9	-1.2 ± 0.7
<hr/> Sr-90 (Required LLD 1.0) <hr/>					
1st Quarter	0.6 ± 0.4	0.4 ± 0.3	0.4 ± 0.4	0.8 ± 0.4	1.0 ± 0.4
2nd Quarter	0.7 ± 0.3	0.5 ± 0.3	0.6 ± 0.3	0.7 ± 0.3	0.6 ± 0.3
3rd Quarter	1.1 ± 0.4	0.7 ± 0.3	0.6 ± 0.3	0.3 ± 0.2	0.8 ± 0.3
4th Quarter	0.5 ± 0.3	0.7 ± 0.3	0.5 ± 0.3	0.8 ± 0.4	1.0 ± 0.3
<hr/> H-3 (Required LLD 500) <hr/>					
1st Quarter	73 ± 96	135 ± 70	8 ± 94	862 ± 124	224 ± 85
2nd Quarter	350 ± 93	243 ± 89	130 ± 84	20 ± 79	239 ± 88
3rd Quarter	142 ± 84	135 ± 84	99 ± 82	92 ± 82	152 ± 84
4th Quarter	87 ± 84	43 ± 82	101 ± 84	69 ± 83	35 ± 91

<sup>a</sup> E-12 Unit-1 Discharge Flume is a monthly composite of weekly grab samples.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN FISH SAMPLES

EDIBLE PORTIONS ONLY - COLLECTED AT E-13

(Collected 3x / year)

Sample Description and Concentration (pCi/g wet)				Required LLD
Collection Date	03-20-96	03-20-96	03-20-96	
Lab Code	EF-1446, 7	EF-1448	EF-1449	
Type	Carp	Trout	Salmon	
Ratio (wet wt./dry wt.)	7.97	6.50	4.30	
Gross Beta	1.91 ± 0.05	1.38 ± 0.06	1.84 ± 0.06	0.5
K-40	2.00 ± 0.24	1.32 ± 0.46	1.67 ± 0.29	
Mn-54	-0.003 ± 0.007	0.007 ± 0.019	-0.003 ± 0.009	0.13
Fe-59	-0.004 ± 0.025	-0.011 ± 0.062	-0.003 ± 0.032	0.26
Co-58	-0.004 ± 0.009	0.015 ± 0.021	-0.006 ± 0.015	0.13
Co-60	0.000 ± 0.008	0.016 ± 0.020	0.007 ± 0.011	0.13
Zn-65	-0.014 ± 0.015	0.019 ± 0.036	0.013 ± 0.025	0.26
Cs-134	0.001 ± 0.008	-0.003 ± 0.021	-0.001 ± 0.011	0.13
Cs-137	0.015 ± 0.008	0.084 ± 0.030	0.021 ± 0.013	0.15
Other Gammas*	0.004 ± 0.012	0.019 ± 0.034	-0.003 ± 0.021	0.5
Collection Date	03-20-96			
Lab Code	EF-1450			
Type	Sucker			
Ratio (wet wt./dry wt.)	4.90			
Gross Beta	2.71 ± 0.10			0.5
K-40	1.98 ± 0.31			
Mn-54	-0.002 ± 0.009			0.13
Fe-59	0.005 ± 0.029			0.26
Co-58	-0.006 ± 0.012			0.13
Co-60	-0.005 ± 0.009			0.13
Zn-65	-0.009 ± 0.021			0.26
Cs-134	0.001 ± 0.009			0.13
Cs-137	0.021 ± 0.010			0.15
Other Gammas*	0.001 ± 0.016			0.5

\* Ru-103



POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN FISH SAMPLES

EDIBLE PORTIONS ONLY - COLLECTED AT E-13

(Collected 3x / year)

Sample Description and Concentration (pCi/g wet)			Required LLD
Collection Date	08-09-96	08-09-96	
Lab Code	EF-5426	EF-5427	
Type	Brook Trout	Walleye	
Ratio (wet wt./dry wt.)	3.30	4.50	
Gross Beta	2.05 ± 0.07	2.98 ± 0.09	0.5
K-40	2.53 ± 0.22	2.31 ± 0.21	
Mn-54	0.0002 ± 0.0045	0.0048 ± 0.0040	0.13
Fe-59	-0.0057 ± 0.0169	0.0012 ± 0.0017	0.26
Co-58	-0.0003 ± 0.0065	-0.0005 ± 0.0060	0.13
Co-60	0.0016 ± 0.0051	-0.0021 ± 0.0062	0.13
Zn-65	-0.0046 ± 0.0121	-0.0086 ± 0.0119	0.26
Cs-134	0.0019 ± 0.0047	0.0059 ± 0.0050	0.13
Cs-137	0.040 ± 0.013	0.104 ± 0.018	0.15
Other Gammas <sup>a</sup>	-0.0070 ± 0.0071	-0.0016 ± 0.0077	0.5
Collection Date			
Lab Code			
Type			
Ratio (wet wt./dry wt.)			
Gross Beta			0.5
K-40			
Mn-54			0.13
Fe-59			0.26
Co-58			0.13
Co-60			0.13
Zn-65			0.26
Cs-134			0.13
Cs-137			0.15
Other Gammas <sup>a</sup>			0.5

<sup>a</sup> Ru-103



POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN FISH SAMPLES

EDIBLE PORTIONS ONLY - COLLECTED AT E-13

(Collected 3x / year)

Sample Description and Concentration (pCi/g wet)				Required LLD
Collection Date	12-11-96	12-11-97	12-11-96	
Lab Code	EF-9040, 1	EF-9042	EF-9043	
Type	White Fish	Perch	Lake Trout	
Ratio (wet wt./dry wt.)	4.84	2.93	2.59	
Gross Beta	3.54 ± 0.07	3.51 ± 0.08	2.55 ± 0.06	0.5
K-40	3.15 ± 0.32	1.90 ± 0.25	2.80 ± 0.38	
Mn-54	0.0010 ± 0.0071	0.0020 ± 0.0199	0.0003 ± 0.0006	0.13
Fe-59	-0.0110 ± 0.0181	0.0178 ± 0.0363	0.0005 ± 0.0187	0.26
Co-58	-0.0031 ± 0.0084	-0.0092 ± 0.0177	-0.0014 ± 0.0072	0.13
Co-60	-0.0001 ± 0.0101	-0.0172 ± 0.0220	-0.0049 ± 0.0101	0.13
Zn-65	0.0051 ± 0.0191	-0.0511 ± 0.0460	-0.0017 ± 0.0159	0.26
Cs-134	-0.0012 ± 0.0083	-0.0011 ± 0.0208	0.0007 ± 0.0074	0.13
Cs-137	0.0403 ± 0.0124	0.0271 ± 0.0217	0.0232 ± 0.0121	0.15
Other Gammas*	0.0021 ± 0.0084	-0.0029 ± 0.0204	-0.0010 ± 0.0086	0.5
Collection Date				
Lab Code				
Type*				
Ratio (wet wt./dry wt.)				
Gross Beta				0.5
K-40				
Mn-54				0.13
Fe-59				0.26
Co-58				0.13
Co-60				0.13
Zn-65				0.26
Cs-134				0.13
Cs-137				0.15
Other Gammas*				0.5

\* Ru-103

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES  
(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)				
Collection Date	04-10-96	04-10-96	04-10-96	Required
Lab Code	ESS-2067	ESS-2068	ESS-2069	LLD
Location	E-01	E-05	E-06	
Gross Beta	7.96 ± 1.16	5.74 ± 1.16	8.41 ± 1.28	2.0
Be-7	0.039 ± 0.090	-0.027 ± 0.078	0.032 ± 0.082	
K-40	7.72 ± 0.52	8.41 ± 0.47	7.02 ± 0.43	-
Cs-137	0.048 ± 0.022	0.022 ± 0.010	0.025 ± 0.010	0.15
Tl-208	0.045 ± 0.020	0.072 ± 0.016	0.058 ± 0.019	-
Pb-212	0.176 ± 0.029	0.177 ± 0.025	0.118 ± 0.024	-
Bi-214	0.213 ± 0.043	0.193 ± 0.034	0.139 ± 0.033	-
Ra-226	0.45 ± 0.16	0.51 ± 0.15	0.40 ± 0.14	-
Ac-228	0.203 ± 0.079	0.212 ± 0.056	0.155 ± 0.048	-
Collection Date	04-10-96	04-10-96		
Lab Code	ESS-2070	ESS-2071		
Location	E-12	E-33		
Gross Beta	7.99 ± 1.22	4.40 ± 1.12		2.0
Be-7	-0.003 ± 0.056	0.042 ± 0.044		
K-40	9.07 ± 0.40	6.05 ± 0.27		-
Cs-137	0.028 ± 0.008	0.030 ± 0.012		0.15
Tl-208	0.056 ± 0.015	0.039 ± 0.009		-
Pb-212	0.134 ± 0.021	0.123 ± 0.017		-
Bi-214	0.114 ± 0.030	0.114 ± 0.024		-
Ra-226	0.41 ± 0.13	0.353 ± 0.099		-
Ac-228	0.139 ± 0.050	0.143 ± 0.035		-

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)				
Collection Date	10-02-96	10-02-96	10-02-96	Required
Lab Code	ESS-7023	ESS-7024, 5	ESS-7026	LLD
Location	E-01	E-05	E-06	
Gross Beta	4.78 ± 1.81	7.06 ± 1.40	7.84 ± 2.10	2.0
Be-7	0.054 ± 0.072	-0.150 ± 0.067	-0.016 ± 0.105	
K-40	4.52 ± 0.31	7.04 ± 0.34	5.91 ± 0.43	-
Cs-137	0.035 ± 0.013	0.019 ± 0.009	0.042 ± 0.017	0.15
Tl-208	0.036 ± 0.014	0.040 ± 0.012	0.068 ± 0.017	-
Pb-212	0.132 ± 0.226	0.118 ± 0.018	0.182 ± 0.027	-
Bi-214	0.127 ± 0.226	0.130 ± 0.022	0.168 ± 0.036	-
Ra-226	0.31 ± 0.14	0.37 ± 0.11	0.35 ± 0.15	-
Ac-228	0.132 ± 0.039	0.121 ± 0.835	0.176 ± 0.052	-
Collection Date	10-02-96	10-02-96		
Lab Code	ESS-7027	ESS-7028		
Location	E-12	E-33		
Gross Beta	7.85 ± 1.91	7.17 ± 2.05		2.0
Be-7	0.020 ± 0.071	0.072 ± 0.072		
K-40	7.14 ± 0.37	6.60 ± 0.35		-
Cs-137	0.051 ± 0.017	0.027 ± 0.013		0.15
Tl-208	0.043 ± 0.016	0.047 ± 0.014		-
Pb-212	0.154 ± 0.025	0.160 ± 0.024		-
Bi-214	0.137 ± 0.024	0.137 ± 0.023		-
Ra-226	0.32 ± 0.19	0.46 ± 0.13		-
Ac-228	0.195 ± 0.047	0.197 ± 0.044		-

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN SOIL SAMPLES  
(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)					
Collection Date	05-08-96	05-08-96	05-08-96	05-08-96	Required
Lab Code	ESO-2983	ESO-2984	ESO-2985	ESO-2986	LLD
Location	E-01	E-02	E-03	E-04	
Gross Beta	5.34 ± 1.86	24.17 ± 2.80	20.94 ± 2.80	25.24 ± 2.86	2.0
Be-7	0.14 ± 0.11	0.23 ± 0.14	0.30 ± 0.14	0.28 ± 0.18	
K-40	5.91 ± 0.52	23.78 ± 0.90	17.30 ± 0.88	21.57 ± 1.10	-
Cs-137	0.033 ± 0.015	0.177 ± 0.035	0.038 ± 0.018	0.141 ± 0.047	0.15
Tl-208	0.049 ± 0.015	0.220 ± 0.030	0.130 ± 0.032	0.240 ± 0.047	-
Pb-212	0.129 ± 0.040	0.701 ± 0.047	0.467 ± 0.047	0.766 ± 0.062	-
Bi-214	0.165 ± 0.055	0.418 ± 0.076	0.365 ± 0.061	0.506 ± 0.094	-
Ra-226	0.32 ± 0.24	0.99 ± 0.34	0.61 ± 0.25	1.14 ± 0.420	-
Ac-228	0.10 ± 0.04	0.76 ± 0.10	0.54 ± 0.10	0.76 ± 0.130	-
Collection Date	05-08-96	05-08-96	05-08-96	05-08-96	
Lab Code	ESO-2987	ESO-2988	ESO-2989	ESO-2990	
Location	E-06	E-08	E-09	E-20	
Gross Beta	8.16 ± 1.95	16.00 ± 2.51	29.52 ± 3.05	18.33 ± 2.64	2.0
Be-7	0.92 ± 0.30	0.56 ± 0.18	1.33 ± 0.29	0.63 ± 0.28	
K-40	12.37 ± 0.73	13.85 ± 0.84	25.80 ± 0.93	15.63 ± 0.92	-
Cs-137	0.085 ± 0.034	0.020 ± 0.018	0.224 ± 0.039	0.202 ± 0.034	0.15
Tl-208	0.120 ± 0.032	0.133 ± 0.037	0.250 ± 0.039	0.147 ± 0.044	-
Pb-212	0.319 ± 0.042	0.363 ± 0.060	0.654 ± 0.047	0.443 ± 0.055	-
Bi-214	0.292 ± 0.073	0.261 ± 0.060	0.520 ± 0.070	0.509 ± 0.234	-
Ra-226	0.58 ± 0.27	0.60 ± 0.28	1.21 ± 0.40	0.72 ± 0.30	-
Ac-228	0.26 ± 0.09	0.42 ± 0.11	0.73 ± 0.13	0.39 ± 0.11	-

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN SOIL SAMPLES  
(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date	10-02-96	10-02-96	10-02-96	10-02-96	Required
Lab Code	ESO-7029	ESO-7030	ESO-7031	ESO-7032	LLD
Location	E-01	E-02	E-03	E-04	
Gross Beta	19.26 ± 2.57	23.95 ± 3.02	20.52 ± 2.63	19.85 ± 2.59	2.0
Be-7	0.19 ± 0.13	0.21 ± 0.23	0.16 ± 0.14	0.13 ± 0.12	
K-40	16.64 ± 0.64	20.19 ± 1.15	14.69 ± 0.62	14.95 ± 0.64	-
Cs-137	0.173 ± 0.029	0.110 ± 0.039	0.807 ± 0.041	0.127 ± 0.023	0.15
Tl-208	0.163 ± 0.027	0.205 ± 0.047	0.154 ± 0.034	0.140 ± 0.025	-
Pb-212	0.562 ± 0.044	0.729 ± 0.080	0.451 ± 0.044	0.487 ± 0.045	-
Bi-214	0.383 ± 0.042	0.417 ± 0.067	0.396 ± 0.044	0.358 ± 0.043	-
Ra-226	1.20 ± 0.46	1.04 ± 0.50	0.96 ± 0.33	0.93 ± 0.31	-
Ac-228	0.510 ± 0.100	0.773 ± 0.155	0.482 ± 0.072	0.458 ± 0.091	-
Collection Date	10-02-96	10-02-96	10-02-96	10-02-96	
Lab Code	ESO-7033	ESO-7034	ESO-7035	ESO-7036	
Location	E-06	E-08	E-09	E-20	
Gross Beta	8.64 ± 2.08	18.73 ± 2.70	29.03 ± 3.21	23.18 ± 2.76	2.0
Be-7	0.14 ± 0.09	0.09 ± 0.11	0.18 ± 0.16	0.04 ± 0.14	
K-40	7.44 ± 0.38	13.59 ± 0.56	21.68 ± 0.85	17.45 ± 0.69	-
Cs-137	0.045 ± 0.014	0.465 ± 0.034	0.187 ± 0.030	0.370 ± 0.035	0.15
Tl-208	0.062 ± 0.014	0.098 ± 0.023	0.205 ± 0.031	0.205 ± 0.031	-
Pb-212	0.199 ± 0.031	0.274 ± 0.035	0.578 ± 0.032	0.624 ± 0.048	-
Bi-214	0.188 ± 0.026	0.237 ± 0.035	0.472 ± 0.055	0.483 ± 0.052	-
Ra-226	0.41 ± 0.19	0.50 ± 0.25	1.05 ± 0.39	1.07 ± 0.31	-
Ac-228	0.227 ± 0.050	0.330 ± 0.070	0.630 ± 0.120	0.665 ± 0.106	-

**POINT BEACH NUCLEAR PLANT**  
**RADIOACTIVITY IN VEGETATION SAMPLES**

(Tri-Annual Collections)

(pCi/g wet)

Location	Collection Date	Lab Code	Ratio wet dry	Gross Beta	Be-7	Cs-134	Cs-137	I-131	K-40	Other <sup>a</sup>
Required LLD				0.25	0.25	0.06	0.08	0.06	0.25	0.25
E-01	05-08-96	EG -2970	3.10	4.91±0.17	6.80±0.58	0.018±0.019	0.013±0.019	0.008±0.032	5.16±0.70	-0.005±0.023
E-02	05-08-96	-2971	5.58	4.97±0.16	1.03±0.30	-0.001±0.018	-0.002±0.016	-0.003±0.026	5.87±0.67	0.008±0.019
E-03	05-08-96	-2972	6.68	4.73±0.14	1.10±0.21	0.006±0.009	-0.003±0.008	0.006±0.013	6.34±0.44	0.002±0.010
E-04	05-08-96	-2973	7.82	4.25±0.14	2.08±0.37	-0.004±0.019	0.003±0.021	-0.003±0.023	5.62±0.79	0.021±0.028
E-06	05-08-96	-2974	3.19	4.09±0.15	3.84±0.42	-0.003±0.014	0.15±0.035	-0.001±0.021	3.41±0.47	0.010±0.014
E-08	05-08-96	-2975	5.72	3.80±0.12	1.81±0.12	0.003±0.005	0.004±0.005	-0.001±0.007	4.15±0.22	0.002±0.006
E-09	05-08-96	-2976	6.04	4.14±0.13	1.55±0.22	0.010±0.009	0.007±0.009	0.005±0.014	4.75±0.38	0.005±0.009
E-20	05-08-96	-2977	5.54	4.22±0.15	1.61±0.22	0.003±0.011	-0.001±0.011	-0.009±0.016	4.36±0.43	0.009±0.014
E-01	07-03-96	EG -4414	3.46	4.29±0.16	0.93±0.24	0.001±0.010	0.001±0.010	-0.002±0.018	4.87±0.40	0.008±0.011
E-02	07-03-96	-4415	4.47	4.90±0.17	1.21±0.19	0.002±0.011	0.006±0.011	0.003±0.016	6.29±0.47	0.007±0.012
E-03	07-03-96	-4416	4.02	6.13±0.23	0.51±0.17	-0.002±0.013	0.002±0.012	0.013±0.022	6.51±0.55	0.008±0.012
E-04	07-03-96	-4417	3.84	6.21±0.22	1.21±0.28	-0.004±0.013	0.007±0.012	0.001±0.019	7.37±0.55	-0.002±0.014
E-06	07-03-96	-4418	3.47	4.68±0.17	0.70±0.33	0.010±0.014	0.028±0.016	0.016±0.032	4.25±0.62	0.002±0.018
E-08	07-03-96	-4419	3.35	6.36±0.23	0.66±0.24	0.001±0.012	0.007±0.011	-0.011±0.023	7.21±0.59	0.005±0.015
E-09	07-03-96	-4420	3.62	5.57±0.21	0.90±0.22	-0.001±0.012	-0.003±0.011	0.003±0.017	6.04±0.49	0.004±0.015
E-20	07-03-96	-4421	6.86	4.29±0.14	0.73±0.18	0.000±0.012	0.004±0.011	-0.005±0.014	4.76±0.47	0.001±0.014
E-01	10-02-96	EG -7000	2.86	5.26±0.20	1.82±0.41	0.002±0.016	0.001±0.013	-0.002±0.029	4.62±0.63	-0.004±0.019
E-02	10-02-96	-7001, 2	2.51	5.20±0.18	2.12±0.25	0.007±0.011	-0.005±0.011	0.000±0.021	5.86±0.42	0.006±0.013
E-03	10-02-96	-7003	2.94	6.60±0.24	3.36±0.31	-0.003±0.012	0.005±0.010	-0.007±0.024	6.36±0.52	0.006±0.013
E-04	10-02-96	-7004	3.59	4.69±0.21	3.83±0.36	0.008±0.015	0.009±0.014	-0.003±0.027	5.05±0.55	0.005±0.017
E-06	10-02-96	-7005	2.47	3.41±0.16	1.06±0.21	0.005±0.010	0.012±0.012	-0.008±0.019	3.10±0.36	-0.006±0.010
E-08	10-02-96	-7006	2.87	5.38±0.20	2.07±0.33	0.003±0.017	0.014±0.016	0.011±0.027	4.81±0.58	0.007±0.018
E-09	10-02-96	-7007	2.16	4.85±0.20	3.61±0.21	0.004±0.007	0.005±0.008	-0.009±0.017	4.77±0.32	0.004±0.008
E-20	10-02-96	-7008	3.26	5.66±0.21	1.17±0.17	0.008±0.010	0.013±0.010	-0.006±0.017	7.54±0.46	-0.001±0.014

<sup>a</sup> See Introduction.

