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PNP 2014-040

May 15, 2014

10 CFR 50, Appendix I
Technical Specification 5.6.2

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

Subject: 2013 Radiological Environmental Operating Report

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Dear Sir or Madam:

Entergy Nuclear Operations, Inc. is submitting the enclosed Radiological Environmental Operating Report for the Palisades Nuclear Plant. This report was prepared in accordance with the requirements of 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, IV.C, and Technical Specification 5.6.2. The period covered by the enclosed report is January 1, 2013, through December 31, 2013.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Terry A. Davis".

TAD/bed

Enclosure 1: Annual Radiological Environmental Operating Report January 1, 2013,
Through December 31, 2013

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

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**ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
JANUARY 1, 2013 THROUGH DECEMBER 31, 2013**

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**ENVIRONMENTAL ANNUAL RADIOLOGICAL OPERATING REPORT
JANUARY 1, 2013 THROUGH DECEMBER 31, 2013**

I. INTRODUCTION

The Radiological Environmental Operating Report provides a summary and data interpretation of the Palisades Nuclear Plant (PNP) Radiological Environmental Monitoring Program (REMP) as conducted during the 2013 reporting period. This report was prepared in accordance with the requirements