POINT BEACH NUCLEAR PLANT  
RADIOACTIVITY IN AQUATIC VEGETATION

(Semiannual Collections)

Sample Description and Concentration (pCi/g wet)				
Collection Date	06-06-96	08-07-96		Required
Lab Code	ESL-5421	ESL-5423		LLD
Location	E-5	E-5		
Ratio (wet wt./dry wt.)	3.52	4.10		
Gross Beta	5.91 ± 0.66	4.69 ± 0.49		0.25
Be-7	1.88 ± 0.35	1.71 ± 0.25		-
K-40	2.30 ± 0.22	2.18 ± 0.30		-
Co-58	-0.010 ± 0.000	0.003 ± 0.010		0.25
Co-60	0.010 ± 0.007	0.011 ± 0.012		0.25
Cs-134	0.010 ± 0.007	0.007 ± 0.010		0.25
Cs-137	0.059 ± 0.014	0.050 ± 0.016		0.25
Collection Date	06-06-96	08-07-96	10-02-96	
Lab Code	ESL-5422	ESL-5424, 5	ESL-7009	
Location	E-12	E-12	E-12	
Ratio (wet wt./dry wt.)	1.47	3.31	2.86	
Gross Beta	6.96 ± 1.40	3.50 ± 0.41	4.29 ± 0.39	0.25
Be-7	0.39 ± 0.09	0.55 ± 0.11	0.40 ± 0.20	-
K-40	4.71 ± 0.15	1.60 ± 0.17	1.63 ± 0.45	-
Co-58	0.001 ± 0.000	-0.004 ± 0.006	0.003 ± 0.018	0.25
Co-60	0.003 ± 0.004	0.005 ± 0.007	0.000 ± 0.017	0.25
Cs-134	0.003 ± 0.003	0.007 ± 0.006	0.008 ± 0.016	0.25
Cs-137	0.026 ± 0.006	0.035 ± 0.011	0.021 ± 0.017	0.25

POINT BEACH NUCLEAR PLANT  
AMBIENT GAMMA RADIATION (TLD)

1st. Quarter, 1996

Date Annealed:		12-27-95	Days in the field	89
Date Placed:		01-05-96	Days from Annealing	
Date Removed:		04-03-96	to Readout:	114
Date Read:		04-19-96		
Location	Days in Field	Total mR	Net mR	Net mR per 7 days
<u>Indicator</u>				
E-1	89	13.7 ± 0.3	10.8 ± 0.6	0.85 ± 0.05
E-2	89	12.4 ± 0.3	9.5 ± 0.6	0.75 ± 0.05
E-3	89	14.0 ± 0.4	11.1 ± 0.6	0.87 ± 0.05
E-4	89	12.7 ± 0.6	9.8 ± 0.8	0.77 ± 0.06
E-5	89	12.1 ± 0.2	9.2 ± 0.5	0.72 ± 0.04
E-6	89	11.6 ± 0.5	8.7 ± 0.7	0.68 ± 0.06
E-7	89	10.9 ± 0.5	8.0 ± 0.7	0.63 ± 0.06
E-8	89	13.8 ± 0.1	10.9 ± 0.5	0.86 ± 0.04
E-9	89	12.6 ± 0.6	9.7 ± 0.8	0.76 ± 0.06
E-12	89	11.2 ± 0.7	8.3 ± 0.9	0.65 ± 0.07
E-14	89	12.6 ± 0.3	9.7 ± 0.6	0.76 ± 0.05
E-15	89	15.1 ± 0.5	12.2 ± 0.7	0.96 ± 0.06
E-16	89	12.7 ± 0.3	9.8 ± 0.6	0.77 ± 0.05
E-17	89	15.5 ± 0.6	12.6 ± 0.8	0.99 ± 0.06
E-18	89	12.7 ± 0.2	9.8 ± 0.5	0.77 ± 0.04
E-22	89	12.5 ± 0.2	9.6 ± 0.5	0.76 ± 0.04
E-23	89	14.1 ± 0.2	11.2 ± 0.5	0.88 ± 0.04
E-24	89	13.4 ± 0.6	10.5 ± 0.8	0.83 ± 0.06
E-25	89	14.1 ± 0.6	11.2 ± 0.8	0.88 ± 0.06
E-26	89	11.6 ± 0.8	8.7 ± 0.9	0.68 ± 0.07
E-27	89	11.1 ± 0.4	8.2 ± 0.6	0.64 ± 0.05
E-28	89	11.8 ± 0.6	8.9 ± 0.8	0.70 ± 0.06
E-29	89	12.2 ± 0.4	9.3 ± 0.6	0.73 ± 0.05
E-30	89	11.5 ± 0.4	8.6 ± 0.6	0.68 ± 0.05
E-31	89	15.1 ± 0.5	12.2 ± 0.7	0.96 ± 0.06
E-32	89	14.1 ± 0.3	11.2 ± 0.6	0.88 ± 0.05
<u>Control</u>				
E-20	89	12.0 ± 0.7	9.1 ± 0.9	0.72 ± 0.07
Mean±S.D.		12.9 ± 1.3	10.0 ± 1.3	0.78 ± 0.10
<u>In-Transit Exposure</u>				
Date Annealed		01-25-96	03-29-96	
Date Read		01-26-96	04-19-96	
<u>Total mR</u>				
ITC-1		3.1 ± 0.3	2.6 ± 0.2	
ITC-2		3.1 ± 0.2	2.6 ± 0.2	



POINT BEACH NUCLEAR PLANT  
AMBIENT GAMMA RADIATION (TLD)

2nd. Quarter, 1996

Date Annealed:		03-29-96	Days in the field	90
Date Placed:		04-03-96	Days from Annealing	
Date Removed:		07-02-96	to Readout:	108
Date Read:		07-15-96		
Location	Days in Field	Total mR	Net mR	Net mR per 7 days
<u>Indicator</u>				
E-1	90	12.5 ± 0.9	8.6 ± 1.0	0.67 ± 0.08
E-2	90	13.7 ± 0.4	9.8 ± 0.6	0.76 ± 0.05
E-3	90	13.9 ± 0.1	10.0 ± 0.4	0.78 ± 0.03
E-4	90	13.4 ± 0.8	9.5 ± 0.9	0.74 ± 0.07
E-5	90	15.2 ± 0.4	11.3 ± 0.6	0.88 ± 0.05
E-6	90	14.1 ± 0.3	10.2 ± 0.5	0.79 ± 0.04
E-7	90	13.0 ± 1.0	9.1 ± 1.1	0.71 ± 0.09
E-8	90	13.7 ± 0.4	9.8 ± 0.6	0.76 ± 0.05
E-9	90	15.5 ± 0.4	11.6 ± 0.6	0.90 ± 0.05
E-12	90	13.3 ± 0.7	9.4 ± 0.8	0.73 ± 0.06
E-14	90	16.7 ± 0.3	12.8 ± 0.5	1.00 ± 0.04
E-15	90	17.8 ± 0.5	13.9 ± 0.6	1.08 ± 0.05
E-16	90	15.5 ± 0.4	11.6 ± 0.6	0.90 ± 0.05
E-17	90	14.1 ± 0.3	10.2 ± 0.5	0.79 ± 0.04
E-18	90	17.3 ± 0.2	13.4 ± 0.4	1.04 ± 0.03
E-22	90	15.8 ± 0.6	11.9 ± 0.7	0.93 ± 0.05
E-23	90	18.1 ± 0.3	14.2 ± 0.5	1.10 ± 0.04
E-24	90	15.5 ± 0.3	11.6 ± 0.5	0.90 ± 0.04
E-25	90	18.1 ± 0.4	14.2 ± 0.6	1.10 ± 0.05
E-26	90	14.6 ± 0.3	10.7 ± 0.5	0.83 ± 0.04
E-27	90	15.5 ± 0.5	11.6 ± 0.6	0.90 ± 0.05
E-28	90	16.9 ± 0.5	13.0 ± 0.6	1.01 ± 0.05
E-29	90	15.2 ± 0.3	11.3 ± 0.5	0.88 ± 0.04
E-30	90	14.3 ± 0.3	10.4 ± 0.5	0.81 ± 0.04
E-31	90	17.2 ± 0.4	13.3 ± 0.6	1.03 ± 0.05
E-32	90	18.4 ± 0.5	14.5 ± 0.6	1.13 ± 0.05
<u>Control</u>				
E-20	90	15.8 ± 0.5	11.9 ± 0.6	0.93 ± 0.05
Mean ± S.D.		15.4 ± 1.7	11.5 ± 1.7	0.89 ± 0.13
<u>In-Transit Exposure</u>				
Date Annealed		03-29-96	06-26-96	
Date Read		04-19-96	07-15-96	
<u>Total mR</u>				
ITC-1		2.6 ± 0.2	5.2 ± 0.2	
ITC-2		2.6 ± 0.2	5.2 ± 0.2	

POINT BEACH NUCLEAR PLANT  
 AMBIENT GAMMA RADIATION (TLD)

3rd. Quarter, 1996

Date Annealed:	06-26-96	Days in the field	93	
Date Placed:	07-02-96	Days from Annealing		
Date Removed:	10-03-96	to Readout:	104	
Date Read:	10-08-96			
Location	Days in Field	Total mR	Net mR	Net mR per 7 days
<u>Indicator</u>				
E-1	93	16.4 ± 0.4	12.5 ± 0.5	0.94 ± 0.04
E-2	93	16.2 ± 0.4	12.3 ± 0.5	0.93 ± 0.04
E-3	93	16.7 ± 0.4	12.8 ± 0.5	0.96 ± 0.04
E-4	93	15.2 ± 0.3	11.3 ± 0.4	0.85 ± 0.03
E-5	93	14.6 ± 0.1	10.7 ± 0.3	0.81 ± 0.02
E-6	93	13.2 ± 0.2	9.3 ± 0.4	0.70 ± 0.03
E-7	93	13.2 ± 0.2	9.3 ± 0.4	0.70 ± 0.03
E-8	93	14.6 ± 0.1	10.7 ± 0.3	0.81 ± 0.02
E-9	93	14.7 ± 0.3	10.8 ± 0.4	0.81 ± 0.03
E-12	93	13.0 ± 0.1	9.1 ± 0.3	0.68 ± 0.02
E-14	93	17.0 ± 0.6	13.1 ± 0.7	0.99 ± 0.05
E-15	93	16.3 ± 0.4	12.4 ± 0.5	0.93 ± 0.04
E-16	93	14.6 ± 0.3	10.7 ± 0.4	0.81 ± 0.03
E-17	93	13.4 ± 0.2	9.5 ± 0.4	0.72 ± 0.03
E-18	93	16.3 ± 0.6	12.4 ± 0.7	0.93 ± 0.05
E-22	93	15.9 ± 0.6	12.0 ± 0.7	0.90 ± 0.05
E-23	93	15.9 ± 0.4	12.0 ± 0.5	0.90 ± 0.04
E-24	93	14.9 ± 0.2	11.0 ± 0.4	0.83 ± 0.03
E-25	93	14.4 ± 0.3	10.5 ± 0.4	0.79 ± 0.03
E-26	93	13.4 ± 0.2	9.5 ± 0.4	0.72 ± 0.03
E-27	93	13.6 ± 0.8	9.7 ± 0.9	0.73 ± 0.07
E-28	93	13.1 ± 0.6	9.2 ± 0.7	0.69 ± 0.05
E-29	93	14.8 ± 0.3	10.9 ± 0.4	0.82 ± 0.03
E-30	93	13.7 ± 1.0	9.8 ± 1.0	0.74 ± 0.08
E-31	93	14.5 ± 0.2	10.6 ± 0.4	0.80 ± 0.03
E-32	93	16.2 ± 0.5	12.3 ± 0.6	0.93 ± 0.05
<u>Control</u>				
E-20	93	13.0 ± 0.5	9.1 ± 0.6	0.68 ± 0.05
Mean±S.D.		14.8 ± 1.3	10.9 ± 1.3	0.82 ± 0.10
<u>In-Transit Exposure</u>				
Date Annealed	06-26-96	09-26-96		
Date Read	07-15-96	10-08-96		
<u>Total mR</u>				
ITC-1	5.2 ± 0.2	2.5 ± 0.1		
ITC-2	5.2 ± 0.2	2.5 ± 0.1		

POINT BEACH NUCLEAR PLANT  
 AMBIENT GAMMA RADIATION (TLD)

4th. Quarter, 1996

Date Annealed:		09-26-96	Days in the field	96
Date Placed:		10-03-96	Days from Annealing	
Date Removed:		01-07-97	to Readout:	109
Date Read:		01-13-97		
Location	Days in Field	Total mR	Net mR	Net mR per 7 days
<u>Indicator</u>				
E-1	96	13.8 ± 0.6	10.6 ± 0.6	0.77 ± 0.04
E-2	96	14.0 ± 0.3	10.8 ± 0.4	0.79 ± 0.03
E-3	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-4	96	14.4 ± 0.1	11.2 ± 0.2	0.82 ± 0.01
E-5	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-6	96	12.7 ± 0.5	9.5 ± 0.5	0.69 ± 0.04
E-7	96	13.3 ± 0.8	10.1 ± 0.8	0.74 ± 0.06
E-8	96	14.5 ± 0.4	11.3 ± 0.4	0.82 ± 0.03
E-9	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-12	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-14	96	15.8 ± 0.4	12.6 ± 0.4	0.92 ± 0.03
E-15	96	17.9 ± 0.5	14.7 ± 0.5	1.07 ± 0.04
E-16	96	15.7 ± 0.5	12.5 ± 0.5	0.91 ± 0.04
E-17	96	13.8 ± 0.8	10.6 ± 0.8	0.77 ± 0.06
E-18	96	16.2 ± 0.4	13.0 ± 0.4	0.95 ± 0.03
E-22	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-23	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-24	96	16.4 ± 0.6	13.2 ± 0.6	0.96 ± 0.04
E-25	96	13.6 ± 0.6	10.4 ± 0.6	0.76 ± 0.04
E-26	96	13.1 ± 0.5	9.9 ± 0.5	0.72 ± 0.04
E-27	96	12.8 ± 0.3	9.6 ± 0.4	0.70 ± 0.03
E-28	96	12.9 ± 0.3	9.7 ± 0.4	0.71 ± 0.03
E-29	96	14.4 ± 0.2	11.2 ± 0.3	0.82 ± 0.02
E-30	96	16.0 ± 0.5	12.8 ± 0.5	0.93 ± 0.04
E-31	96	ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
E-32	96	17.7 ± 0.6	14.5 ± 0.6	1.06 ± 0.04
<u>Control</u>				
E-20	96	13.8 ± 0.6	10.6 ± 0.6	0.77 ± 0.04
Mean ± S.D.		14.6 ± 1.6	11.5 ± 1.6	0.83 ± 0.12
<u>In-Transit Exposure</u>				
Date Annealed		09-26-96	12-26-96	
Date Read		10-08-96	01-13-97	
<u>Total mR</u>				
ITC-1		2.5 ± 0.1	4.0 ± 0.1	
ITC-2		2.5 ± 0.1	3.9 ± 0.1	

<sup>a</sup> ND = No data; TLD lost in the field.

APPENDIX A  
INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Teledyne's Midwest Laboratory participates in intercomparison studies administered by U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. The results are reported in Appendix A. Also reported are results of International Intercomparison and Teledyne testing of TLD's, as well as, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program. Appendix A is updated four times a year; the complete Appendix is included in March, June, September and December monthly progress reports only. Please refer to March, June, September and December progress reports for information.

January, 1996 through December, 1996

## Appendix A

### Interlaboratory Comparison Program Results

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

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

The results in Table A-1 were obtained through participation in the environmental sample crosscheck program for milk, water and air filters during the past twelve months. Data for previous years is available upon request.

This program is conducted by the U.S. Environmental Protection Agency Intercomparison and Calibration Section, Quality Assurance Branch, Environmental Monitoring and Support Laboratory, Las Vegas, Nevada.

The results in Table A-2 were obtained for Thermoluminescent Dosimeters (TLDs), since 1976 via various International Intercomparisons of Environmental Dosimeters under the sponsorships listed in Table A-2. Also Teledyne testing results are listed.

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

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

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

The results in Table A-6 were obtained through participation in the mixed analyte performance evaluation program.

The results in Table A-7 were obtained through participation in the Environmental Measurement Laboratory Quality Assessment Program.

Attachment A lists acceptance criteria for "spiked" samples.

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

Table A-1. U.S. Environmental Protection Agency's crosscheck program, comparison of EPA and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>b</sup>		
				Teledyne Results $\pm 2$ Sigma <sup>c</sup>	EPA Result <sup>d</sup> 1s, N=1	Control Limits
STW-752	WATER	Jan, 1996	Gr. Alpha	19.5 $\pm$ 1.5	12.1 $\pm$ 5.0	3.4 - 20.8
STW-752	WATER	Jan, 1996	Gr. Beta	7.9 $\pm$ 0.7	7.0 $\pm$ 5.0	0.0 - 15.7
STW-753	WATER	Feb, 1996	I-131	70.7 $\pm$ 1.5	67.0 $\pm$ 7.0	54.9 - 79.1
STW-761	WATER	Mar, 1996	H-3	22,776.7 $\pm$ 185.0	22,002.0 $\pm$ 2,200.0	18,185.1 - 25,818.9
Results where inadvertently not reported due to administrative error in laboratory.						
STW-762	WATER	Apr, 1996	Gr. Alpha	63.8 $\pm$ 2.4	74.8 $\pm$ 18.7	42.4 - 107.2
STW-762	WATER	Apr, 1996	Ra-226	2.9 $\pm$ 0.1	3.0 $\pm$ 0.5	2.1 - 3.9
STW-762	WATER	Apr, 1996	Ra-228	4.6 $\pm$ 0.2	5.0 $\pm$ 1.3	2.7 - 7.3
STW-762	WATER	Apr, 1996	Uranium	57.9 $\pm$ 0.5	58.4 $\pm$ 5.8	48.3 - 68.5
STW-763	WATER	Apr, 1996	Co-60	32.7 $\pm$ 0.6	31.0 $\pm$ 5.0	22.3 - 39.7
STW-763	WATER	Apr, 1996	Cs-134	43.0 $\pm$ 1.0	46.0 $\pm$ 5.0	37.3 - 54.7
STW-763	WATER	Apr, 1996	Cs-137	52.3 $\pm$ 2.1	50.0 $\pm$ 5.0	41.3 - 58.7
STW-763	WATER	Apr, 1996	Gr. Beta	154.9 $\pm$ 6.8	166.9 $\pm$ 25.0	123.5 - 210.3
STW-763	WATER	Apr, 1996	Sr-89	42.0 $\pm$ 3.6	43.0 $\pm$ 5.0	34.3 - 51.7
STW-763	WATER	Apr, 1996	Sr-90	15.3 $\pm$ 2.9	16.0 $\pm$ 5.0	7.3 - 24.7
STW-764	WATER	Jun, 1996	Ba-133	745.0 $\pm$ 19.5	745.0 $\pm$ 75.0	614.9 - 875.1
STW-764	WATER	Jun, 1996	Co-60	97.0 $\pm$ 3.6	99.0 $\pm$ 5.0	90.3 - 107.7
STW-764	WATER	Jun, 1996	Cs-134	72.3 $\pm$ 1.2	79.0 $\pm$ 5.0	70.3 - 87.7
STW-764	WATER	Jun, 1996	Cs-137	201.3 $\pm$ 2.3	197.0 $\pm$ 10.0	179.7 - 214.3
STW-764	WATER	Jun, 1996	Zn-65	298.0 $\pm$ 6.2	300.0 $\pm$ 30.0	248.0 - 352.0
STW-765	WATER	Jun, 1996	Ra-226	4.8 $\pm$ 0.1	4.9 $\pm$ 0.7	3.7 - 6.1
STW-765	WATER	Jun, 1996	Ra-228	8.7 $\pm$ 0.5	9.0 $\pm$ 2.3	5.0 - 13.0
STW-765	WATER	Jun, 1996	Uranium	20.4 $\pm$ 0.8	20.2 $\pm$ 3.0	15.0 - 25.4
STW-767	WATER	Jul, 1996	Sr-89	24.0 $\pm$ 2.0	25.0 $\pm$ 5.0	16.3 - 33.7
STW-767	WATER	Jul, 1996	Sr-90	11.3 $\pm$ 1.2	12.0 $\pm$ 5.0	3.3 - 20.7
STW-768	WATER	Jul, 1996	Gr. Alpha	20.1 $\pm$ 2.0	24.4 $\pm$ 6.1	13.8 - 35.0
STW-768	WATER	Jul, 1996	Gr. Beta	40.4 $\pm$ 3.2	44.8 $\pm$ 5.0	36.1 - 53.5
STW-774	WATER	Sep, 1996	Ra-226	13.6 $\pm$ 0.4	14.0 $\pm$ 2.1	10.4 - 17.6
STW-774	WATER	Sep, 1996	Ra-228	5.4 $\pm$ 0.4	4.7 $\pm$ 1.2	2.6 - 6.8
STW-774	WATER	Sep, 1996	Uranium	10.0 $\pm$ 0.2	10.1 $\pm$ 3.0	4.9 - 15.3
STW-775	WATER	Oct, 1996	I-131	26.7 $\pm$ 2.3	27.0 $\pm$ 6.0	16.6 - 37.4
STW-778	WATER	Oct, 1996	Gr. Alpha	10.2 $\pm$ 2.1	10.3 $\pm$ 5.0	1.6 - 19.0
STW-778	WATER	Oct, 1996	Gr. Beta	32.0 $\pm$ 1.6	34.6 $\pm$ 5.0	25.9 - 43.3

Table A-1. U.S. Environmental Protection Agency's crosscheck program, comparison of EPA and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>b</sup>		
				Teledyne Results $\pm 2$ Sigma <sup>c</sup>	EPA Result <sup>d</sup> 1s, N=1	Control Limits

<sup>a</sup> Results obtained by Teledyne Brown Engineering Environmental Services Midwest Laboratory as a participant in the environmental sample crosscheck program operated by the Intercomparison and Calibration Section, Quality Assurance Branch, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency (EPA), Las Vegas, Nevada.

<sup>b</sup> All results are in pCi/L, except for elemental potassium (K) data in milk, which are in mg/L; air filter samples, which are in pCi/Filter.

<sup>c</sup> Unless otherwise indicated, the TBESML results are given as the mean  $\pm 2$  standard deviations for three determinations.

<sup>d</sup> USEPA results are presented as the known values and expected laboratory precision (1s, 1 determination) and control limits as defined by the EPA.



12-31-96

ATTACHMENT A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES\*

Analysis	Level	One Standard Deviation for single determinations
Gamma Emitters	5 to 100 pCi/liter or kg >100 pCi/liter or kg	5.0 pCi/liter 5% of known value
Strontium-89 <sup>b</sup>	5 to 50 pCi/liter or kg >50 pCi/liter or kg	5.0 pCi/liter 10% of known value
Strontium-90 <sup>b</sup>	2 to 30 pCi/liter or kg >30 pCi/liter or kg	5.0 pCi/liter 10% of known value
Potassium	>0.1 g/liter or kg	5% of known value
Gross alpha	≤20 pCi/liter >20 pCi/liter	5.0 pCi/liter 25% of known value
Gross beta	≤100 pCi/liter >100 pCi/liter	5.0 pCi/liter 5% of known value
Tritium	≤4,000 pCi/liter >4,000 pCi/liter	1s = (pCi/liter) = 169.85 x (known) <sup>0.0933</sup> 10% of known value
Radium-226,-228	<0.1 pCi/liter	15% of known value
Plutonium	0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129 <sup>b</sup>	≤55 pCi/liter >55 pCi/liter	6.0 pCi/liter 10% of known value
Uranium-238, Nickel-64 <sup>b</sup> Technetium-99 <sup>b</sup>	≤35 pCi/liter >35 pCi/liter	6.0 pCi/liter 15% of known value
Iron-55 <sup>b</sup>	50 to 100 pCi/liter >100 pCi/liter	10 pCi/liter 10% of known value
Others <sup>b</sup>	-	20% of known value

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

<sup>b</sup> Teledyne limit.

Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)
<u>2nd International Intercomparison</u>						
115-2	CaF <sub>2</sub> : Mn Bulb	Apr, 1976	Field	17.0 ± 1.9	17.1	16.4 ± 7.7
115-2	CaF <sub>2</sub> : Mn Bulb	Apr, 1976	Lab	20.8 ± 4.1	21.3	18.8 ± 7.6
Second International Intercomparison of Environmental Dosimeters conducted in April of 1976 by the Health and Safety Laboratory (HASL), New York, New York, and the School of Public Health of the University of Texas, Houston, Texas.						
<u>3rd International Intercomparison</u>						
115-3	CaF <sub>2</sub> : Mn Bulb	Jun, 1977	Field	30.7 ± 3.2	34.9 ± 4.8	31.5 ± 3.0
115-3	CaF <sub>2</sub> : Mn Bulb	Jun, 1977	Lab	89.6 ± 6.4	91.7 ± 14.6	86.2 ± 24.0
Third International Intercomparison of Environmental Dosimeters conducted in the summer of 1977 by Oak Ridge National Laboratory and the School of Public Health of the University of Texas, Houston, Texas.						
<u>4th International Intercomparison</u>						
115-4	CaF <sub>2</sub> : Mn Bulb	Jun, 1979	Field	14.1 ± 1.1	14.1 ± 1.4	16.0 ± 9.0
115-4	CaF <sub>2</sub> : Mn Bulb	Jun, 1979	Lab, High	40.4 ± 1.4	45.8 ± 9.2	43.9 ± 13.2
115-4	CaF <sub>2</sub> : Mn Bulb	Jun, 1979	Lab, Low	9.8 ± 1.3	12.2 ± 2.4	12.0 ± 7.4
Fourth International Intercomparison of Environmental Dosimeters conducted in the summer of 1979 by the School of Public Health of the University of Texas, Houston, Texas.						
<u>5th International Intercomparison</u>						
115-5A	CaF <sub>2</sub> : Mn Bulb	Oct, 1980	Field	31.4 ± 1.8	30.0 ± 6.0	30.2 ± 14.6
115-5A	CaF <sub>2</sub> : Mn Bulb	Oct, 1980	Lab, End	96.6 ± 5.8	88.4 ± 8.8	90.7 ± 31.2
115-5A	CaF <sub>2</sub> : Mn Bulb	Oct, 1980	Lab, Start	77.4 ± 5.8	75.2 ± 7.6	75.8 ± 40.4
Fifth International Intercomparison of Environmental Dosimeters conducted in the fall of 1980 at Idaho Falls, Idaho and sponsored by the School of Public Health of the University of Texas, Houston, Texas and the Environmental Measurements Laboratory, New York, New York, U.S. Department of Energy.						
<u>5th International Intercomparison</u>						
115-5B	LiF-100 Chips	Oct, 1980	Field	30.3 ± 4.8	30.0 ± 6.0	30.2 ± 14.6
115-5B	LiF-100 Chips	Oct, 1980	Lab, End	85.4 ± 11.7	88.4 ± 8.8	90.7 ± 31.2
115-5B	LiF-100 Chips	Oct, 1980	Lab, Start	81.1 ± 7.4	75.2 ± 7.6	75.8 ± 40.4
Fifth International Intercomparison of Environmental Dosimeters conducted in the fall of 1980 at Idaho Falls, Idaho and sponsored by the School of Public Health of the University of Texas, Houston, Texas and the Environmental Measurements Laboratory, New York, New York, U.S. Department of Energy.						
<u>6th International Intercomparison</u>						
115-6						
Teledyne did not participate in the Sixth International Intercomparison of Environmental Dosimeters.						
<u>7th International Intercomparison</u>						
115-7A	LiF-100 Chips	Jun, 1984	Field	75.4 ± 2.6	75.8 ± 6.0	75.1 ± 29.8
115-7A	LiF-100 Chips	Jun, 1984	Lab, Co-60	80.0 ± 3.5	79.9 ± 4.0	77.9 ± 27.6
115-7A	LiF-100 Chips	Jun, 1984	Lab, Cs-137	66.6 ± 2.5	75.0 ± 3.8	73.0 ± 22.2

Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)
Seventh International Intercomparison of Environmental Dosimeters conducted in the spring and summer of 1984 at Las Vegas, Nevada, and sponsored by the U.S. Department of Energy, The Nuclear Regulatory Commission, and the U.S. Environmental Protection Agency.						
<u>7th International Intercomparison</u>						
115-7B	LiF-100 Chips	Jun, 1984	Field	71.5 ± 2.6	75.8 ± 6.0	75.1 ± 29.8
115-7B	LiF-100 Chips	Jun, 1984	Lab, Co-60	84.8 ± 6.4	79.9 ± 4.0	77.9 ± 27.6
115-7B	LiF-100 Chips	Jun, 1984	Lab, Cs-137	78.8 ± 1.6	75.0 ± 3.8	73.0 ± 22.2
Seventh International Intercomparison of Environmental Dosimeters conducted in the spring and summer of 1984 at Las Vegas, Nevada, and sponsored by the U.S. Department of Energy, The Nuclear Regulatory Commission, and the U.S. Environmental Protection Agency.						
<u>7th International Intercomparison</u>						
115-7C	CaSO <sub>4</sub> : Dy Cards	Jun, 1984	Field	76.8 ± 2.7	75.8 ± 6.0	75.1 ± 29.8
115-7C	CaSO <sub>4</sub> : Dy Cards	Jun, 1984	Lab, Co-60	82.5 ± 3.7	79.9 ± 4.0	77.9 ± 27.6
115-7C	CaSO <sub>4</sub> : Dy Cards	Jun, 1984	Lab, Cs-137	79.0 ± 3.2	75.0 ± 3.8	73.0 ± 22.2
Seventh International Intercomparison of Environmental Dosimeters conducted in the spring and summer of 1984 at Las Vegas, Nevada, and sponsored by the U.S. Department of Energy, The Nuclear Regulatory Commission, and the U.S. Environmental Protection Agency.						
<u>8th International Intercomparison</u>						
115-8A	LiF-100 Chips	Jan, 1986	Field, Site 1	29.5 ± 1.4	29.7 ± 1.5	28.9 ± 12.4
115-8A	LiF-100 Chips	Jan, 1986	Field, Site 2	11.3 ± 0.8	10.4 ± 0.5	10.1 ± 9.1
115-8A	LiF-100 Chips	Jan, 1986	Lab, Cs-137	13.7 ± 0.9	17.2 ± 0.9	16.2 ± 6.8
Eighth International Intercomparison of Environmental Dosimeters conducted in the fall and winter of 1985-1986 at New York, New York, and sponsored by the U.S. Department of Energy.						
<u>8th International Intercomparison</u>						
115-8B	LiF-100 Chips	Jan, 1986	Field, Site 1	32.3 ± 1.2	29.7 ± 1.5	28.9 ± 12.4
115-8B	LiF-100 Chips	Jan, 1986	Field, Site 2	9.0 ± 1.0	10.4 ± 0.5	10.1 ± 9.0
115-8B	LiF-100 Chips	Jan, 1986	Lab, Cs-137	15.8 ± 0.9	17.2 ± 0.9	16.2 ± 6.8
Eighth International Intercomparison of Environmental Dosimeters conducted in the fall and winter of 1985-1986 at New York, New York, and sponsored by the U.S. Department of Energy.						
<u>8th International Intercomparison</u>						
115-8C	CaSO <sub>4</sub> : Dy Cards	Jan, 1986	Field, Site 1	32.2 ± 0.7	29.7 ± 1.5	28.9 ± 12.4
115-8C	CaSO <sub>4</sub> : Dy Cards	Jan, 1986	Field, Site 2	10.6 ± 0.6	10.4 ± 0.5	10.1 ± 9.0
115-8C	CaSO <sub>4</sub> : Dy Cards	Jan, 1986	Lab, Cs-137	18.1 ± 0.8	17.2 ± 0.9	16.2 ± 6.8

Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Table A-2. Crosscheck program results.

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)
Eighth International Intercomparison of Environmental Dosimeters conducted in the fall and winter of 1985-1986 at New York, New York, and sponsored by the U.S. Department of Energy.						
<u>9th International Intercomparison</u>						
115-9						
The Ninth International Intercomparison of Environmental Dosimeters was not available to Teledyne's Midwest Laboratory.						
<u>10th International Intercomparison</u>						
115-10A	LiF-100 Chips	Aug, 1993	Field	25.7 ± 1.4	27.0 ± 1.6	26.4 ± 10.2
115-10A	LiF-100 Chips	Aug, 1993	Lab, 1	22.7 ± 1.6	25.9 ± 1.3	25.0 ± 9.4
115-10A	LiF-100 Chips	Aug, 1993	Lab, 2	62.7 ± 2.6	72.7 ± 1.9	69.8 ± 20.3
The Tenth International Intercomparison of Environmental Dosimeters conducted in 1993 at Idaho State University and sponsored by the U.S. Department of Energy and the Idaho State University.						
<u>10th International Intercomparison</u>						
115-10B	CaSO <sub>4</sub> : Dy Cards	Aug, 1993	Field	26.0 ± 2.3	27.0 ± 1.6	26.4 ± 10.2
115-10B	CaSO <sub>4</sub> : Dy Cards	Aug, 1993	Lab, 1	24.1 ± 1.7	25.9 ± 1.3	25.0 ± 9.4
115-10B	CaSO <sub>4</sub> : Dy Cards	Aug, 1993	Lab, 2	69.2 ± 3.0	72.7 ± 1.9	69.8 ± 20.3
The Tenth International Intercomparison of Environmental Dosimeters conducted in 1993 at Idaho Stat University and sponsored by the U.S. Department of Energy and the Idaho Stat University.						
<u>Teledyne Testing</u>						
89-1	LiF-100 Chips	Sep, 1989	Lab	21.0 ± 0.4	22.4	ND
ND = No Data; Teledyne Testing was only performed by Teledyne.						
Chips were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in September, 1989.						
<u>Teledyne Testing</u>						
89-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1989	Lab	20.9 ± 1.0	20.3	ND
ND = No Data; Teledyne Testing was only performed by Teledyne.						
Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in June, 1990.						
<u>Teledyne Testing</u>						
90-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Jun, 1990	Lab	20.6 ± 1.4	19.6	ND
ND = No Data; Teledyne Testing was only performed by Teledyne.						
Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in June, 1990.						

Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)
<u>Teledyne Testing</u>						
90-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Jun, 1990	Lab	100.8 ± 4.3	100.0	ND
ND = No Data; Teledyne Testing was only performed by Teledyne. Cards were irradiated by Dosimetry Associates, Inc., Northville, MI, in October, 1990.						
<u>Teledyne Testing</u>						
91-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Oct, 1990	Lab, 1	33.4 ± 2.0	32.0	ND
91-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Oct, 1990	Lab, 2	55.2 ± 4.7	58.8	ND
91-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Oct, 1990	Lab, 3	87.8 ± 6.2	85.5	ND
ND = No Data; Teledyne Testing was only performed by Teledyne. Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in October, 1991.						
<u>Teledyne Testing</u>						
92-1	LiF-100 Chips	Feb, 1992	Lab, 1	11.1 ± 0.2	10.7	ND
92-1	LiF-100 Chips	Feb, 1992	Lab, 2	25.6 ± 0.5	25.4	ND
92-1	LiF-100 Chips	Feb, 1992	Lab, 3	46.4 ± 0.5	46.3	ND
ND = No Data; Teledyne Testing was only performed by Teledyne. Chips were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in February, 1992.						
<u>Teledyne Testing</u>						
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 1, #1	20.1 ± 0.1	20.1	ND
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 1, #2	40.6 ± 0.1	40.0	ND
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 1, #3	60.0 ± 1.3	60.3	ND
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 2, #1	20.3 ± 0.3	20.1	ND
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 2, #2	39.2 ± 0.3	40.0	ND

Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results $\pm 2$ Sigma	Known Value $\pm 2$ Sigma	Average $\pm 2$ Sigma (All Participants)
92-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Apr, 1992	Reader 2, #3	60.7 $\pm$ 0.4	60.3	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in April, 1992.

#### Teledyne Testing

93-1	Teledyne LiF-100 Chips	Mar, 1993	Lab, 1	10.0 $\pm$ 1.0	10.2	ND
93-1	Teledyne LiF-100 Chips	Mar, 1993	Lab, 2	25.2 $\pm$ 2.2	25.5	ND
93-1	Teledyne LiF-100 Chips	Mar, 1993	Lab, 3	42.7 $\pm$ 5.7	45.9	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Chips were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in March, 1993. Due to a potential error of 10-12% when cards were irradiated, results of the testing on the cards will not be published. Data is available upon request.

#### Teledyne Testing

94-1	Teledyne LiF-100 Chips	Nov, 1994	Lab, 1	15.6 $\pm$ 0.4	14.9	ND
94-1	Teledyne LiF-100 Chips	Nov, 1994	Lab, 2	30.2 $\pm$ 0.4	29.8	ND
94-1	Teledyne LiF-100 Chips	Nov, 1994	Lab, 3	59.2 $\pm$ 0.3	59.7	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 1, #1	14.9 $\pm$ 0.1	14.9	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 1, #2	30.8 $\pm$ 0.1	29.8	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 1, #3	58.9 $\pm$ 0.3	59.7	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 2, #1	15.4 $\pm$ 0.2	14.9	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 2, #2	31.4 $\pm$ 0.2	29.8	ND
94-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Nov, 1994	Reader 2, #3	60.1 $\pm$ 0.3	59.7	ND



Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)

ND = No Data; Teledyne Testing was only performed by Teledyne.

Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in November, 1994.

#### Teledyne Testing

95-1	LiF-100 Chips	Mar, 1995	Lab, 1	16.1 ± 0.2	15.7	
95-1	LiF-100 Chips	Mar, 1995	Lab, 2	31.7 ± 0.1	32.3	
95-1	LiF-100 Chips	Mar, 1995	Lab, 3	59.7 ± 0.6	60.8	
95-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 1, #1	16.4 ± 0.1	15.7	ND
95-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 1, #2	34.9 ± 0.1	32.3	ND
95-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 1, #3	64.4 ± 1.5	60.8	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Cards and Chips were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in March, 1995.

#### Teledyne Testing

95-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 2, #1	16.4 ± 0.2	15.7	ND
95-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 2, #2	33.9 ± .4	32.3	ND
95-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1995	Reader 2, #3	60.5 ± 0.3	60.8	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Cards and Chips were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in March, 1995.

#### Teledyne Testing

96-1	LiF-100 Chips	Mar, 1996	Lab, 1	15.9 ± 0.3	15.4	
96-1	LiF-100 Chips	Mar, 1996	Lab, 2	29.4 ± 0.3	30.8	
96-1	LiF-100 Chips	Mar, 1996	Lab, 3	62.5 ± 1.3	62.5	
96-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 1, #1	14.4 ± 0.1	15.4	ND
96-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 1, #2	31.8 ± 0.1	30.8	ND



Table A-2. Crosscheck program results; Thermoluminescent Dosimeters. (TLDs).

Lab Code	TLD Type	Date	Measurement	mR		
				Teledyne Results ± 2 Sigma	Known Value ± 2 Sigma	Average ± 2 Sigma (All Participants)
96-1	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 1, #3	64.7 ± 0.4	62.5	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Chips and Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in March, 1996.

Teledyne Testing

96-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 2, #1	14.3 ± 0.4	15.4	ND
96-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 2, #2	31.8 ± 0.1	30.8	ND
96-2	Teledyne CaSO <sub>4</sub> : Dy Cards	Mar, 1996	Reader 2, #3	68.6 ± 0.1	62.5	ND

ND = No Data; Teledyne Testing was only performed by Teledyne.

Chips and Cards were irradiated by Teledyne Isotopes, Inc., Westwood, New Jersey, in March, 1996.

Table A-3. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>a</sup>		
				Teledyne Results 2s, n=1 <sup>b</sup>	Known Activity	Control <sup>c</sup> Limits
SPCH-607	CHARCOAL CANISTER	Feb, 1996	I-131(g)	0.3 ± 0.0	0.3	0.2 - 0.4
SPAP-609	AIR FILTER	Feb, 1996	Cs-137	2.2 ± 0.0	1.9	1.1 - 2.7
SPAP-611	AIR FILTER	Feb, 1996	Gr. Beta	6.8 ± 0.0	8.0	0.0 - 18.0
SPW-621	WATER	Feb, 1996	I-131	86.2 ± 0.7	95.9	76.7 - 115.1
SPW-621	WATER	Feb, 1996	I-131(g)	96.2 ± 4.7	95.9	57.5 - 105.9
SPW-622	WATER	Feb, 1996	Gr. Alpha	96.4 ± 6.6	82.8	41.4 - 124.2
SPW-622	WATER	Feb, 1996	Gr. Beta	83.7 ± 3.3	85.7	75.7 - 95.7
SPW-623	WATER	Feb, 1996	H-3	18228.7 ± 391.3	17833.0	14266.4 - 21399.6
SPW-624	WATER	Feb, 1996	Co-60	231.0 ± 14.5	239.3	215.4 - 263.2
SPW-624	WATER	Feb, 1996	Cs-137	428.3 ± 24.1	428.3	385.5 - 471.1
SPMI-625	MILK	Feb, 1996	Cs-137	63.1 ± 3.2	53.5	43.5 - 63.5
SPMI-625	MILK	Feb, 1996	I-131	47.8 ± 0.7	48.0	36.0 - 60.0
SPMI-625	MILK	Feb, 1996	I-131(g)	48.0 ± 2.9	48.0	28.8 - 58.0
SPVE-1068	VEGETATION	Feb, 1996	I-131(g)	0.8 ± 0.0	0.8	0.5 - 1.1
SPMI-2217	MILK	Apr, 1996	Cs-134	35.4 ± 2.5	37.1	27.1 - 47.1
SPMI-2217	MILK	Apr, 1996	Cs-137	117.2 ± 5.4	106.6	95.9 - 117.3
SPW-2219	WATER	Apr, 1996	Co-60	26.0 ± 3.4	23.4	13.4 - 33.4
SPW-2219	WATER	Apr, 1996	Cs-134	36.1 ± 2.9	37.1	27.1 - 47.1
SPW-2219	WATER	Apr, 1996	Cs-137	117.1 ± 6.4	106.6	95.9 - 117.3
SPW-2221	WATER	Apr, 1996	Gr. Alpha	76.9 ± 6.1	82.8	41.4 - 124.2
SPW-2221	WATER	Apr, 1996	Gr. Beta	132.3 ± 5.0	136.8	123.1 - 150.5
SPW-2223	WATER	Apr, 1996	H-3	17538.9 ± 354.1	17937.0	14349.6 - 21524.4
SPW-2283	WATER	Apr, 1996	I-129	15.7 ± 1.4	14.9	2.9 - 26.9
SPW-2285	WATER	Apr, 1996	Fe-55	1.2 ± 0.5	1.1	0.0 - 21.1
SPW-2287	WATER	Apr, 1996	Tc-99	70.5 ± 7.9	66.0	46.2 - 85.8
SPW-2289	WATER	Apr, 1996	Am-241	77.4 ± 0.4	82.8	49.7 - 115.9
SPW-2289	WATER	Apr, 1996	Cm-244	37.9 ± 1.7	36.4	21.8 - 51.0
SPW-2291	WATER	Apr, 1996	Th-230	41.6 ± 1.9	45.0	27.0 - 63.0
SPW-2292	WATER	Apr, 1996	U-238	46.2 ± 2.0	45.4	31.8 - 59.0
SPF-3420	FISH	May, 1996	Cs-137	0.1 ± 0.0	0.1	0.1 - 0.1
SPW-3439	WATER	May, 1996	I-131	23.9 ± 0.8	25.3	13.3 - 37.3
SPMI-3441	MILK	May, 1996	I-131	23.5 ± 0.5	25.3	13.3 - 37.3
SPMI - 4054	MILK	Jun, 1996	Cs-134	28.1 ± 2.6	31.3	21.3 - 41.3
SPMI - 4054	MILK	Jun, 1996	Cs-137	47.0 ± 3.7	42.5	32.5 - 52.5
SPMI - 4054	MILK	Jun, 1996	I-131(g)	39.4 ± 3.6	40.4	24.2 - 50.4

Table A-3. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>a</sup>		
				Teledyne Results 2s, n=1 <sup>b</sup>	Known Activity	Control <sup>c</sup> Limits
SPMI-4054	MILK	Jun, 1996	Cs-134	28.1 ± 2.6	31.3	21.3 - 41.3
SPMI-4054	MILK	Jun, 1996	Cs-137	47.0 ± 3.7	42.5	32.5 - 52.5
SPMI-4054	MILK	Jun, 1996	I-131	35.7 ± 0.6	40.3	28.3 - 52.3
SPMI-4054	MILK	Jun, 1996	I-131(g)	39.4 ± 3.6	40.4	24.2 - 50.4
SPW-4246	WATER	Jun, 1996	Gr. Alpha	70.0 ± 3.6	82.7	41.4 - 124.1
SPW-4246	WATER	Jun, 1996	Gr. Beta	140.5 ± 3.2	136.1	122.5 - 149.7
SPAP-4750	AIR FILTER	Jul, 1996	Cs-137	2.2 ± 0.0	1.9	1.1 - 2.7
SPW-4936	WATER	Jul, 1996	Co-60	105.7 ± 15.4	112.6	101.3 - 123.9
SPW-4936	WATER	Jul, 1996	Cs-134	127.1 ± 10.9	135.2	121.7 - 148.7
SPW-4936	WATER	Jul, 1996	Cs-137	220.2 ± 20.2	211.9	190.7 - 233.1
SPMI-4938	MILK	Jul, 1996	Cs-134	130.4 ± 11.4	135.2	121.7 - 148.7
SPMI-4938	MILK	Jul, 1996	Cs-137	229.2 ± 21.6	211.9	190.7 - 233.1
SPW-4942	WATER	Jul, 1996	Fe-55	2.0 ± 0.5	1.8	0.0 - 21.8
SPF-4996	FISH	Jul, 1996	Cs-137	0.1 ± 0.0	0.1	0.0 - 0.1
SPAP-5669	AIR FILTER	Jul, 1996	Gr. Beta	7.0 ± 0.0	7.8	0.0 - 17.8
SPW-5700	WATER	Aug, 1996	H-3	49589.0 ± 589.5	51058.0	40846.4 - 61269.6
SPMI-7384	MILK	Oct, 1996	I-131	35.0 ± 0.9	39.9	27.9 - 51.9
SPMI-7385	MILK	Oct, 1996	Cs-134	19.5 ± 2.4	21.4	11.4 - 31.4
SPMI-7385	MILK	Oct, 1996	Cs-137	26.0 ± 3.9	24.1	14.1 - 34.1
SPMI-7385	MILK	Oct, 1996	I-131(g)	117.3 ± 6.4	114.1	68.5 - 125.5
SPMI-7444	MILK	Oct, 1996	I-131	64.5 ± 14.4	79.9	63.9 - 95.8
SPW-7444	WATER	Oct, 1996	I-131(g)	82.2 ± 16.2	79.9	47.9 - 89.9
SPMI-7445	MILK	Oct, 1996	I-131	235.5 ± 2.8	199.7	159.8 - 239.6
SPW-7445	WATER	Oct, 1996	I-131(g)	190.9 ± 14.1	199.7	119.8 - 219.7
SPMI-7685	MILK	Oct, 1996	I-131	103.6 ± 1.5	114.1	91.3 - 136.9
SPAP-2	AIR FILTER	Oct, 1996	Gr. Beta	6.0 ± 0.0	6.0	0.0 - 16.0
SPSO-2478	SOIL	Oct, 1996	Cs-134	0.2 ± 0.0	0.2	0.1 - 0.2
SPSO-2478	SOIL	Oct, 1996	Cs-137	0.5 ± 0.0	0.4	0.3 - 0.6
SPCH-7473	CHARCOAL CANISTER	Oct, 1996	I-131(g)	0.4 ± 0.0	0.4	0.2 - 0.5
SPCH-7474	CHARCOAL CANISTER	Oct, 1996	I-131(g)	0.5 ± 0.0	0.5	0.3 - 0.7
SPAP-7476	AIR FILTER	Oct, 1996	Cs-137	2.1 ± 0.0	1.9	1.1 - 2.7
SPW-8734	WATER	Nov, 1996	Co-60	42.4 ± 7.2	43.0	33.0 - 53.0
SPW-8734	WATER	Nov, 1996	Cs-134	29.0 ± 6.6	30.1	20.1 - 40.1
SPW-8734	WATER	Nov, 1996	Cs-137	35.1 ± 9.5	31.5	21.5 - 41.5
SPW-8740	WATER	Nov, 1996	H-3	25383.5 ± 433.5	25075.0	20060.0 - 30090.0

Table A-3. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>a</sup>		
				Teledyne Results 2s, n=1 <sup>b</sup>	Known Activity	Control <sup>c</sup> Limits

<sup>a</sup> All results are in pCi/L, except for elemental potassium (K) in milk, which are in mg/L.; air filter samples, which are in pCi/Filter; and food products, which are in mg/kg.

<sup>b</sup> All samples are the results of single determinations.

<sup>c</sup> Control limits are based on Attachment A, page A2 of this report.

NOTE: For fish, Jello is used for the spike matrix. For vegetation, Sawdust is used for the spike matrix.

Table A-4. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		
				Teledyne Results (4.66 Sigma)		Acceptance Criteria (4.66 Sigma)
				LLD	Activity <sup>b</sup>	
SPW-7	WATER	Jan 1996	Ra-226	<0.02	0.02 ± 0.13	<1.0
SPW-2	WATER	Feb 1996	Ra-226	<0.02	0.01 ± 0.02	<1.0
SPCH-608	CHARCOAL CANISTER	Feb 1996	I-131(g)	<2.7	-0.10 ± 1.63	<9.6
SPAP-510	AIR FILTER	Feb 1996	Co-60	<4.1	3.46 ± 3.39	<10.0
SPAP-610	AIR FILTER	Feb 1996	Cs-134	<3.6	-0.25 ± 2.94	<10.0
SPAP-610	AIR FILTER	Feb 1996	Cs-137	<2.4	-0.31 ± 2.53	<10.0
SPAP-612	AIR FILTER	Feb 1996	Gr. Beta	<0.4	0.32 ± 0.29	<3.2
SPW-627	WATER	Feb 1996	Co-60	<3.0	1.70 ± 1.60	<10.0
SPW-627	WATER	Feb 1996	Cs-134	<2.5	-0.36 ± 1.66	<10.0
SPW-627	WATER	Feb 1996	Cs-137	<3.2	0.33 ± 1.60	<10.0
SPW-627	WATER	Feb 1996	Gr. Alpha	<1.0	0.20 ± 0.93	<1.0
SPW-627	WATER	Feb 1996	Gr. Beta	<3.2	2.26 ± 1.76	<3.2
SPW-627	WATER	Feb 1996	I-131	<0.4	-0.21 ± 0.32	<0.5
SPW-628	WATER	Feb 1996	Co-60	<2.6	-1.38 ± 2.18	<10.0
SPW-628	WATER	Feb 1996	Cs-134	<3.1	0.95 ± 2.11	<10.0
SPW-628	WATER	Feb 1996	Cs-137	<3.8	0.55 ± 2.31	<10.0
SPW-628	WATER	Feb 1996	I-131	<0.5	-0.18 ± 0.35	<0.5
SPW-629	WATER	Feb 1996	H-3	<197	-12.47 ± 97.17	<200.0
SPMI-630	MILK	Feb 1996	Co-60	<3.5	1.26 ± 1.79	<10.0
SPMI-630	MILK	Feb 1996	Cs-134	<2.5	-0.12 ± 1.53	<10.0
SPMI-630	MILK	Feb 1996	Cs-137	<2.6	0.22 ± 1.44	<10.0
SPMI-630	MILK	Feb 1996	I-131	<0.3	-0.07 ± 0.24	<0.5
SPMI-630	MILK	Feb 1996	Sr-89	<0.9	-0.20 ± 1.27	<5.0
SPMI-630	MILK	Feb 1996	Sr-90	N/A	1.48 ± 0.40	<1.0
Low level of Sr-90 concentration in milk (1-5 pCi/L) is not unusual.						
SPVE-1069	VEGETATION	Feb 1996	I-131(g)	<0.012	0.00 ± 0.01	<20.0
SPW-3	WATER	Mar 1996	Ra-226	<0.08	-0.00 ± 0.04	<1.0
SPW-3	WATER	Mar 1996	Ra-228	<0.9	0.47 ± 0.75	<1.0
SPW-4	WATER	Apr 1996	Ra-226	<0.06	0.09 ± 0.04	<1.0
SPMI-2218	MILK	Apr 1996	Cs-134	<4.8	2.52 ± 2.62	<10.0
SPMI-2218	MILK	Apr 1996	Cs-137	<5.4	4.42 ± 3.00	<10.0
SPW-2220	WATER	Apr 1996	Co-60	<2.9	0.95 ± 1.58	<10.0
SPW-2220	WATER	Apr 1996	Cs-134	<2.7	1.47 ± 1.64	<10.0
SPW-2220	WATER	Apr 1996	Cs-137	<1.9	-1.28 ± 1.72	<10.0
SPW-2222	WATER	Apr 1996	Gr. Alpha	<0.2	-0.21 ± 0.97	<1.0

Table A-4. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		
				Teledyne Results (4.66 Sigma)		Acceptance Criteria (4.66 Sigma)
				LLD	Activity <sup>b</sup>	
SPW-2222	WATER	Apr 1996	Gr. Beta	<2.8	2.26 ± 1.57	<3.2
SPW-2224	WATER	Apr 1996	H-3	<151	-101.30 ± 70.18	<200.0
SPW-2284	WATER	Apr 1996	I-129	<1.4	0.22 ± 0.84	<1.5
SPW-2286	WATER	Apr 1996	Fe-55	<0.7	-0.07 ± 0.43	<1000.0
SPW-2288	WATER	Apr 1996	Tc-99	<4.2	0.55 ± 2.29	<10.0
SPF-3421	FISH	May 1996	Co-60	<0.010	0.00 ± 0.01	<10.0
SPF-3421	FISH	May 1996	Cs-134	<0.014	-0.00 ± 0.01	<10.0
SPF-3421	FISH	May 1996	Cs-137	<0.015	0.01 ± 0.01	<10.0
SPW-3440	WATER	May 1996	I-131	<0.1	0.04 ± 0.20	<0.5
SPMI-3442	MILK	May 1996	I-131	<0.1	-0.07 ± 0.20	<0.5
SPW-6	WATER	Jun 1996	Ra-228	<1.0	0.73 ± 1.05	<1.0
SPMI-4055	MILK	Jun 1996	Co-60	<8.7	2.51 ± 4.51	<10.0
SPMI-4055	MILK	Jun 1996	Cs-134	<6.1	1.87 ± 3.37	<10.0
SPMI-4055	MILK	Jun 1996	Cs-137	<5.3	1.82 ± 11.80	<10.0
SPMI-4055	MILK	Jun 1996	I-131	<0.3	0.21 ± 0.24	<0.5
SPMI-4055	MILK	Jun 1996	Sr-89	<0.8	0.57 ± 1.83	<5.0
SPMI-4055	MILK	Jun 1996	Sr-90	N/A	1.49 ± 0.44	<1.0
Low level of Sr-90 concentration in milk (1-5 pCi/L) is not unusual.						
SPW-7	WATER	Jul 1996	Ra-228	<0.8	-0.05 ± 0.70	<1.0
SPAP-4751	AIR FILTER	Jul 1996	Co-60	<2.7	1.26 ± 1.44	<10.0
SPAP-4751	AIR FILTER	Jul 1996	Cs-134	<4.8	1.50 ± 1.80	<10.0
SPAP-4751	AIR FILTER	Jul 1996	Cs-137	<2.4	0.63 ± 1.49	<10.0
SPW-4937	WATER	Jul 1996	Co-60	<4.5	-0.25 ± 3.27	<10.0
SPW-4937	WATER	Jul 1996	Cs-134	<5.5	0.34 ± 3.39	<10.0
SPW-4937	WATER	Jul 1996	Cs-137	<5.7	-0.35 ± 3.43	<10.0
SPMI-4939	MILK	Jul 1996	Co-60	<8.0	1.13 ± 4.73	<10.0
SPMI-4939	MILK	Jul 1996	Cs-134	<7.2	1.80 ± 5.18	<10.0
SPMI-4939	MILK	Jul 1996	Cs-137	<5.8	1.04 ± 3.77	<10.0
SPW-4943	WATER	Jul 1996	Fe-55	<0.6	0.18 ± 0.35	<1000.0
SPF-4997	FISH	Jul 1996	Co-60	<0.006	0.00 ± 0.00	<10.0
SPF-4997	FISH	Jul 1996	Cs-134	<0.006	-0.00 ± 0.01	<10.0
SPF-4997	FISH	Jul 1996	Cs-137	<0.009	0.01 ± 0.01	<10.0
SPAP-5670	AIR FILTER	Jul 1996	Gr. Beta	<0.4	0.80 ± 0.32	<3.2
SPW-8	WATER	Aug 1996	Ra-226	<0.04	0.16 ± 0.03	<1.0
SPW-8	WATER	Aug 1996	Ra-228	<1.0	0.44 ± 0.79	<1.0
SPW-9	WATER	Sep 1996	Ra-226	<0.05	0.01 ± 0.03	<1.0

Table A-4. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		
				Teledyne Results (4.66 Sigma)		Acceptance Criteria (4.66 Sigma)
				LLD	Activity <sup>b</sup>	
SPW-7013	WATER	Sep 1996	Sr-89	<1.8	-0.73 ± 1.10	< 5.0
SPW-7013	WATER	Sep 1996	Sr-90	<0.5	-0.05 ± 0.21	< 1.0
SPW-10	WATER	Oct 1996	Ra-228	<1.0	0.80 ± 0.57	< 1.0
SPMI-7382	MILK	Oct 1996	Cs-134	<3.1	-0.25 ± 2.62	< 10.0
SPMI-7382	MILK	Oct 1996	Cs-137	<4.8	0.15 ± 2.68	< 10.0
SPMI-7382	MILK	Oct 1996	I-131(g)	<3.7	-1.61 ± 3.28	< 20.0
SPMI-7383	MILK	Oct 1996	Cs-134	<5.7	0.28 ± 3.68	< 10.0
SPMI-7383	MILK	Oct 1996	Cs-137	<4.1	-1.83 ± 3.63	< 10.0
SPMI-7383	MILK	Oct 1996	I-131	<0.4	0.18 ± 0.23	< 0.5
SPMI-7383	MILK	Oct 1996	I-131(g)	<6.8	1.19 ± 4.08	< 20.0
SPMI-7443	MILK	Oct 1996	I-131	<0.4	-0.08 ± 0.17	< 0.5
SPCH-7475	CHARCOAL CANISTER	Oct 1996	I-131(g)	<2.8	-1.58 ± 12.74	< 9.6
SPAP-7477	AIR FILTER	Oct 1996	Cs-137	<2.2	0.00 ± 0.00	< 10.0
SPSO-7479	SOIL	Oct 1996	Cs-134	<0.011	0.00 ± 0.00	< 10.0
SPSO-7479	SOIL	Oct 1996	Cs-137	<0.007	0.00 ± 0.00	< 10.0
SPAP-7527	AIR FILTER	Oct 1996	Gr. Beta	<0.7	0.10 ± 0.45	< 3.2
SPF-7505	FISH	Oct 1996	Co-60	<0.016	-0.00 ± 0.01	< 10.0
SPF-7505	FISH	Oct 1996	Cs-134	<0.017	-0.01 ± 0.04	< 10.0
SPF-7505	FISH	Oct 1996	Cs-137	<0.016	-0.00 ± 0.01	< 10.0
SPW-8735	WATER	Nov 1996	Co-60	<6.0	-0.14 ± 0.10	< 10.0
SPW-8735	WATER	Nov 1996	Cs-134	<4.7	-0.53 ± 7.69	< 10.0
SPW-8735	WATER	Nov 1996	Cs-137	8.2	2.09 ± 4.63	< 10.0
SPW-8735	WATER	Nov 1996	Gr. Alpha	<0.3	0.15 ± 0.21	< 1.0
SPW-8735	WATER	Nov 1996	Gr. Beta	<0.8	-0.41 ± 0.52	< 3.2
SPW-8739	WATER	Nov 1996	H-3	<158	104.99 ± 82.93	< 200.0

<sup>a</sup> Liquid sample results are reported in pCi/Liter, air filter sample results are in pCi/filter, charcoal sample results are in pCi/charcoal, and solid sample results are in pCi/kilogram.

<sup>b</sup> The activity reported is the net activity result.



Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
CF - 20, 21	Jan, 1996	Gr. Beta	7.1423 ± 0.2477	6.8880 ± 0.1339	7.0152 ± 0.1408
CF - 20, 21	Jan, 1996	K-40	3.6750 ± 0.3680	3.6536 ± 0.1270	3.6643 ± 0.1946
CF - 20, 21	Jan, 1996	Sr-89	-0.0115 ± 0.0138	0.0042 ± 0.0097	-0.0037 ± 0.0085
CF - 20, 21	Jan, 1996	Sr-90	0.0057 ± 0.0034	0.0045 ± 0.0021	0.0051 ± 0.0020
MI - 47, 48	Jan, 1996	Cs-137	-1.6700 ± 4.1200	2.7900 ± 3.3500	0.5600 ± 2.6550
MI - 47, 48	Jan, 1996	I-131	0.0511 ± 0.2159	0.0763 ± 0.2005	0.0637 ± 0.1473
LW - 103, 104	Jan, 1996	Co-60	0.2690 ± 1.6500	1.0900 ± 2.2400	0.6795 ± 1.3911
LW - 103, 104	Jan, 1996	Cs-134	0.4450 ± 1.5400	1.0400 ± 2.3800	0.7425 ± 1.4174
LW - 103, 104	Jan, 1996	Cs-137	0.6930 ± 1.5800	0.2970 ± 2.2200	0.4950 ± 1.3624
LW - 103, 104	Jan, 1996	Gr. Beta	2.2440 ± 0.5110	2.2050 ± 0.5678	2.2245 ± 0.3819
LW - 103, 104	Jan, 1996	I-131	0.0550 ± 0.2332	0.0721 ± 0.2983	0.0635 ± 0.1893
LW - 103, 104	Jan, 1996	I-131(g)	-3.9100 ± 6.2600	1.3800 ± 12.0000	-1.2650 ± 6.7673
LW - 103, 104	Jan, 1996	K-40	78.6450 ± 35.3000	99.3760 ± 48.5000	89.0105 ± 29.9931
CW - 132, 133	Jan, 1996	Gr. Beta	1.7043 ± 1.2727	-0.2699 ± 1.1417	0.7172 ± 0.8549
CW - 132, 133	Jan, 1996	Gr. Beta	5.5009 ± 1.6811	3.8880 ± 1.5639	4.6944 ± 1.1480
MI - 70, 71	Jan, 1996	Co-60	1.2400 ± 4.2600	1.6800 ± 4.0900	1.4600 ± 2.9528
MI - 70, 71	Jan, 1996	Cs-137	0.3210 ± 3.2700	2.3700 ± 3.4200	1.3455 ± 2.3659
MI - 154, 155	Jan, 1996	Co-60	1.5700 ± 2.5500	-0.4590 ± 3.2500	0.5555 ± 2.0655
MI - 154, 155	Jan, 1996	Cs-134	0.1120 ± 2.1800	-2.3100 ± 2.5900	-1.0990 ± 1.6927
MI - 154, 155	Jan, 1996	Cs-137	-0.7350 ± 2.0100	0.6920 ± 2.8500	-0.0215 ± 1.7437
MI - 154, 155	Jan, 1996	I-131	0.0429 ± 0.2521	0.0326 ± 0.2410	0.0377 ± 0.1744
MI - 154, 155	Jan, 1996	I-131(g)	1.2400 ± 3.4000	0.0793 ± 3.8500	0.6597 ± 2.5682
MI - 154, 155	Jan, 1996	K-40	1,521.1000 ± 89.3000	1,628.4000 ± 122.0000	1,574.7500 ± 75.5951
MI - 154, 155	Jan, 1996	Sr-89	-0.5282 ± 0.8162	-0.6568 ± 0.8029	-0.5925 ± 0.5724
MI - 154, 155	Jan, 1996	Sr-90	0.8201 ± 0.3348	0.9595 ± 0.3294	0.8898 ± 0.2348
WW - 180, 181	Jan, 1996	I-131	0.0000 ± 0.1940	-0.0631 ± 0.2130	-0.0315 ± 0.1440
MI - 298, 299	Jan, 1996	I-131	0.1096 ± 0.2108	0.2322 ± 0.2760	0.1709 ± 0.1737
MI - 298, 299	Jan, 1996	K-40	1,579.0000 ± 177.0000	1,551.7000 ± 168.0000	1,565.3500 ± 122.0174
CW - 355, 356	Jan, 1996	Gr. Beta	0.0868 ± 0.9590	-0.3493 ± 0.9041	-0.1312 ± 0.6590
CW - 355, 356	Jan, 1996	Gr. Beta	2.3816 ± 1.2727	2.0620 ± 1.2550	2.2218 ± 0.8937
SW - 436, 437	Jan, 1996	Co-60	0.1360 ± 1.0900	0.6880 ± 1.8700	0.4120 ± 1.0822
SW - 436, 437	Jan, 1996	Cs-137	0.0782 ± 1.2000	1.6100 ± 1.8700	0.8441 ± 1.1110
WW - 500, 501	Jan, 1996	H-3	21,035.5732 ± 418.5372	20,597.1409 ± 414.3977	20,816.3571 ± 294.4906
SWT - 554, 555	Jan, 1996	Gr. Beta	2.8534 ± 0.5402	3.1179 ± 0.5254	2.9857 ± 0.3768
SW - 841, 842	Jan, 1996	K-40	65.0260 ± 28.3000	118.9000 ± 57.7000	91.9630 ± 32.1332
SW - 479, 480	Feb, 1996	Gr. Beta	6.7187 ± 1.0111	7.8142 ± 1.3095	7.2665 ± 0.8272
MI - 521, 522	Feb, 1996	Co-60	-1.0500 ± 2.9400	0.0602 ± 5.0000	-0.4949 ± 2.9002

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
MI - 521, 522	Feb, 1996	Cs-137	-0.7930 ± 2.8100	-0.3920 ± 3.4400	-0.5925 ± 2.2209
MI - 521, 522	Feb, 1996	I-131	0.1131 ± 0.3229	0.2232 ± 0.2998	0.1682 ± 0.2203
MI - 580, 581	Feb, 1996	Co-60	-0.7660 ± 2.7300	1.7200 ± 1.4800	0.4770 ± 1.5527
MI - 580, 581	Feb, 1996	Cs-137	0.5780 ± 2.2900	0.4440 ± 1.2600	0.5110 ± 1.3069
LW - 709, 710	Feb, 1996	Gr. Alpha	0.0692 ± 0.3694	0.4866 ± 0.3667	0.2779 ± 0.2603
LW - 709, 710	Feb, 1996	Gr. Beta	1.6911 ± 0.4163	1.9519 ± 0.4187	1.8215 ± 0.2952
LW - 709, 710	Feb, 1996	H-3	37.4444 ± 74.3195	84.3897 ± 76.4083	60.9171 ± 53.2954
MI - 603, 604	Feb, 1996	I-131	-0.8566 ± 0.4141	-0.2433 ± 0.2580	-0.5499 ± 0.2440
MI - 603, 604	Feb, 1996	K-40	1,382.9000 ± 115.0000	1,335.3000 ± 175.0000	1,359.1000 ± 104.7020
WW - 648, 649	Feb, 1996	I-131	-0.0626 ± 0.2685	-0.0926 ± 0.2831	-0.0776 ± 0.1951
MI - 674, 675	Feb, 1996	I-131	-0.8334 ± 0.4012	-0.1217 ± 0.3926	-0.4776 ± 0.2807
MI - 674, 675	Feb, 1996	K-40	1,390.4000 ± 174.0000	1,493.6000 ± 166.0000	1,442.0000 ± 120.2414
WW - 865, 866	Feb, 1996	I-131	0.1291 ± 0.2170	0.0820 ± 0.2136	0.1056 ± 0.1522
PW - 932, 933	Feb, 1996	Co-60	0.5120 ± 1.4900	0.3780 ± 2.3900	0.4450 ± 1.4082
PW - 932, 933	Feb, 1996	Cs-137	0.0738 ± 1.6600	0.7260 ± 3.0400	0.3999 ± 1.7318
SW - 911, 912	Feb, 1996	Co-60	-1.7600 ± 3.3100	1.0300 ± 1.5400	-0.3650 ± 1.8254
SW - 911, 912	Feb, 1996	Cs-137	-0.2630 ± 3.6000	-0.8940 ± 1.7500	-0.5785 ± 2.0014
SWT - 953, 954	Feb, 1996	Gr. Beta	2.5439 ± 0.5217	2.2467 ± 0.5131	2.3953 ± 0.3659
LW - 1037, 1038	Feb, 1996	Gr. Beta	2.7972 ± 0.5293	3.0691 ± 0.5242	2.9331 ± 0.3725
LW - 1037, 1038	Feb, 1996	H-3	36.5277 ± 94.7223	116.7583 ± 97.9812	76.6430 ± 68.1407
CW - 977, 978	Mar, 1996	Gr. Beta	0.7188 ± 1.1771	-0.1223 ± 1.0275	0.2983 ± 0.7812
CW - 977, 978	Mar, 1996	Gr. Beta	3.9324 ± 1.5560	3.1466 ± 1.5001	3.5395 ± 1.0807
SW - 1467, 1468	Mar, 1996	H-3	130.3215 ± 81.1431	130.3215 ± 81.1431	130.3215 ± 57.3768
SW - 1467, 1468	Mar, 1996	Sr-89	-0.0970 ± 1.9887	-1.0924 ± 1.9042	-0.5947 ± 1.3767
SW - 1467, 1468	Mar, 1996	Sr-90	0.5674 ± 0.3439	0.8920 ± 0.3422	0.7297 ± 0.2426
MI - 1058, 1059	Mar, 1996	I-131	-0.3095 ± 0.4284	-0.0360 ± 0.4053	-0.1728 ± 0.2949
MI - 1058, 1059	Mar, 1996	K-40	1,500.0000 ± 157.0000	1,549.0000 ± 156.0000	1,524.5000 ± 110.6628
MI - 1058, 1059	Mar, 1996	Sr-89	0.5701 ± 0.9417	-1.5144 ± 1.2855	-0.4721 ± 0.7967
MI - 1058, 1059	Mar, 1996	Sr-90	1.5357 ± 0.3610	2.3692 ± 0.5498	1.9525 ± 0.3288
MI - 1152, 1153	Mar, 1996	I-131	0.4478 ± 0.6285	0.1991 ± 0.5613	0.3235 ± 0.4213
MI - 1152, 1153	Mar, 1996	K-40	1,524.3000 ± 157.0000	1,358.8000 ± 172.0000	1,441.5500 ± 116.4399
P - 1175, 1176	Mar, 1996	H-3	160.7848 ± 82.4671	151.8191 ± 82.0762	156.3020 ± 58.1750
LW - 1213, 1214	Mar, 1996	Gr. Beta	2.2980 ± 0.5989	2.6667 ± 0.6178	2.4823 ± 0.4302
LW - 1213, 1214	Mar, 1996	H-3	92.3600 ± 97.1490	29.4770 ± 94.5700	60.9185 ± 67.7890
SW - 1282, 1283	Mar, 1996	H-3	82.3522 ± 96.2415	36.8938 ± 94.3559	59.6230 ± 67.3896
LW - 1309, 1310	Mar, 1996	Co-60	2.9800 ± 4.7000	4.1400 ± 2.4800	3.5600 ± 2.6571
LW - 1309, 1310	Mar, 1996	Cs-134	-0.1740 ± 3.5700	2.2000 ± 4.4100	1.0130 ± 2.8369

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
LW - 1309, 1310	Mar, 1996	Cs-137	-4.7600 ± 3.9000	-1.0800 ± 4.2200	-2.9200 ± 2.8731
LW - 1309, 1310	Mar, 1996	Gr. Beta	2.5861 ± 0.5296	2.8938 ± 0.5364	2.7400 ± 0.3769
LW - 1309, 1310	Mar, 1996	I-131	0.4437 ± 0.5347	0.1485 ± 0.5179	0.2961 ± 0.3722
LW - 1309, 1310	Mar, 1996	I-131(g)	0.9870 ± 5.4900	-0.6760 ± 5.3400	0.1555 ± 3.8294
LW - 1309, 1310	Mar, 1996	K-40	104.7400 ± 51.7000	85.6000 ± 56.5000	95.1700 ± 38.2921
LW - 1362, 1363	Mar, 1996	H-3	162.9285 ± 99.8622	107.9647 ± 97.6775	135.4466 ± 69.8451
LW - 1362, 1363	Mar, 1996	Sr-89	-1.0161 ± 0.8768	0.2819 ± 1.3918	-0.3671 ± 0.8225
LW - 1362, 1363	Mar, 1996	Sr-90	0.7296 ± 0.3269	0.0477 ± 0.5074	0.3886 ± 0.3018
F - 1446, 1447	Mar, 1996	Co-60	0.0011 ± 0.0096	-0.0021 ± 0.0136	-0.0005 ± 0.0083
F - 1446, 1447	Mar, 1996	Cs-134	0.0003 ± 0.0080	0.0026 ± 0.0132	0.0015 ± 0.0077
F - 1446, 1447	Mar, 1996	Cs-137	0.0193 ± 0.0100	0.0114 ± 0.0119	0.0154 ± 0.0078
F - 1446, 1447	Mar, 1996	Gr. Beta	1.9680 ± 0.0709	1.8487 ± 0.0640	1.9084 ± 0.0478
F - 1446, 1447	Mar, 1996	I-131(g)	-0.0619 ± 0.3550	-0.6810 ± 0.5450	-0.3715 ± 0.3252
F - 1446, 1447	Mar, 1996	K-40	1.9652 ± 0.3080	2.0371 ± 0.3800	2.0012 ± 0.2446
SW - 1537, 1538	Mar, 1996	H-3	141.6453 ± 96.7270	175.2449 ± 98.0905	158.4451 ± 68.8801
LW - 1612, 1613	Mar, 1996	Co-60	3.5000 ± 3.0800	0.6920 ± 1.6200	2.0960 ± 1.7400
LW - 1612, 1613	Mar, 1996	Cs-134	1.4000 ± 2.6700	1.5800 ± 1.9600	1.4900 ± 1.6561
LW - 1612, 1613	Mar, 1996	Cs-137	4.7100 ± 3.0200	1.3100 ± 2.4100	3.0100 ± 1.9319
LW - 1612, 1613	Mar, 1996	Gr. Beta	2.6122 ± 0.5460	3.0068 ± 0.5285	2.8095 ± 0.3799
LW - 1612, 1613	Mar, 1996	I-131	0.2556 ± 0.1548	0.0982 ± 0.1470	0.1769 ± 0.1067
LW - 1612, 1613	Mar, 1996	I-131(g)	0.2750 ± 3.7100	0.7110 ± 2.8600	0.4930 ± 2.3422
LW - 1612, 1613	Mar, 1996	K-40	61.2000 ± 33.1000	98.3000 ± 31.4000	79.7500 ± 22.8121
CW - 1709, 1710	Mar, 1996	Gr. Beta	4.4929 ± 1.6917	3.5791 ± 1.6536	4.0360 ± 1.1828
CW - 1709, 1710	Mar, 1996	Gr. Beta	0.4362 ± 1.4668	0.2828 ± 1.4589	0.3595 ± 1.0344
AP - 2140, 2141	Mar, 1996	Sr-89	0.0001 ± 0.0007	-0.0002 ± 0.0007	-0.0001 ± 0.0005
AP - 2140, 2141	Mar, 1996	Sr-90	0.0000 ± 0.0002	0.0001 ± 0.0002	0.0001 ± 0.0001
WW - 1659, 1660	Mar, 1996	Co-60	0.1960 ± 3.2100	2.2100 ± 2.5200	1.2030 ± 2.0405
WW - 1659, 1660	Mar, 1996	Cs-137	-1.8700 ± 3.2800	2.2600 ± 2.4400	0.1950 ± 2.0440
WW - 1659, 1660	Mar, 1996	H-3	995.7658 ± 117.5351	1,115.3290 ± 121.1114	1,055.5474 ± 84.3838
PW - 1757, 1758	Mar, 1996	H-3	88.5534 ± 119.6998	68.8749 ± 119.0511	78.7141 ± 84.4115
AP - 2547, 2548	Mar, 1996	Co-60	0.0004 ± 0.0006	-0.0002 ± 0.0006	0.0001 ± 0.0004
AP - 2547, 2548	Mar, 1996	Cs-137	-0.0001 ± 0.0006	0.0000 ± 0.0006	-0.0000 ± 0.0004
AP - 2568, 2569	Mar, 1996	Co-60	0.0005 ± 0.0005	0.0000 ± 0.0004	0.0003 ± 0.0003
AP - 2568, 2569	Mar, 1996	Cs-137	-0.0004 ± 0.0005	-0.0002 ± 0.0004	-0.0003 ± 0.0003
MI - 1778, 1779	Apr, 1996	I-131	0.1746 ± 0.2116	0.0752 ± 0.1924	0.1249 ± 0.1430
MI - 1778, 1779	Apr, 1996	K-40	1,390.4000 ± 98.1000	1,426.0000 ± 144.0000	1,408.2000 ± 87.1200
MI - 1778, 1779	Apr, 1996	Sr-89	-3.0921 ± 2.1421	-1.3987 ± 1.9624	-2.2454 ± 1.4526

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
MI - 1778, 1779	Apr, 1996	Sr-90	2.2153 ± 0.5049	1.9830 ± 0.4425	2.0991 ± 0.3357
MI - 1799, 1800	Apr, 1996	Co-60	0.1740 ± 2.6900	1.8900 ± 4.5800	1.0320 ± 2.6558
MI - 1799, 1800	Apr, 1996	Cs-137	2.0500 ± 2.4200	1.7500 ± 3.1500	1.9000 ± 1.9861
MI - 1799, 1800	Apr, 1996	I-131	0.1298 ± 0.2421	0.1053 ± 0.2114	0.1176 ± 0.1607
MI - 1843, 1844	Apr, 1996	I-131	0.0149 ± 0.2136	0.0570 ± 0.2205	0.0359 ± 0.1535
MI - 1843, 1844	Apr, 1996	K-40	1,429.1000 ± 93.2000	1,630.3000 ± 143.0000	1,529.7000 ± 85.3452
LW - 1913, 1914	Apr, 1996	Co-60	2.2100 ± 0.7960	1.1500 ± 3.2300	1.6800 ± 1.6633
LW - 1913, 1914	Apr, 1996	Cs-134	0.4140 ± 0.8110	-0.7650 ± 3.0700	-0.1755 ± 1.5877
LW - 1913, 1914	Apr, 1996	Cs-137	0.5290 ± 0.8890	0.5070 ± 3.0900	0.5180 ± 1.6077
LW - 1913, 1914	Apr, 1996	Gr. Beta	3.0335 ± 0.5464	2.6622 ± 0.5491	2.8478 ± 0.3873
LW - 1913, 1914	Apr, 1996	I-131	0.0606 ± 0.2364	0.0603 ± 0.2573	0.0605 ± 0.1747
LW - 1913, 1914	Apr, 1996	I-131(g)	-0.2280 ± 1.7100	-1.6800 ± 5.3900	-0.9540 ± 2.8274
LW - 1913, 1914	Apr, 1996	K-40	39.4200 ± 17.4000	86.9000 ± 43.4000	63.1600 ± 23.3791
SO - 1946, 1947	Apr, 1996	Cs-137	0.1859 ± 0.0270	0.1768 ± 0.0201	0.1813 ± 0.0168
SO - 1946, 1947	Apr, 1996	K-40	10.4690 ± 0.4820	10.4630 ± 0.3570	10.4660 ± 0.2999
CW - 1991, 1992	Apr, 1996	Gr. Beta	3.8508 ± 1.6711	4.6034 ± 1.7163	4.2271 ± 1.1977
CW - 1991, 1992	Apr, 1996	Gr. Beta	-0.2825 ± 1.4171	0.2820 ± 1.4546	-0.0003 ± 1.0154
WW - 1890, 1891	Apr, 1996	Co-60	1.6200 ± 1.7500	0.1810 ± 2.2000	0.9005 ± 1.4056
WW - 1890, 1891	Apr, 1996	Cs-137	-0.5890 ± 1.6900	0.1370 ± 2.5100	-0.2260 ± 1.5130
WW - 1890, 1891	Apr, 1996	H-3	538.1625 ± 97.1244	601.3381 ± 99.3811	569.7503 ± 69.4798
WW - 2063, 2064	Apr, 1996	Gr. Beta	6.3139 ± 0.7737	6.2909 ± 0.8290	6.3024 ± 0.5670
WW - 2063, 2064	Apr, 1996	H-3	69.4957 ± 78.1213	26.7729 ± 76.2293	48.1343 ± 54.5753
MI - 2089, 2090	Apr, 1996	I-131	0.1583 ± 0.2546	0.1536 ± 0.2311	0.1559 ± 0.1719
MI - 2089, 2090	Apr, 1996	K-40	1,338.3000 ± 180.0000	1,456.5000 ± 160.0000	1,397.4000 ± 120.4159
LW - 2303, 2304	Apr, 1996	Co-60	1.9400 ± 2.9500	1.4800 ± 3.0400	1.7100 ± 2.1180
LW - 2303, 2304	Apr, 1996	Cs-137	0.8050 ± 2.7200	0.9610 ± 3.0000	0.8830 ± 2.0247
LW - 2303, 2304	Apr, 1996	Gr. Beta	3.7252 ± 1.2629	4.0921 ± 1.3004	3.9087 ± 0.9063
MI - 2418, 2419	Apr, 1996	I-131	0.1925 ± 0.4050	0.2006 ± 0.2588	0.1966 ± 0.2403
MI - 2418, 2419	Apr, 1996	K-40	1,418.9000 ± 120.0000	1,477.3000 ± 182.0000	1,448.1000 ± 109.0000
SS - 2442, 2443	Apr, 1996	Gr. Alpha	3.5711 ± 3.9146	0.3459 ± 2.7237	1.9585 ± 2.3845
SS - 2442, 2443	Apr, 1996	Gr. Beta	5.5419 ± 3.0734	8.6149 ± 3.2661	7.0784 ± 2.2424
SS - 2442, 2443	Apr, 1996	K-40	7.5398 ± 0.2470	7.8097 ± 0.2680	7.6748 ± 0.1822
SS - 2442, 2443	Apr, 1996	Sr-90	0.0110 ± 0.0097	0.0030 ± 0.0042	0.0070 ± 0.0053
SL - 2589, 2590	Apr, 1996	Cs-137	0.0527 ± 0.0297	0.0626 ± 0.0358	0.0577 ± 0.0233
SL - 2589, 2590	Apr, 1996	K-40	4.1139 ± 0.4900	3.2858 ± 0.5080	3.6999 ± 0.3529
WW - 2700, 2701	Apr, 1996	H-3	-13.8536 ± 73.4156	-31.1707 ± 72.5940	-22.5122 ± 51.627
SW - 2675, 2676	Apr, 1996	Co-60	-1.9100 ± 1.9100	-1.1500 ± 2.8600	-1.5300 ± 1.7196



Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
SW - 2675, 2676	Apr, 1996	Cs-137	-1.0100 ± 2.2000	3.0100 ± 2.5900	1.0000 ± 1.6991
SW - 2503, 2504	Apr, 1996	K-40	95.8880 ± 47.8000	71.0460 ± 36.8000	83.4670 ± 30.1624
LW - 2777, 2778	Apr, 1996	Co-60	3.1300 ± 3.7000	1.8900 ± 2.7700	2.5100 ± 2.3110
LW - 2777, 2778	Apr, 1996	Cs-134	-1.0500 ± 2.5100	-1.4600 ± 2.5400	-1.2550 ± 1.7855
LW - 2777, 2778	Apr, 1996	Cs-137	0.3840 ± 3.2600	2.4900 ± 3.1300	1.4370 ± 2.2597
LW - 2777, 2778	Apr, 1996	Gr. Beta	2.7205 ± 0.6414	2.2112 ± 0.6169	2.4658 ± 0.4449
LW - 2777, 2778	Apr, 1996	I-131	0.1973 ± 0.2628	-0.1244 ± 0.4231	0.0365 ± 0.2490
LW - 2777, 2778	Apr, 1996	I-131(g)	2.0800 ± 10.3000	-1.7600 ± 11.5000	0.1600 ± 7.7191
LW - 2777, 2778	Apr, 1996	K-40	91.0650 ± 43.2000	59.7000 ± 37.0000	75.3825 ± 28.4396
F - 2612, 2613	May, 1996	Co-60	0.0020 ± 0.0070	0.0031 ± 0.0137	0.0026 ± 0.0077
F - 2612, 2613	May, 1996	Cs-137	0.0004 ± 0.0059	0.0082 ± 0.0128	0.0043 ± 0.0071
BS - 2654, 2655	May, 1996	Gr. Beta	4.6997 ± 1.7758	5.9663 ± 1.8980	5.3330 ± 1.2996
BS - 2654, 2655	May, 1996	K-40	6.4406 ± 0.4180	6.6513 ± 0.3510	6.5460 ± 0.2729
BS - 2654, 2655	May, 1996	Sr-89	0.0115 ± 0.0275	0.0076 ± 0.0247	0.0096 ± 0.0185
BS - 2654, 2655	May, 1996	Sr-90	0.0021 ± 0.0058	0.0010 ± 0.0053	0.0015 ± 0.0039
F - 2633, 2634	May, 1996	Co-60	0.0077 ± 0.0135	0.0041 ± 0.0068	0.0059 ± 0.0076
F - 2633, 2634	May, 1996	Cs-137	0.0075 ± 0.0079	0.0025 ± 0.0064	0.0050 ± 0.0051
MI - 2742, 2743	May, 1996	Co-60	-1.6100 ± 3.2100	0.2250 ± 2.7200	-0.6925 ± 2.1037
MI - 2742, 2743	May, 1996	Cs-137	0.6880 ± 2.6100	-0.5110 ± 2.3400	0.0885 ± 1.7527
MI - 2742, 2743	May, 1996	I-131	-0.0263 ± 0.2140	0.2399 ± 0.2578	0.1068 ± 0.1675
MI - 2841, 2842	May, 1996	Co-60	2.0600 ± 3.3400	0.4630 ± 3.6400	1.2615 ± 2.4701
MI - 2841, 2842	May, 1996	Cs-137	0.4460 ± 2.7600	3.3300 ± 3.4000	1.8880 ± 2.1896
MI - 2841, 2842	May, 1996	I-131	0.3926 ± 0.2720	-0.0419 ± 0.2320	0.1754 ± 0.1788
WW - 2866, 2867	May, 1996	Gr. Beta	6.8885 ± 1.3446	6.9243 ± 1.3471	6.9064 ± 0.9517
WW - 2866, 2867	May, 1996	H-3	178.3372 ± 87.5017	133.7529 ± 85.5877	156.0450 ± 61.2001
LW - 2981, 2982	May, 1996	Co-60	1.9400 ± 2.4500	0.7540 ± 1.9900	1.3470 ± 1.5782
LW - 2981, 2982	May, 1996	Cs-134	0.8040 ± 2.3500	0.1660 ± 1.9900	0.4850 ± 1.5397
LW - 2981, 2982	May, 1996	Cs-137	2.2400 ± 2.6900	-0.7880 ± 2.1600	0.7260 ± 1.7249
LW - 2981, 2982	May, 1996	Gr. Beta	3.7095 ± 0.6063	2.5867 ± 0.5678	3.1481 ± 0.4153
LW - 2981, 2982	May, 1996	I-131	-0.0178 ± 0.2116	0.0518 ± 0.2280	0.0170 ± 0.1555
LW - 2981, 2982	May, 1996	I-131(g)	1.9100 ± 8.8900	-2.9600 ± 7.2900	-0.5250 ± 5.7484
LW - 2981, 2982	May, 1996	K-40	121.0000 ± 38.6000	150.7000 ± 23.3000	135.8500 ± 22.5436
F - 2887, 2888	May, 1996	Co-60	0.0025 ± 0.0074	-0.0067 ± 0.0107	-0.0021 ± 0.0065
F - 2887, 2888	May, 1996	Cs-137	-0.0003 ± 0.0054	0.0092 ± 0.0083	0.0045 ± 0.0050
WW - 3032, 3033	May, 1996	Gr. Beta	3.5731 ± 0.8840	2.5437 ± 0.5356	3.0584 ± 0.5168
WW - 3032, 3033	May, 1996	H-3	32.0189 ± 83.8864	133.6172 ± 88.2476	82.8181 ± 60.8781
SS - 2931, 2932	May, 1996	Cs-137	0.2016 ± 0.0948	0.1473 ± 0.0352	0.1745 ± 0.0506

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
SS - 2931, 2932	May, 1996	K-40	21.4470 ± 1.7600	18.8680 ± 0.9850	20.1575 ± 1.0084
CW - 2955, 2956	May, 1996	Gr. Beta	2.6457 ± 1.5687	3.6434 ± 1.6186	3.1445 ± 1.1270
CW - 2955, 2956	May, 1996	Gr. Beta	-0.3404 ± 1.1161	-0.4374 ± 1.1068	-0.3889 ± 0.7859
MI - 3053, 3054	May, 1996	Sr-89	0.5734 ± 1.5144	-0.5940 ± 1.9757	-0.0103 ± 1.2447
MI - 3053, 3054	May, 1996	Sr-90	1.3596 ± 0.4076	1.9168 ± 0.5433	1.6382 ± 0.3396
MI - 3099, 3100	May, 1996	Co-60	0.3260 ± 2.6800	0.3250 ± 4.3100	0.3255 ± 2.5376
MI - 3099, 3100	May, 1996	Cs-137	-0.5550 ± 2.5400	-0.8250 ± 3.6300	-0.6900 ± 2.2152
MI - 3099, 3100	May, 1996	I-131	0.0000 ± 0.2849	0.1521 ± 0.2367	0.0761 ± 0.1852
F - 3251, 3252	May, 1996	K-40	2.6265 ± 0.3740	2.7477 ± 0.2620	2.6871 ± 0.2283
BS - 3230, 3231	May, 1996	Cs-137	0.5908 ± 0.0415	0.6314 ± 0.0479	0.6111 ± 0.0317
BS - 3230, 3231	May, 1996	K-40	22.4440 ± 0.8280	21.8090 ± 0.8310	22.1265 ± 0.5865
MI - 3344, 3345	May, 1996	I-131	0.1825 ± 0.2236	0.1735 ± 0.2762	0.1780 ± 0.1777
MI - 3344, 3345	May, 1996	K-40	1,611.2000 ± 190.0000	1,409.5000 ± 157.0000	1,510.3500 ± 123.2366
VE - 3381, 3382	May, 1996	Gr. Alpha	0.4453 ± 0.1729	0.4370 ± 0.1764	0.4411 ± 0.1235
VE - 3381, 3382	May, 1996	Gr. Beta	4.2583 ± 0.2415	4.0142 ± 0.2465	4.1363 ± 0.1725
VE - 3381, 3382	May, 1996	K-40	4.5676 ± 0.2820	4.1093 ± 0.3490	4.3385 ± 0.2243
SWU - 3404, 3405	May, 1996	Gr. Beta	2.5210 ± 0.5256	3.1121 ± 0.5527	2.8165 ± 0.3814
SWU - 3404, 3405	May, 1996	H-3	197.5959 ± 88.4614	188.3624 ± 88.0751	192.9792 ± 62.4152
SW - 3677, 3678	May, 1996	Co-60	0.4910 ± 2.4000	0.1600 ± 1.7800	0.3255 ± 1.4940
SW - 3677, 3678	May, 1996	Cs-137	1.1600 ± 3.4000	-0.6680 ± 2.1900	0.2460 ± 2.0221
SW - 3677, 3678	May, 1996	Gr. Beta	5.3891 ± 1.3033	6.0224 ± 1.2717	5.7057 ± 0.9105
DW - 3551, 3552	May, 1996	Gr. Beta	2.7774 ± 0.5358	1.8916 ± 0.4948	2.3345 ± 0.3647
DW - 3551, 3552	May, 1996	I-131	0.3093 ± 0.3725	0.0000 ± 0.3989	0.1547 ± 0.2729
DW - 3551, 3552	May, 1996	K-40	113.1400 ± 47.8000	131.5000 ± 74.9000	122.3200 ± 44.4265
WW - 3506, 3507	May, 1996	H-3	3.0953 ± 81.2184	-32.1916 ± 79.5882	-14.5481 ± 56.8566
PW - 3700, 3701	May, 1996	Co-60	0.8910 ± 2.2100	-0.4110 ± 3.0700	0.2400 ± 1.8914
PW - 3700, 3701	May, 1996	Cs-137	-1.6500 ± 2.5300	0.2960 ± 3.1700	-0.6770 ± 2.0279
MI - 3447, 3448	Jun, 1996	Co-60	-0.5800 ± 4.8900	-1.2600 ± 4.7500	-0.9200 ± 3.4086
MI - 3447, 3448	Jun, 1996	Cs-137	0.7550 ± 3.5900	2.6200 ± 3.9300	1.6875 ± 2.6614
MI - 3447, 3448	Jun, 1996	I-131	-0.0354 ± 0.1423	-0.0708 ± 0.2845	-0.0531 ± 0.1590
G - 3530, 3531	Jun, 1996	Gr. Beta	4.7514 ± 0.0978	4.9200 ± 0.0996	4.8357 ± 0.0698
G - 3530, 3531	Jun, 1996	K-40	4.9488 ± 0.5170	4.5401 ± 0.4480	4.7445 ± 0.4821
G - 3530, 3531	Jun, 1996	Sr-89	0.0041 ± 0.0056	-0.0006 ± 0.0057	0.0017 ± 0.0040
G - 3530, 3531	Jun, 1996	Sr-90	0.0000 ± 0.0013	0.0009 ± 0.0014	0.0005 ± 0.0009
WW - 3597, 3598	Jun, 1996	Gr. Beta	2.6521 ± 0.7188	1.6547 ± 0.6666	2.1534 ± 0.4902
WW - 3597, 3598	Jun, 1996	H-3	114.9457 ± 80.8320	107.8722 ± 80.5219	111.4089 ± 57.047
G - 3621, 3622	Jun, 1996	K-40	5.5191 ± 0.1840	5.6649 ± 0.2200	5.5920 ± 0.1434

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
MI - 3642, 3643	Jun, 1996	I-131	-0.2191 ± 0.3434	0.2403 ± 0.3137	0.0106 ± 0.2326
F - 4452, 4453	Jun, 1996	Cs-137	0.0147 ± 0.0058	0.0120 ± 0.0047	0.0133 ± 0.0037
F - 4452, 4453	Jun, 1996	Cs-137	0.0147 ± 0.0058	0.0120 ± 0.0047	0.0133 ± 0.0037
F - 4452, 4453	Jun, 1996	Gr. Beta	2.1435 ± 0.1120	2.1090 ± 0.1050	2.1262 ± 0.0767
F - 4452, 4453	Jun, 1996	Gr. Beta	2.1435 ± 0.1120	2.1090 ± 0.1050	2.1262 ± 0.0767
F - 4452, 4453	Jun, 1996	K-40	1.9188 ± 0.1070	2.0107 ± 0.1060	1.9648 ± 0.0753
F - 4452, 4453	Jun, 1996	K-40	1.9188 ± 0.1070	2.0107 ± 0.1060	1.9648 ± 0.0753
MI - 3830, 3831	Jun, 1996	I-131	0.0373 ± 0.4959	0.1570 ± 0.4625	0.0972 ± 0.3391
MI - 3830, 3831	Jun, 1996	K-40	1,544.7000 ± 111.0000	1,447.1000 ± 159.0000	1,495.9000 ± 96.9562
MI - 3773, 3774	Jun, 1996	Co-60	1.3400 ± 2.9800	2.5300 ± 3.1800	1.9350 ± 2.1790
MI - 3773, 3774	Jun, 1996	Cs-137	3.7800 ± 2.6400	-0.3320 ± 2.6000	1.7240 ± 1.8527
MI - 3773, 3774	Jun, 1996	I-131	0.1664 ± 0.3100	-0.1240 ± 0.4621	0.0212 ± 0.2782
MI - 3874, 3875	Jun, 1996	Sr-89	-2.1430 ± 1.8964	-1.3467 ± 1.9330	-1.7448 ± 1.3540
MI - 3874, 3875	Jun, 1996	Sr-90	2.3113 ± 0.5587	2.3694 ± 0.5928	2.3403 ± 0.4073
G - 3918, 3919	Jun, 1996	K-40	6.6922 ± 0.2270	7.1444 ± 0.2770	6.9183 ± 0.1791
G - 4045, 4046	Jun, 1996	K-40	4.7112 ± 0.5300	5.1352 ± 0.3330	4.9232 ± 0.3130
SWU - 4092, 4093	Jun, 1996	Gr. Beta	2.3788 ± 0.6583	1.9279 ± 0.6369	2.1533 ± 0.4580
SWU - 4092, 4093	Jun, 1996	H-3	208.0150 ± 84.7681	223.9706 ± 85.4329	215.9928 ± 60.1756
MI - 4071, 4072	Jun, 1996	I-131	-0.1101 ± 0.5660	-0.1326 ± 0.5298	-0.1214 ± 0.3876
MI - 4071, 4072	Jun, 1996	K-40	1,229.3000 ± 142.0000	1,512.1000 ± 143.0000	1,370.7000 ± 100.7633
MI - 4071, 4072	Jun, 1996	Sr-89	0.2841 ± 1.0223	-0.4201 ± 1.2371	-0.0680 ± 0.8024
MI - 4071, 4072	Jun, 1996	Sr-90	0.9516 ± 0.3157	1.2585 ± 0.3851	1.1050 ± 0.2490
WW - 4113, 4114	Jun, 1996	I-131	0.0777 ± 0.5375	0.2762 ± 0.5142	0.1770 ± 0.3719
SW - 4162, 4163	Jun, 1996	H-3	13.3915 ± 75.3848	6.2494 ± 75.0457	9.8205 ± 53.1853
PW - 4215, 4216	Jun, 1996	H-3	58.4305 ± 80.8304	104.2785 ± 79.1202	81.3545 ± 56.5543
LW - 4259, 4260	Jun, 1996	H-3	195.8174 ± 86.1367	215.2812 ± 86.9327	205.5493 ± 61.1899
PW - 4549, 4550	Jun, 1996	Co-60	-0.4630 ± 1.4000	-0.3690 ± 1.5300	-0.4160 ± 1.0369
PW - 4549, 4550	Jun, 1996	Cs-137	-1.1200 ± 1.7200	-0.6960 ± 1.9900	-0.9080 ± 1.3152
SW - 4406, 4407	Jun, 1996	Co-60	-0.9280 ± 1.9500	-0.2850 ± 2.6100	-0.6065 ± 1.6290
SW - 4406, 4407	Jun, 1996	Cs-137	-0.3900 ± 2.4300	2.5700 ± 2.9300	1.0900 ± 1.9033
E - 4284, 4285	Jul, 1996	Gr. Beta	1.0430 ± 0.0595	1.1245 ± 0.0648	1.0837 ± 0.0440
E - 4284, 4285	Jul, 1996	K-40	1.1372 ± 0.1830	1.1588 ± 0.1160	1.1480 ± 0.1083
E - 4284, 4285	Jul, 1996	Sr-89	0.0019 ± 0.0044	0.0016 ± 0.0045	0.0017 ± 0.0032
E - 4284, 4285	Jul, 1996	Sr-90	-0.0001 ± 0.0011	0.0003 ± 0.0010	0.0001 ± 0.0007
WW - 4305, 4306	Jul, 1996	Gr. Beta	1.1828 ± 0.3499	1.2369 ± 0.3447	1.2098 ± 0.2456
MI - 4326, 4327	Jul, 1996	Co-60	-0.1700 ± 2.9800	-1.0600 ± 3.4400	-0.6150 ± 2.2756
MI - 4326, 4327	Jul, 1996	Cs-137	-0.0644 ± 2.6300	2.0100 ± 2.9700	0.9728 ± 1.9835



Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
P - 4431, 4432	Jul, 1996	H-3	24.8404 ± 71.8799	110.9537 ± 75.7439	67.8970 ± 52.2108
AP - 4595, 4596	Jul, 1996	Sr-89	0.0015 ± 0.0029	-0.0022 ± 0.0030	-0.0004 ± 0.0021
AP - 4595, 4596	Jul, 1996	Sr-90	0.0008 ± 0.0006	0.0002 ± 0.0007	0.0005 ± 0.0004
WW - 4375, 4376	Jul, 1996	Co-60	1.3000 ± 2.1300	1.1800 ± 2.4300	1.2400 ± 1.6157
WW - 4375, 4376	Jul, 1996	Cs-137	1.1100 ± 2.2700	1.0200 ± 2.8700	1.0650 ± 1.8296
WW - 4375, 4376	Jul, 1996	H-3	-30.7552 ± 76.9153	-25.4322 ± 77.1605	-28.0937 ± 54.4741
MI - 4503, 4504	Jul, 1996	I-131	-0.0390 ± 0.2814	0.1693 ± 0.2869	0.0652 ± 0.2009
MI - 4503, 4504	Jul, 1996	K-40	1,287.1000 ± 161.0000	1,188.3000 ± 136.0000	1,237.7000 ± 105.3767
MI - 4503, 4504	Jul, 1996	Sr-89	-1.4974 ± 0.9605	-1.7702 ± 1.2061	-1.6338 ± 0.7709
MI - 4503, 4504	Jul, 1996	Sr-90	1.5658 ± 0.5270	2.4509 ± 0.5124	2.0084 ± 0.3675
MI - 4527, 4528	Jul, 1996	Co-60	2.3600 ± 2.5400	-1.2100 ± 2.6300	0.5750 ± 1.8281
MI - 4527, 4528	Jul, 1996	Cs-134	0.7910 ± 1.9100	1.9000 ± 2.5500	1.3455 ± 1.5930
MI - 4527, 4528	Jul, 1996	Cs-137	-0.6890 ± 2.0300	0.0613 ± 2.2900	-0.3139 ± 1.5301
MI - 4527, 4528	Jul, 1996	I-131	0.1910 ± 0.4532	0.0901 ± 0.4519	0.1406 ± 0.3200
MI - 4527, 4528	Jul, 1996	I-131(g)	-0.0570 ± 2.8300	0.1290 ± 3.5800	0.0360 ± 2.2817
MI - 4527, 4528	Jul, 1996	K-40	1,419.1000 ± 91.3000	1,408.6000 ± 107.0000	1,413.8500 ± 70.3290
MI - 4527, 4528	Jul, 1996	Sr-89	-0.3720 ± 1.0231	-1.4605 ± 1.1500	-0.9162 ± 0.765
MI - 4527, 4528	Jul, 1996	Sr-90	1.0524 ± 0.2303	1.3388 ± 0.2716	1.1956 ± 0.1780
WW - 4684, 4685	Jul, 1996	H-3	-30.7174 ± 76.8208	-12.9958 ± 77.6342	-21.8566 ± 54.6088
WW - 4808, 4809	Jul, 1996	Gr. Beta	0.9983 ± 1.2558	0.8849 ± 1.2477	0.9416 ± 0.8852
WW - 4808, 4809	Jul, 1996	H-3	-15.0491 ± 82.3946	-30.4456 ± 72.7801	-22.7473 ± 54.9677
G - 4762, 4763	Jul, 1996	K-40	6.9707 ± 0.3420	7.2772 ± 0.2280	7.1240 ± 0.2055
LW - 4832, 4833	Jul, 1996	Co-60	-1.1600 ± 1.6700	1.1600 ± 1.8600	0.0000 ± 1.2498
LW - 4832, 4833	Jul, 1996	Cs-137	1.0200 ± 1.6300	1.6900 ± 2.2400	1.3550 ± 1.3851
LW - 4832, 4833	Jul, 1996	Gr. Beta	3.4602 ± 0.7027	3.3545 ± 0.6948	3.4074 ± 0.4941
LW - 4832, 4833	Jul, 1996	Gr. Beta	3.4602 ± 0.7027	3.3545 ± 0.6948	3.4074 ± 0.4941
LW - 5014, 5015	Jul, 1996	Gr. Beta	2.0107 ± 0.6109	2.0288 ± 0.6093	2.0197 ± 0.4314
F - 5515, 5516	Jul, 1996	Cs-137	0.0534 ± 0.0171	0.0522 ± 0.0182	0.0528 ± 0.0125
F - 5515, 5516	Jul, 1996	Gr. Beta	2.5113 ± 0.0911	2.4617 ± 0.0908	2.4865 ± 0.0643
F - 5515, 5516	Jul, 1996	K-40	2.4049 ± 0.2870	2.6688 ± 0.3560	2.5369 ± 0.2286
CW - 4956, 4957	Jul, 1996	Gr. Beta	2.1830 ± 1.4513	3.9669 ± 1.5535	3.0749 ± 1.0630
CW - 4956, 4957	Jul, 1996	Gr. Beta	0.5827 ± 1.2131	0.2749 ± 0.8554	0.4288 ± 0.7422
SW - 5248, 5249	Jul, 1996	Co-60	-1.0000 ± 1.9100	0.1870 ± 1.8700	-0.4065 ± 1.3365
SW - 5248, 5249	Jul, 1996	Cs-137	0.7590 ± 2.2800	-0.5680 ± 2.4400	0.0955 ± 1.6697
WW - 5215, 5216	Jul, 1996	H-3	183.4121 ± 90.9893	317.9144 ± 96.0148	250.6632 ± 66.1398
MI - 5081, 5082	Jul, 1996	Co-60	1.1900 ± 3.0700	-1.7100 ± 4.1800	-0.2600 ± 2.592
MI - 5081, 5082	Jul, 1996	Cs-137	0.4920 ± 2.6000	-2.8800 ± 3.3400	-1.1940 ± 2.1163

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
MI - 5081, 5082	Jul, 1996	I-131	0.1808 ± 0.5572	0.5417 ± 0.6704	0.3613 ± 0.4359
MI - 5081, 5082	Jul, 1996	I-131	0.1808 ± 0.5572	0.3699 ± 0.6986	0.2754 ± 0.4468
SWU - 5125, 5126	Jul, 1996	Gr. Beta	4.1217 ± 2.0543	5.5300 ± 2.3022	4.8258 ± 1.5427
SWU - 5125, 5126	Jul, 1996	H-3	176.3979 ± 90.7067	125.7490 ± 88.7348	151.0734 ± 63.4460
VE - 5146, 5147	Jul, 1996	Gr. Beta	3.1394 ± 0.1026	3.0940 ± 0.0683	3.1167 ± 0.0616
VE - 5146, 5147	Jul, 1996	K-40	3.3818 ± 0.1400	3.4692 ± 0.1430	3.4255 ± 0.1001
DW - 5269, 5270	Jul, 1996	Gr. Beta	6.4711 ± 1.3831	5.9871 ± 1.2673	6.2291 ± 0.9379
DW - 5269, 5270	Jul, 1996	I-131	0.2126 ± 0.3519	0.0404 ± 0.3202	0.1265 ± 0.2379
MI - 5168, 5169	Aug, 1996	I-131	-0.0474 ± 0.4432	-0.6129 ± 0.5327	-0.3302 ± 0.3465
MI - 5168, 5169	Aug, 1996	K-40	1,585.8000 ± 123.0000	1,534.4000 ± 162.0000	1,560.1000 ± 101.7018
MI - 5289, 5290	Aug, 1996	I-131	-0.0550 ± 0.5085	-0.3445 ± 0.5937	-0.1998 ± 0.3909
MI - 5190, 5191	Aug, 1996	Co-60	-1.6400 ± 2.7500	-0.1890 ± 4.0300	-0.9145 ± 2.4394
MI - 5190, 5191	Aug, 1996	Cs-137	0.1550 ± 3.1400	0.6150 ± 3.3900	0.3850 ± 2.3104
MI - 5190, 5191	Aug, 1996	I-131	0.2155 ± 0.4940	0.4414 ± 0.4691	0.3285 ± 0.3406
SL - 5424, 5425	Aug, 1996	Co-60	0.0012 ± 0.0107	0.0083 ± 0.0085	0.0047 ± 0.0068
SL - 5424, 5425	Aug, 1996	Cs-134	0.0089 ± 0.0094	0.0054 ± 0.0084	0.0071 ± 0.0063
SL - 5424, 5425	Aug, 1996	Cs-137	0.0328 ± 0.0171	0.0365 ± 0.0149	0.0347 ± 0.0113
SL - 5424, 5425	Aug, 1996	I-131(g)	0.0005 ± 0.0304	-0.0166 ± 0.0275	-0.0081 ± 0.0205
SL - 5424, 5425	Aug, 1996	K-40	1.5677 ± 0.2530	1.6391 ± 0.2110	1.6034 ± 0.1647
MI - 5386, 5387	Aug, 1996	Co-60	0.7970 ± 3.1900	-3.4000 ± 4.8300	-1.3015 ± 2.8942
MI - 5386, 5387	Aug, 1996	Cs-137	1.1400 ± 2.6400	1.7500 ± 3.4900	1.4450 ± 2.1880
MI - 5386, 5387	Aug, 1996	I-131	0.0065 ± 0.1987	-0.0211 ± 0.2171	-0.0073 ± 0.1472
MI - 5386, 5387	Aug, 1996	I-131	0.0065 ± 0.1987	-0.0271 ± 0.2797	-0.0103 ± 0.1716
SWU - 5905, 5906	Aug, 1996	Gr. Beta	1.4815 ± 0.6624	2.4356 ± 0.5278	1.9586 ± 0.4235
SWU - 5905, 5906	Aug, 1996	H-3	257.1759 ± 84.2902	306.5672 ± 86.2631	281.8715 ± 60.3037
MI - 5582, 5583	Aug, 1996	I-131	0.2361 ± 0.5705	-0.0245 ± 0.5563	0.1058 ± 0.3984
MI - 5582, 5583	Aug, 1996	K-40	1,473.6000 ± 180.0000	1,459.0000 ± 152.0000	1,466.3000 ± 117.7964
LW - 5606, 5607	Aug, 1996	Co-60	0.7330 ± 1.8200	-0.8030 ± 1.5400	-0.0350 ± 1.1921
LW - 5606, 5607	Aug, 1996	Cs-137	0.4970 ± 1.8900	-0.8750 ± 2.5900	-0.1890 ± 1.6031
LW - 5606, 5607	Aug, 1996	Gr. Beta	5.4236 ± 1.2712	5.3355 ± 1.2524	5.3795 ± 0.8923
SL - 5667, 5668	Aug, 1996	Cs-137	0.0316 ± 0.0139	0.0289 ± 0.0152	0.0303 ± 0.0103
SL - 5667, 5668	Aug, 1996	K-40	2.4446 ± 0.2910	2.6982 ± 0.2670	2.5714 ± 0.1975
CW - 5759, 5760	Aug, 1996	Gr. Beta	3.7309 ± 1.4739	4.5529 ± 1.5367	4.1419 ± 1.0646
CW - 5759, 5760	Aug, 1996	Gr. Beta	0.6565 ± 1.1139	0.6561 ± 1.1136	0.6562 ± 0.7876
MI - 5817, 5818	Aug, 1996	Co-60	-4.3400 ± 4.6000	3.7100 ± 4.8200	-0.3150 ± 3.3314
MI - 5817, 5818	Aug, 1996	Cs-137	-0.6750 ± 4.2000	1.3900 ± 3.5700	0.3575 ± 2.7561
MI - 5817, 5818	Aug, 1996	I-131	0.0287 ± 0.0732	0.0522 ± 0.0769	0.0405 ± 0.0531

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
SWT - 5884, 5885	Aug, 1996	Gr. Beta	2.7135 ± 0.7709	2.8640 ± 0.7248	2.7888 ± 0.5290
SW - 5925, 5926	Aug, 1996	Gr. Beta	3.5571 ± 0.6476	3.7970 ± 0.9008	3.6770 ± 0.5547
MI - 5978, 5979	Aug, 1996	I-131	-0.1138 ± 0.5079	0.3728 ± 0.4119	0.1295 ± 0.3270
MI - 5978, 5979	Aug, 1996	K-40	1,468.4000 ± 179.0000	1,560.8000 ± 173.0000	1,514.6000 ± 124.4689
VE - 5950, 5951	Aug, 1996	Co-60	0.0006 ± 0.0062	0.0028 ± 0.0058	0.0017 ± 0.0043
VE - 5950, 5951	Aug, 1996	Cs-137	-0.0006 ± 0.0048	0.0003 ± 0.0047	-0.0002 ± 0.0034
VE - 6031, 6032	Sep, 1996	Gr. Beta	2.9014 ± 0.0919	2.7239 ± 0.1833	2.8126 ± 0.1025
VE - 6031, 6032	Sep, 1996	K-40	3.2199 ± 0.1950	3.3724 ± 0.3060	3.2962 ± 0.1814
VE - 6031, 6032	Sep, 1996	Sr-89	0.0018 ± 0.0024	-0.0004 ± 0.0021	0.0007 ± 0.0016
VE - 6031, 6032	Sep, 1996	Sr-90	0.0002 ± 0.0007	0.0009 ± 0.0007	0.0006 ± 0.0005
LW - 6052, 6053	Sep, 1996	Co-60	0.9250 ± 1.0500	-0.5060 ± 1.5400	0.2095 ± 0.9319
LW - 6052, 6053	Sep, 1996	Cs-134	0.3430 ± 1.3200	0.8910 ± 2.3000	0.6170 ± 1.3259
LW - 6052, 6053	Sep, 1996	Cs-137	0.0211 ± 1.2900	-0.1280 ± 1.8600	-0.0535 ± 1.1318
LW - 6052, 6053	Sep, 1996	Gr. Beta	2.1334 ± 0.7031	3.0766 ± 0.5583	2.6050 ± 0.4489
LW - 6052, 6053	Sep, 1996	I-131	-0.4089 ± 0.3821	0.0180 ± 0.3249	-0.1955 ± 0.2508
LW - 6052, 6053	Sep, 1996	I-131(g)	1.2200 ± 6.0300	1.7000 ± 10.1000	1.4600 ± 5.8816
LW - 6052, 6053	Sep, 1996	K-40	66.8250 ± 30.1000	43.6000 ± 27.1000	55.2125 ± 20.251
WW - 6181, 6182	Sep, 1996	Gr. Beta	1.6248 ± 0.6211	1.0281 ± 0.6056	1.3264 ± 0.4337
WW - 6181, 6182	Sep, 1996	H-3	5.3932 ± 82.7475	62.9204 ± 85.2105	34.1568 ± 59.3885
MI - 6006, 6007	Sep, 1996	I-131	0.0780 ± 0.3076	0.0130 ± 0.3110	0.0455 ± 0.2187
MI - 6006, 6007	Sep, 1996	K-40	1,472.0000 ± 166.0000	1,502.9000 ± 110.0000	1,487.4500 ± 99.5691
CW - 6128, 6129	Sep, 1996	Gr. Beta	4.6340 ± 1.6130	4.5894 ± 1.6139	4.6117 ± 1.1409
CW - 6128, 6129	Sep, 1996	Gr. Beta	4.6340 ± 1.6130	4.5894 ± 1.6139	4.6117 ± 1.1409
CW - 6128, 6129	Sep, 1996	Gr. Beta	0.2285 ± 1.1265	0.3197 ± 1.1117	0.2741 ± 0.7913
SW - 6204, 6205	Sep, 1996	H-3	113.2802 ± 85.3728	61.4098 ± 83.1710	87.3450 ± 59.5943
MI - 6225, 6226	Sep, 1996	Co-60	1.9300 ± 2.8500	-0.5880 ± 2.5900	0.6710 ± 1.9255
MI - 6225, 6226	Sep, 1996	Cs-137	2.7700 ± 2.7200	-0.2550 ± 2.4700	1.2575 ± 1.8371
MI - 6225, 6226	Sep, 1996	I-131	-0.2584 ± 0.4450	0.2718 ± 0.3680	0.0067 ± 0.2887
VE - 6270, 6271	Sep, 1996	K-40	2.2202 ± 0.2730	2.0725 ± 0.2780	2.1464 ± 0.1948
WW - 6331, 6332	Sep, 1996	H-3	16,801.2285 ± 999.6339	17,111.8829 ± 1,006.0494	16,956.5557 ± 709.1198
CW - 6294, 6295	Sep, 1996	Gr. Beta	4.7742 ± 1.1613	3.9486 ± 1.6377	4.3614 ± 1.0038
CW - 6294, 6295	Sep, 1996	Gr. Beta	1.0482 ± 1.2275	-0.3383 ± 1.0818	0.3550 ± 0.8181
VE - 6379, 6380	Sep, 1996	K-40	1.7000 ± 0.2860	1.8440 ± 0.1800	1.7720 ± 0.1690
VE - 6379, 6380	Sep, 1996	Sr-89	-0.0018 ± 0.0018	-0.0009 ± 0.0014	-0.0013 ± 0.0012
VE - 6379, 6380	Sep, 1996	Sr-90	0.0012 ± 0.0006	0.0005 ± 0.0005	0.0008 ± 0.0004
CW - 6432, 6433	Sep, 1996	Gr. Beta	3.1975 ± 1.5496	3.2345 ± 1.4740	3.2160 ± 1.0694
VE - 6481, 6482	Sep, 1996	Gr. Beta	2.8412 ± 0.0780	2.8390 ± 0.0736	2.8401 ± 0.0536

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
VE - 6481, 6482	Sep, 1996	K-40	3.3857 ± 0.2370	3.5694 ± 0.1540	3.4776 ± 0.1413
SW - 6524, 6525	Sep, 1996	H-3	223.5203 ± 90.7888	151.2226 ± 87.8631	187.3714 ± 63.1715
SWT - 6545, 6546	Sep, 1996	Gr. Beta	2.7317 ± 0.5235	2.1160 ± 0.4971	2.4238 ± 0.3610
AP - 7220, 7221	Sep, 1996	Co-60	0.0006 ± 0.0007	0.0001 ± 0.0011	0.0003 ± 0.0006
AP - 7220, 7221	Sep, 1996	Cs-134	-0.0001 ± 0.0006	0.0001 ± 0.0007	-0.0000 ± 0.0004
AP - 7220, 7221	Sep, 1996	Cs-137	-0.0002 ± 0.0006	0.0009 ± 0.0008	0.0004 ± 0.0005
AP - 7220, 7221	Sep, 1996	I-131(g)	0.0013 ± 0.0041	0.0004 ± 0.0063	0.0008 ± 0.0038
AP - 7220, 7221	Sep, 1996	K-40	0.0193 ± 0.0100	0.0297 ± 0.0160	0.0245 ± 0.0094
DW - 6572, 6573	Sep, 1996	Gr. Alpha	1.0283 ± 0.6412	0.2799 ± 0.3100	0.6541 ± 0.3561
DW - 6572, 6573	Sep, 1996	Gr. Beta	2.8779 ± 0.8307	2.4510 ± 0.2702	2.6645 ± 0.4368
SW - 6593, 6594	Sep, 1996	H-3	58.2259 ± 80.0303	89.9855 ± 81.4187	74.1057 ± 57.0830
CW - 6616, 6617	Sep, 1996	Gr. Beta	3.1242 ± 1.6295	4.9871 ± 1.7193	4.0556 ± 1.1844
CW - 6616, 6617	Sep, 1996	Gr. Beta	0.2660 ± 1.0617	-0.2956 ± 1.0299	-0.0148 ± 0.7396
PW - 6675, 6676	Sep, 1996	H-3	21.6674 ± 80.1010	88.4752 ± 83.0584	55.0713 ± 57.6950
AP - 7537, 7538	Sep, 1996	Co-60	0.0003 ± 0.0005	-0.0000 ± 0.0007	0.0001 ± 0.0005
AP - 7537, 7538	Sep, 1996	Cs-137	0.0002 ± 0.0004	0.0002 ± 0.0007	0.0002 ± 0.0004
VE - 6654, 6655	Sep, 1996	Co-60	-0.0057 ± 0.0156	0.0022 ± 0.0147	-0.0018 ± 0.0107
VE - 6654, 6655	Sep, 1996	Cs-137	0.0128 ± 0.0133	0.0131 ± 0.0110	0.0130 ± 0.0086
CW - 6719, 6720	Sep, 1996	Gr. Beta	2.9910 ± 1.4044	2.1008 ± 1.5104	2.5459 ± 1.0312
CW - 6719, 6720	Sep, 1996	Gr. Beta	-0.3107 ± 1.0842	1.1119 ± 1.1700	0.4006 ± 0.7976
AP - 7558, 7559	Sep, 1996	Co-60	0.0003 ± 0.0004	0.0008 ± 0.0007	0.0006 ± 0.0004
AP - 7558, 7559	Sep, 1996	Co-60	0.0003 ± 0.0004	0.0008 ± 0.0007	0.0006 ± 0.0004
AP - 7558, 7559	Sep, 1996	Cs-137	-0.0001 ± 0.0004	0.0002 ± 0.0007	0.0001 ± 0.0004
AP - 7558, 7559	Sep, 1996	Cs-137	-0.0001 ± 0.0004	0.0002 ± 0.0007	0.0001 ± 0.0004
WW - 6696, 6697	Sep, 1996	H-3	313.7207 ± 98.9677	302.7129 ± 98.5588	308.2168 ± 69.8363
LW - 7118, 7119	Sep, 1996	Gr. Alpha	0.0448 ± 0.4053	-0.1825 ± 0.3885	-0.0688 ± 0.2807
LW - 7118, 7119	Sep, 1996	Gr. Beta	2.0623 ± 0.4378	1.5831 ± 0.5835	1.8227 ± 0.3647
LW - 7118, 7119	Sep, 1996	H-3	89.2546 ± 81.1237	92.8011 ± 81.2786	91.0279 ± 57.4179
E - 6783, 6784	Oct, 1996	Gr. Beta	0.9337 ± 0.0331	0.9578 ± 0.0317	0.9457 ± 0.0229
E - 6783, 6784	Oct, 1996	K-40	0.8969 ± 0.1320	1.1090 ± 0.1530	1.0029 ± 0.1010
E - 6783, 6784	Oct, 1996	Sr-89	-0.0002 ± 0.0032	-0.0009 ± 0.0029	-0.0006 ± 0.0022
E - 6783, 6784	Oct, 1996	Sr-90	0.0005 ± 0.0013	0.0005 ± 0.0012	0.0005 ± 0.0009
SW - 6877, 6878	Oct, 1996	H-3	1,223.4684 ± 119.5914	1,320.2432 ± 122.4059	1,271.8558 ± 85.5647
AP - 7199, 7200	Oct, 1996	Sr-89	-0.0006 ± 0.0015	0.0005 ± 0.0020	-0.0001 ± 0.0013
AP - 7199, 7200	Oct, 1996	Sr-90	0.0004 ± 0.0006	0.0006 ± 0.0008	0.0005 ± 0.0005
MI - 6746, 6747	Oct, 1996	I-131	-0.0925 ± 0.2640	0.1078 ± 0.2514	0.0077 ± 0.1823
MI - 6746, 6747	Oct, 1996	K-40	1,427.9000 ± 180.0000	1,425.3000 ± 208.0000	1,426.6000 ± 137.5354



Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
F - 6824, 6825	Oct, 1996	Co-60	0.0164 ± 0.0108	0.0030 ± 0.0057	0.0097 ± 0.0061
F - 6824, 6825	Oct, 1996	Cs-137	0.0087 ± 0.0073	0.0039 ± 0.0051	0.0063 ± 0.0044
WW - 6926, 6927	Oct, 1996	Co-60	0.8880 ± 1.3900	-0.4140 ± 2.7800	0.2370 ± 1.5541
WW - 6926, 6927	Oct, 1996	Cs-137	1.2900 ± 1.5000	1.8300 ± 3.2300	1.5600 ± 1.7807
WW - 6926, 6927	Oct, 1996	H-3	7.0861 ± 78.2685	-3.5430 ± 77.7859	1.7715 ± 55.1738
G - 7001, 7002	Oct, 1996	Co-60	0.0072 ± 0.0247	0.0046 ± 0.0099	0.0059 ± 0.0133
G - 7001, 7002	Oct, 1996	Cs-134	0.0101 ± 0.0188	0.0043 ± 0.0099	0.0072 ± 0.0106
G - 7001, 7002	Oct, 1996	Cs-137	-0.0068 ± 0.0204	-0.0042 ± 0.0093	-0.0055 ± 0.0112
G - 7001, 7002	Oct, 1996	Gr. Beta	5.2080 ± 0.2600	5.1980 ± 0.2600	5.2030 ± 0.1838
G - 7001, 7002	Oct, 1996	I-131(g)	-0.0137 ± 0.0372	0.0141 ± 0.0183	0.0002 ± 0.0207
G - 7001, 7002	Oct, 1996	K-40	6.1948 ± 0.7170	5.5229 ± 0.4170	5.8589 ± 0.4147
SS - 7024, 7025	Oct, 1996	Cs-137	0.0141 ± 0.0132	0.0248 ± 0.0125	0.0195 ± 0.0091
SS - 7024, 7025	Oct, 1996	Gr. Beta	7.6523 ± 2.0292	6.4672 ± 1.8437	7.0597 ± 1.3708
SS - 7024, 7025	Oct, 1996	K-40	7.1780 ± 0.5510	6.9053 ± 0.4040	7.0417 ± 0.3416
LW - 7045, 7046	Oct, 1996	Co-60	1.6200 ± 3.1100	-0.7530 ± 2.9100	0.4335 ± 2.1296
LW - 7045, 7046	Oct, 1996	Cs-134	-0.0246 ± 3.0400	-1.9300 ± 3.0500	-0.9773 ± 2.1531
LW - 7045, 7046	Oct, 1996	Cs-137	-0.9830 ± 2.8500	1.9300 ± 2.9700	0.4735 ± 2.0581
LW - 7045, 7046	Oct, 1996	Gr. Beta	2.8219 ± 0.7433	2.8922 ± 0.5347	2.8571 ± 0.4580
LW - 7045, 7046	Oct, 1996	I-131	0.2410 ± 0.3690	-0.2043 ± 0.4541	0.0184 ± 0.2926
LW - 7045, 7046	Oct, 1996	I-131(g)	-5.1500 ± 29.9000	5.8000 ± 27.7000	0.3250 ± 20.3795
LW - 7045, 7046	Oct, 1996	K-40	51.3000 ± 37.9000	34.5000 ± 33.8000	42.9000 ± 25.3912
F - 6952, 6953	Oct, 1996	K-40	2.7927 ± 0.1670	2.7243 ± 0.1020	2.7585 ± 0.0978
MI - 6853, 6854	Oct, 1996	Co-60	-0.7610 ± 4.7900	1.8000 ± 2.8100	0.5195 ± 2.7767
MI - 6853, 6854	Oct, 1996	Cs-137	1.5500 ± 3.5900	-0.8890 ± 2.4000	0.3305 ± 2.1592
MI - 6853, 6854	Oct, 1996	I-131	-0.1047 ± 0.2745	0.2027 ± 0.2586	0.0490 ± 0.1886
MI - 6854, 6855	Oct, 1996	Co-60	1.8000 ± 2.8100	0.4510 ± 4.9000	1.1255 ± 2.8243
MI - 6854, 6855	Oct, 1996	Co-60	1.8000 ± 2.8100	0.4510 ± 4.9000	1.1255 ± 2.8243
MI - 6854, 6855	Oct, 1996	Cs-137	-0.8890 ± 2.4000	1.5900 ± 3.2700	0.3505 ± 2.0281
MI - 6854, 6855	Oct, 1996	Cs-137	-0.8890 ± 2.4000	1.5900 ± 3.2700	0.3505 ± 2.0281
MI - 6854, 6855	Oct, 1996	I-131	0.0490 ± 0.1886	-0.1840 ± 0.2910	-0.0675 ± 0.1734
MI - 6854, 6855	Oct, 1996	I-131	0.2000 ± 0.2600	-0.1837 ± 0.2904	0.0082 ± 0.1949
MI - 6854, 6855	Oct, 1996	I-131	0.2027 ± 0.2586	-0.1840 ± 0.2910	0.0094 ± 0.1946
BS - 7138, 7139	Oct, 1996	Gr. Beta	9.5648 ± 2.4583	7.9345 ± 2.3466	8.7497 ± 1.6993
BS - 7138, 7139	Oct, 1996	K-40	7.2366 ± 0.4030	7.1729 ± 0.5230	7.2048 ± 0.3301
SO - 7306, 7307	Oct, 1996	Cs-137	0.2375 ± 0.0250	0.2243 ± 0.0437	0.2309 ± 0.0252
SO - 7306, 7307	Oct, 1996	K-40	9.4591 ± 0.4680	9.4848 ± 0.7300	9.4720 ± 0.4334
BO - 7747, 7748	Oct, 1996	Gr. Beta	1.6819 ± 0.3193	1.4542 ± 0.3070	1.5681 ± 0.2215

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
BO - 7747, 7748	Oct, 1996	K-40	0.7271 ± 0.1770	0.5964 ± 0.1430	0.6617 ± 0.1138
F - 7328, 7329	Oct, 1996	K-40	2.0975 ± 0.4500	1.7161 ± 0.3850	1.9068 ± 0.2961
MI - 7285, 7286	Oct, 1996	I-131	-0.1241 ± 0.2405	-0.0565 ± 0.2463	-0.0903 ± 0.1721
CW - 7176, 7177	Oct, 1996	Gr. Beta	3.1350 ± 1.0492	2.2278 ± 0.9950	2.6814 ± 0.7230
MI - 7351, 7352	Oct, 1996	Sr-89	-0.4959 ± 1.3277	-2.6954 ± 1.1984	-1.5956 ± 0.8943
MI - 7351, 7352	Oct, 1996	Sr-90	1.6216 ± 0.4003	1.5659 ± 0.3840	1.5938 ± 0.2774
VE - 7425, 7426	Oct, 1996	K-40	1.9203 ± 0.2360	1.7284 ± 0.2700	1.8244 ± 0.1793
MI - 7514, 7515	Oct, 1996	Co-60	2.1800 ± 5.1000	5.8600 ± 5.3900	4.0200 ± 3.7102
MI - 7514, 7515	Oct, 1996	Co-60	2.1800 ± 5.1000	5.8600 ± 5.3900	4.0200 ± 3.7102
MI - 7514, 7515	Oct, 1996	Cs-137	0.2630 ± 3.4000	1.3400 ± 4.3000	0.8015 ± 2.7409
MI - 7514, 7515	Oct, 1996	Cs-137	0.2630 ± 3.4000	1.3400 ± 4.3000	0.8015 ± 2.7409
MI - 7514, 7515	Oct, 1996	I-131	-0.0367 ± 0.2747	0.0170 ± 0.2780	-0.0098 ± 0.1954
F - 7584, 7585	Oct, 1996	Co-60	0.0051 ± 0.0115	0.0050 ± 0.0119	0.0051 ± 0.0083
F - 7584, 7585	Oct, 1996	Cs-137	0.0048 ± 0.0087	0.0006 ± 0.0094	0.0027 ± 0.0064
WW - 7653, 7654	Oct, 1996	Co-60	0.5440 ± 1.7200	-3.0500 ± 2.8000	-1.2530 ± 1.6430
WW - 7653, 7654	Oct, 1996	Co-60	0.5440 ± 1.7200	-3.0500 ± 2.8000	-1.2530 ± 1.6430
WW - 7653, 7654	Oct, 1996	Cs-137	-0.3090 ± 1.9800	-1.3700 ± 3.5700	-0.8395 ± 2.0412
WW - 7653, 7654	Oct, 1996	Cs-137	-0.3090 ± 1.9800	-1.3700 ± 3.5700	-0.8395 ± 2.0412
WW - 7653, 7654	Oct, 1996	H-3	-20.6120 ± 75.8854	27.0900 ± 78.0749	3.2390 ± 54.4387
SS - 8040, 8041	Oct, 1996	K-40	22.2090 ± 0.8210	23.4780 ± 0.8550	22.8435 ± 0.5927
SWT - 7972, 7973	Oct, 1996	Gr. Beta	2.7320 ± 0.5059	2.1353 ± 0.5134	2.4337 ± 0.3604
CW - 7794, 7795	Oct, 1996	Gr. Beta	1.2200 ± 1.7000	2.3526 ± 1.7822	1.7863 ± 1.2315
DW - 7994, 7995	Oct, 1996	Gr. Beta	1.6467 ± 0.4826	1.8357 ± 0.4589	1.7412 ± 0.3330
DW - 7994, 7995	Oct, 1996	H-3	64.0848 ± 81.6689	29.6241 ± 80.1237	46.8545 ± 57.2049
WW - 8121, 8122	Nov, 1996	Gr. Beta	5.2418 ± 0.7885	4.8908 ± 0.7351	5.0663 ± 0.5390
WW - 8121, 8122	Nov, 1996	H-3	49.1914 ± 78.3272	25.7955 ± 77.2446	37.4935 ± 55.0042
CW - 8089, 8090	Nov, 1996	Gr. Beta	2.0590 ± 1.7640	-0.0624 ± 1.6065	0.9983 ± 1.1930
CW - 8089, 8090	Nov, 1996	Gr. Beta	-0.3253 ± 1.5458	0.0296 ± 1.5731	-0.1479 ± 1.1027
SWU - 8213, 8214	Nov, 1996	Gr. Beta	2.5755 ± 0.5930	1.9537 ± 0.5962	2.2646 ± 0.4204
SWU - 8213, 8214	Nov, 1996	H-3	257.8646 ± 86.6697	234.9041 ± 85.7288	246.3843 ± 60.9530
SWU - 8213, 8214	Nov, 1996	K-40	109.2500 ± 41.2000	97.1440 ± 52.0000	103.1970 ± 33.1717
CW - 8302, 8303	Nov, 1996	Gr. Beta	0.9444 ± 1.4135	2.1017 ± 1.4184	1.5230 ± 1.0012
MI - 8337, 8338	Nov, 1996	I-131	-0.0286 ± 0.2146	0.0724 ± 0.2406	0.0219 ± 0.1612
MI - 8337, 8338	Nov, 1996	K-40	1,454.6000 ± 91.6000	1,365.5000 ± 193.0000	1,410.0500 ± 106.8171
WW - 8561, 8562	Nov, 1996	H-3	4,719.0000 ± 197.0000	4,718.8773 ± 197.2068	4,718.9387 ± 139.3732
SW - 8581, 8582	Nov, 1996	Gr. Beta	3.1780 ± 0.6522	2.4547 ± 0.6458	2.8164 ± 0.4589
WW - 8681, 8682	Nov, 1996	Gr. Alpha	0.1083 ± 1.7623	-1.6686 ± 1.5384	-0.7802 ± 1.1697

Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
WW - 8681, 8682	Nov, 1996	Gr. Beta	2.7636 ± 1.6718	1.2914 ± 1.6711	2.0275 ± 1.1819
CW - 8612, 8613	Nov, 1996	Gr. Beta	2.5959 ± 1.4986	1.9085 ± 1.4277	2.2522 ± 1.0349
CW - 8612, 8613	Nov, 1996	Gr. Beta	0.0730 ± 1.0631	-0.7679 ± 1.0588	-0.3474 ± 0.7502
CW - 9219, 9220	Nov, 1996	Co-60	0.4990 ± 1.9100	-0.2780 ± 1.6600	0.1105 ± 1.2653
CW - 9219, 9220	Nov, 1996	Cs-137	1.3800 ± 2.0100	0.1520 ± 1.6300	0.7660 ± 1.2939
CW - 9219, 9220	Nov, 1996	H-3	2,091.6585 ± 147.0922	2,206.2783 ± 149.9008	2,148.9684 ± 105.0076
CW - 8830, 8831	Nov, 1996	Gr. Alpha	0.1864 ± 0.3044	0.4130 ± 0.3037	0.2997 ± 0.2150
CW - 8830, 8831	Nov, 1996	Gr. Beta	11.0773 ± 0.6482	10.2141 ± 0.5784	10.6457 ± 0.4344
CW - 8830, 8831	Nov, 1996	H-3	2,053.4722 ± 144.0356	2,112.1937 ± 145.4793	2,082.8329 ± 102.3603
CW - 8830, 8831	Nov, 1996	Sr-89	-0.2648 ± 0.5335	-0.2665 ± 0.6325	-0.2656 ± 0.4137
CW - 8830, 8831	Nov, 1996	Sr-90	0.2880 ± 0.3295	0.2980 ± 0.3905	0.2930 ± 0.2555
SW - 8635, 8636	Dec, 1996	Gr. Beta	2.4968 ± 0.8037	3.0769 ± 0.7797	2.7869 ± 0.5599
SW - 8635, 8636	Dec, 1996	K-40	90.1230 ± 52.8000	90.4480 ± 51.9000	90.2855 ± 37.0184
DW - 8660, 8661	Dec, 1996	Gr. Beta	2.1325 ± 0.5706	1.8680 ± 0.5881	2.0003 ± 0.4097
DW - 8660, 8661	Dec, 1996	H-3	110.0746 ± 83.6820	117.3323 ± 83.9962	113.7035 ± 59.2833
MI - 8704, 8705	Dec, 1996	I-131	-0.2720 ± 0.2656	-0.2978 ± 0.2604	-0.2849 ± 0.1860
MI - 8704, 8705	Dec, 1996	K-40	1,301.2000 ± 141.0000	1,342.9000 ± 150.0000	1,322.0500 ± 102.93
MI - 8725, 8726	Dec, 1996	Co-60	0.4980 ± 2.7500	0.4080 ± 4.4400	0.4530 ± 2.6113
MI - 8725, 8726	Dec, 1996	Cs-134	1.2300 ± 2.3300	-0.6450 ± 3.8000	0.2925 ± 2.2287
MI - 8725, 8726	Dec, 1996	Cs-137	1.7600 ± 2.5400	1.1100 ± 3.3900	1.4350 ± 2.1180
MI - 8725, 8726	Dec, 1996	I-131	-0.1756 ± 0.1896	-0.1739 ± 0.2108	-0.1747 ± 0.1418
MI - 8725, 8726	Dec, 1996	I-131(g)	-0.9720 ± 3.4000	4.5100 ± 4.8700	1.7690 ± 2.9697
MI - 8725, 8726	Dec, 1996	K-40	1,402.2000 ± 111.0000	1,297.5000 ± 150.0000	1,349.8500 ± 93.3019
MI - 8725, 8726	Dec, 1996	Sr-89	-1.0624 ± 1.0291	-1.0463 ± 1.0044	-1.0543 ± 0.7190
MI - 8725, 8726	Dec, 1996	Sr-90	1.3308 ± 0.3709	1.1232 ± 0.3625	1.2270 ± 0.2593
SO - 8802, 8803	Dec, 1996	Cs-137	0.4670 ± 0.0419	0.4514 ± 0.0374	0.4592 ± 0.0281
SO - 8802, 8803	Dec, 1996	Gr. Alpha	14.0253 ± 4.2670	13.8640 ± 4.0228	13.9447 ± 2.9322
SO - 8802, 8803	Dec, 1996	Gr. Beta	21.4173 ± 3.1354	21.4610 ± 2.8794	21.4391 ± 2.1285
SO - 8802, 8803	Dec, 1996	K-40	11.0890 ± 0.6640	10.8030 ± 0.6130	10.9460 ± 0.4518
SWU - 9540, 9541	Dec, 1996	Gr. Beta	7.5204 ± 0.8776	5.9562 ± 0.8260	6.7383 ± 0.6026
SWU - 9540, 9541	Dec, 1996	H-3	90.1991 ± 86.7053	86.5424 ± 86.5510	88.3707 ± 61.2554
F - 9040, 9041	Dec, 1996	Co-60	-0.0006 ± 0.0144	-0.0002 ± 0.0150	-0.0004 ± 0.0104
F - 9040, 9041	Dec, 1996	Cs-134	-0.0015 ± 0.0103	0.0005 ± 0.0120	-0.0005 ± 0.0079
F - 9040, 9041	Dec, 1996	Cs-137	0.0371 ± 0.0163	0.0428 ± 0.0186	0.0400 ± 0.0124
F - 9040, 9041	Dec, 1996	Gr. Beta	3.5649 ± 0.0939	3.5230 ± 0.0939	3.5440 ± 0.0664
F - 9040, 9041	Dec, 1996	I-131(g)	0.0008 ± 0.0151	-0.0004 ± 0.0153	0.0002 ± 0.0107
F - 9040, 9041	Dec, 1996	K-40	3.2987 ± 0.4720	3.0073 ± 0.4330	3.1530 ± 0.3203



Table A-5. In-house "duplicate" samples.

Lab Codes <sup>b</sup>	Sample Date	Analysis	Concentration in pCi/L <sup>a</sup>		
			First Result	Second Result	Averaged Result
CW - 9109, 9110	Dec, 1996	Gr. Beta	4.1495 ± 1.2265	1.9601 ± 1.5457	3.0548 ± 0.9866
CW - 9109, 9110	Dec, 1996	Gr. Beta	-0.8681 ± 1.3230	-1.1056 ± 1.3024	-0.9869 ± 0.9282
MI - 9197, 9198	Dec, 1996	I-131	0.0738 ± 0.3589	-0.1464 ± 0.3804	-0.0363 ± 0.2615
MI - 9197, 9198	Dec, 1996	K-40	1,462.6000 ± 143.0000	1,381.2000 ± 149.0000	1,421.9000 ± 103.2594
WW - 9269, 9270	Dec, 1996	Co-60	-1.1100 ± 2.3300	-0.2890 ± 2.6000	-0.6995 ± 1.7456
WW - 9269, 9270	Dec, 1996	Cs-137	-1.2100 ± 2.2100	0.2210 ± 2.5500	-0.4945 ± 1.6872
WW - 9269, 9270	Dec, 1996	H-3	1,051.0538 ± 116.7594	1,126.1290 ± 119.0359	1,088.5914 ± 83.3701
LW - 9291, 9292	Dec, 1996	Co-60	-0.2250 ± 2.0000	1.2400 ± 2.3400	0.5075 ± 1.5391
LW - 9291, 9292	Dec, 1996	Cs-137	4.0400 ± 2.1800	0.1930 ± 2.8300	2.1165 ± 1.7861
LW - 9291, 9292	Dec, 1996	Gr. Beta	4.8680 ± 1.3409	7.3432 ± 1.4448	6.1056 ± 0.9856
SW - 9743, 9744	Dec, 1996	H-3	1.2426 ± 89.7614	51.5686 ± 91.8276	26.4056 ± 64.2056
SW - 9414, 9415	Dec, 1996	Gr. Beta	3.9527 ± 0.6945	4.6396 ± 0.7606	4.2961 ± 0.5150
DW - 9520, 9521	Dec, 1996	Gr. Beta	6.1588 ± 1.3500	5.6935 ± 1.2445	5.9261 ± 0.9180
DW - 9520, 9521	Dec, 1996	I-131	0.3470 ± 0.4182	0.2339 ± 0.4184	0.2905 ± 0.2958
CW - 9383, 9384	Dec, 1996	Gr. Beta	4.7813 ± 1.7392	4.5942 ± 1.5609	4.6877 ± 1.1685
CW - 9383, 9384	Dec, 1996	Gr. Beta	0.6113 ± 1.4866	0.4335 ± 1.4715	0.5224 ± 1.0459
SW - 9433, 9434	Dec, 1996	H-3	309.2956 ± 91.1018	247.0810 ± 88.6407	278.1883 ± 63.5545
SW - 9497, 9498	Dec, 1996	H-3	241.0070 ± 91.8990	126.5590 ± 87.2570	183.7830 ± 63.3625
DW - 9564, 9565	Dec, 1996	Gr. Beta	2.0290 ± 0.5925	2.1508 ± 0.5749	2.0899 ± 0.4128
DW - 9564, 9565	Dec, 1996	H-3	120.7999 ± 83.3742	94.1528 ± 82.2309	107.4763 ± 58.5516

<sup>a</sup> All concentrations are reported in pCi/liter, except solid samples, which are reported in pCi/gram.

<sup>b</sup> Lab codes are comprised of the sample media and the sample numbers. Client codes have been eliminated to protect client anonymity.

Table A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP), comparison of MAPEP and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/kg <sup>b</sup>		
				Teledyne Results ±Standard Deviation <sup>c</sup>	MAPEP Result <sup>d</sup> 1s, N=1	Control Limits
STSO-776	SOIL	Sep, 1996	Am-241	27.0	28.7 ± 2.8	20.9 - 37.3
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	Co-60	879.0	812.0 ± 83.5	568.4 - 1,055.6
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	Cs-137	1,716.0	1,531.0 ± 193.4	1,071.7 - 1,990.3
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	Pu-238	13.0	15.9 ± 1.8	11.1 - 20.7
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	Pu-239/240	18.0	19.7 ± 2.0	13.8 - 25.6
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	Sr-90	441.0	536.0 ± 57.1	375.2 - 696.8
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	U-234/233	59.0	63.9 ± 7.3	44.7 - 83.1
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						
STSO-776	SOIL	Sep, 1996	U-238	60.0	64.0 ± 6.4	44.8 - 83.2
Standard deviation for three determinations not reported in Mixed Analyte Performance Evaluation Program Summary Report.						

<sup>a</sup> Results obtained by Teledyne Brown Engineering Environmental Services Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho.

<sup>b</sup> All results are in Becquerels per kilogram as requested by the Department of Energy.

<sup>c</sup> Unless otherwise indicated, the TBEESML results are given as the mean ± 1 standard deviations for three determinations.

<sup>d</sup> MAPEP results are presented as the known values and expected laboratory precision (1s, 1 determination) and control limits as defined by the MAPEP.

Table A-7. Environmental Measurements Laboratory Quality Assessment Program (EML), comparison of EML and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L <sup>1b</sup>		Control Limits <sup>a</sup>
				Teledyne Result <sup>c</sup>	EML Result <sup>d</sup>	
STW-755	WATER	Mar, 1996	Am-241	0.8 ± 0.1	0.8 ± 0.0	0.7 - 1.6
STW-755	WATER	Mar, 1996	Co-60	33.6 ± 1.0	32.8 ± 0.6	0.9 - 1.2
STW-755	WATER	Mar, 1996	Cs-137	42.8 ± 1.3	38.3 ± 0.9	0.9 - 1.3
STW-755	WATER	Mar, 1996	Fe-55	109.0 ± 21.7	83.0 ± 3.4	0.3 - 1.6
STW-755	WATER	Mar, 1996	H-3	434.0 ± 34.1	251.0 ± 11.4	0.7 - 1.9
STW-755	WATER	Mar, 1996	Mn-54	41.9 ± 1.4	38.4 ± 1.2	0.9 - 1.2
STW-755	WATER	Mar, 1996	Pu-238	0.9 ± 0.1	1.0 ± 0.1	0.7 - 1.3
STW-755	WATER	Mar, 1996	Pu-239	0.7 ± 0.1	0.8 ± 0.1	0.6 - 1.4
STW-755	WATER	Mar, 1996	Sr-90	2.2 ± 0.7	1.5 ± 0.0	0.7 - 1.7
STW-756	WATER	Mar, 1996	Gr. Alpha	2,180.0 ± 53.5	1,850.0 ± 185.0	0.6 - 1.3
STW-756	WATER	Mar, 1996	Gr. Beta	872.0 ± 27.0	744.0 ± 74.0	0.8 - 1.7
STSO-757	SOIL	Mar, 1996	Am-241	6.2 ± 2.9	3.7 ± 0.5	0.5 - 2.4
STSO-757	SOIL	Mar, 1996	Cs-137	404.0 ± 0.2	359.0 ± 10.0	0.7 - 1.4
STSO-757	SOIL	Mar, 1996	K-40	525.0 ± 23.3	465.0 ± 30.0	0.7 - 1.6
STSO-757	SOIL	Mar, 1996	Pu-238	42.3 ± 1.6	43.0 ± 2.4	0.2 - 2.0
STSO-757	SOIL	Mar, 1996	Pu-239	9.0 ± 0.7	9.2 ± 0.3	0.6 - 2.0
STSO-757	SOIL	Mar, 1996	Sr-90	1,200.0 ± 32.3	1,340.0 ± 113.0	0.6 - 3.0
STSO-757	SOIL	Mar, 1996	Uranium	68.2 ± 2.4	71.7 ± 4.2	0.3 - 1.5
STVE-758	VEGETATION	Mar, 1996	Am-241	6.1 ± 1.3	5.6 ± 0.2	0.6 - 2.9
STVE-758	VEGETATION	Mar, 1996	Cm-244	6.0 ± 1.2	4.4 ± 0.2	0.4 - 1.9
STVE-758	VEGETATION	Mar, 1996	Co-60	65.6 ± 4.0	59.7 ± 1.0	0.6 - 1.5
STVE-758	VEGETATION	Mar, 1996	Cs-137	1,100.0 ± 12.6	944.0 ± 16.2	0.8 - 1.5
STVE-758	VEGETATION	Mar, 1996	K-40	1,190.0 ± 61.6	1,030.0 ± 33.0	0.5 - 1.5
STVE-758	VEGETATION	Mar, 1996	Pu-239	9.2 ± 1.3	9.8 ± 1.2	0.6 - 2.0
STVE-758	VEGETATION	Mar, 1996	Sr-90	1,210.0 ± 32.2	1,300.0 ± 52.4	0.5 - 1.4
STAF-759	AIR FILTER	Mar, 1996	Am-241	0.3 ± 0.0	0.2 ± 0.0	0.6 - 1.9
STAF-759	AIR FILTER	Mar, 1996	Ce-144	23.2 ± 1.0	33.3 ± 3.3	0.6 - 1.3
STAF-759	AIR FILTER	Mar, 1996	Co-57	6.1 ± 0.1	8.9 ± 0.9	0.6 - 1.3
STAF-759	AIR FILTER	Mar, 1996	Co-60	26.5 ± 0.4	29.5 ± 2.9	0.7 - 1.3
STAF-759	AIR FILTER	Mar, 1996	Cs-134	12.9 ± 0.3	14.7 ± 1.5	0.7 - 1.2
STAF-759	AIR FILTER	Mar, 1996	Cs-137	6.2 ± 0.9	6.6 ± 0.7	0.7 - 1.3
STAF-759	AIR FILTER	Mar, 1996	Mn-54	3.3 ± 0.4	3.4 ± 0.4	0.8 - 1.3
STAF-759	AIR FILTER	Mar, 1996	Pu-238	0.1 ± 0.0	0.1 ± 0.0	0.6 - 1.6
STAF-759	AIR FILTER	Mar, 1996	Pu-239	0.1 ± 0.0	0.1 ± 0.0	0.7 - 1.6
STAF-759	AIR FILTER	Mar, 1996	Ru-106	10.2 ± 1.9	11.6 ± 1.4	0.5 - 1.6
STAF-759	AIR FILTER	Mar, 1996	Sb-125	10.1 ± 0.8	9.8 ± 1.0	0.4 - 1.4
STAF-759	AIR FILTER	Mar, 1996	Sr-90	1.1 ± 0.2	1.1 ± 0.0	0.6 - 2.3
STAF-759	AIR FILTER	Mar, 1996	Uranium	0.1 ± 0.0	0.1 ± 0.0	0.8 - 2.9

Table A-7. Environmental Measurements Laboratory Quality Assessment Program (EML), comparison of EML and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L <sup>1b</sup>		Control Limits <sup>c</sup>
				Teledyne Result <sup>c</sup>	EML Result <sup>d</sup>	
STAF-760	AIR FILTER	Mar, 1996	Gr. Alpha	2.2 ± 0.1	1.6 ± 0.2	0.8 - 1.6
STAF-760	AIR FILTER	Mar, 1996	Gr. Beta	2.0 ± 0.0	1.8 ± 0.2	0.8 - 1.9
STW-770	WATER	Sep, 1996	Am-241	1.3 ± 0.2	1.1 ± 0.0	0.6 - 1.7
STW-770	WATER	Sep, 1996	Co-60	65.0 ± 2.2	61.1 ± 0.7	0.9 - 1.2
STW-770	WATER	Sep, 1996	Cs-137	96.1 ± 3.0	89.5 ± 1.4	0.9 - 1.3
STW-770	WATER	Sep, 1996	Gr. Alpha	993.0 ± 12.2	1,210.0 ± 121.0	0.5 - 1.3
STW-770	WATER	Sep, 1996	Gr. Beta	579.0 ± 8.1	540.0 ± 54.0	0.6 - 1.6
STW-770	WATER	Sep, 1996	H-3	488.0 ± 34.6	587.0 ± 58.0	0.7 - 1.9
STW-770	WATER	Sep, 1996	Mn-54	65.0 ± 3.0	60.5 ± 0.6	0.9 - 1.2
STW-770	WATER	Sep, 1996	Pu-238	1.3 ± 0.3	1.9 ± 0.1	0.7 - 1.3
An investigation was conducted. No errors in calculations or transcription were noted. The analysis was repeated in duplicate under the observation of the Technical Lead. No discrepancies were noted in the performance of the procedure. The result of the reanalysis was 2.14 ± 0.11 Bq/L. No further action is planned.						
STW-770	WATER	Sep, 1996	Pu-239	0.7 ± 0.2	0.8 ± 0.0	0.8 - 1.4
STW-770	WATER	Sep, 1996	Sr-90	3.6 ± 0.7	2.7 ± 0.2	0.7 - 1.7
STW-770	WATER	Sep, 1996	U-234	0.5 ± 0.2	0.5 ± 0.0	0.8 - 1.5
STW-770	WATER	Sep, 1996	U-238	0.4 ± 0.1	0.5 ± 0.4	0.8 - 1.4
STSO-771	SOIL	Sep, 1996	Am-241	15.6 ± 3.8	13.5 ± 0.5	0.5 - 2.7
STSO-771	SOIL	Sep, 1996	Co-60	4.0 ± 2.5	2.9 ± 0.2	0.5 - 1.5
STSO-771	SOIL	Sep, 1996	Cs-137	1,750.0 ± 24.4	1,550.0 ± 22.2	0.8 - 1.3
STSO-771	SOIL	Sep, 1996	K-40	369.0 ± 59.5	300.0 ± 25.0	0.7 - 1.7
STSO-771	SOIL	Sep, 1996	Pu-238	0.8 ± 0.4	1.1 ± 0.2	0.4 - 1.9
STSO-771	SOIL	Sep, 1996	Pu-239	24.0 ± 1.9	21.8 ± 1.1	0.7 - 1.9
STSO-771	SOIL	Sep, 1996	Sr-90	63.6 ± 4.0	69.9 ± 5.1	0.5 - 2.8
STSO-771	SOIL	Sep, 1996	U-234	37.2 ± 3.8	39.2 ± 2.4	0.4 - 1.3
STSO-771	SOIL	Sep, 1996	U-238	40.8 ± 4.0	41.6 ± 0.6	0.4 - 1.6
STVE-772	VEGETATION	Sep, 1996	Am-241	1.5 ± 0.9	1.2 ± 0.4	0.7 - 2.8
STVE-772	VEGETATION	Sep, 1996	Cm-244	0.6 ± 0.5	0.8 ± 0.1	0.5 - 1.7
STVE-772	VEGETATION	Sep, 1996	Co-60	14.0 ± 4.4	10.9 ± 0.7	0.6 - 1.4
STVE-772	VEGETATION	Sep, 1996	Cs-137	219.0 ± 10.1	190.0 ± 6.7	0.8 - 1.5
STVE-772	VEGETATION	Sep, 1996	K-40	1,160.0 ± 99.4	992.0 ± 29.0	0.8 - 1.5
STVE-772	VEGETATION	Sep, 1996	Sr-90	1,420.0 ± 35.1	1,390.0 ± 12.0	0.5 - 1.3
STAP-773	AIR FILTER	Sep, 1996	Co-57	11.8 ± 0.3	14.8 ± 0.8	0.6 - 1.2
STAP-773	AIR FILTER	Sep, 1996	Co-60	9.2 ± 0.4	8.6 ± 0.4	0.7 - 1.2
STAP-773	AIR FILTER	Sep, 1996	Cs-134	9.6 ± 0.4	10.8 ± 0.4	0.7 - 1.2
STAP-773	AIR FILTER	Sep, 1996	Cs-137	8.7 ± 0.4	8.5 ± 0.4	0.7 - 1.3
STAP-773	AIR FILTER	Sep, 1996	Gr. Alpha	0.7 ± 0.0	1.2 ± 0.1	0.8 - 1.6

An investigation was conducted and a transcription error while calculating the result was discovered. The recalculated value is 1.15 ± 0.01 Bq/filter. No further action is planned.

Table A-7. Environmental Measurements Laboratory Quality Assessment Program (EML), comparison of EML and Teledyne's Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L <sup>-1b</sup>		Control Limits <sup>e</sup>
				Teledyne Result <sup>c</sup>	EML Result <sup>d</sup>	
STAP-773	AIR FILTER	Sep, 1996	Gr. Beta	0.5±0.0	0.5±0.1	0.7 - 1.8
STAP-773	AIR FILTER	Sep, 1996	Mn-54	7.1±0.5	6.4±0.3	0.8 - 1.3
STAP-773	AIR FILTER	Sep, 1996	Ru-106	11.5±3.2	10.8±1.1	0.6 - 1.3
STAP-773	AIR FILTER	Sep, 1996	Sb-125	12.4±1.0	10.8±0.5	0.6 - 1.4

<sup>a</sup> The Environmental Measurements Laboratory provides the following nuclear species : Air Filters, Soil, Tissue, Vegetation and Water. Teledyne does not participate in the Tissue program.

<sup>b</sup> Results are reported in Bq/L<sup>-1</sup> with the following exceptions: Air Filter results are reported in Bq/Filter<sup>-1</sup>, Soil results are reported in Bq/Kg<sup>-1</sup>, Vegetation results are reported in Bq/Kg<sup>-1</sup>. The results of elemental Uranium are reported in ug/filter<sup>-1</sup>, g, or ml.

<sup>c</sup> Teledyne results are reported as the mean of three determinations±standard deviation.

<sup>d</sup> The EML result listed is the mean of replicate determinations for each nuclide±the standard error of the mean.

<sup>e</sup> The control limits are reported by EML and are established from percentiles of historic data distributions (1982-1992). The evaluation of this historic data and the development of the control limits is presented in DOE report EML-564.

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;

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

All results are reported as measured pursuant to Health Physics Society Committee Report HSR-1 (1980) released as EPA 520/1-80-012.

### 3.0. Duplicate analyses

#### 3.1 Individual results:

$$x_1 \pm s_1$$

$$x_2 \pm s_2$$

Reported result:

$$x \pm s$$

where  $x = (1/2) (x_1 + x_2)$

$$s = (1/2) \sqrt{s_1^2 + s_2^2}$$



POINT BEACH NUCLEAR PLANT

APPENDIX C

Sampling Program and Locations

# POINT BEACH NUCLEAR PLANT

Table C-1. Sample collection and analysis program.

Sample Type	Locations		Collection Type (and Frequency) <sup>b</sup>	Analysis (and Frequency) <sup>b</sup>
	No.	Codes (and Type) <sup>a</sup>		
Airborne Filters	6	E-1-4, 8, 20	Weekly	GB, GS, on QC for each location
Airborne Iodine	6	E-1-4, 8, 20	Weekly	I-131
Ambient Radiation (TLD's)	22	E-1-9, 12, 14-18, 20, 22-32	Quarterly	Ambient Gamma
Lake Water	5	E-1, 5, 6, 12, 33	Monthly	GB, BS, I-131 on MC H-3, Sr-89-90 on QC
Well Water	1	E-10	Quarterly	GB, GS, H-3, Sr-89-90, I-131
Vegetation	8	E-1-4, 6, 9, 20	3x / year as available	GB, GS
Shoreline Silt	5	E-1, 5, 6, 8, 9, 12	2x / year	GB, GS
Soil	8	E-1-4, 6, 8, 9, 20	2x / year	GB, GS
Milk	3	E-11, 19, 21	Monthly	GS, I-131, Sr-89-90
Algae	2	E-5, 12	3x / year as available	GB, GS
Fish	1	E-13	3x / year as available	GB, GS (in edible portions)

## SPECIAL COLLECTIONS AND ANALYSES

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

<sup>a</sup> Locations codes are defined in Table 2. Control Stations are indicated by (C). All other stations are indicators.

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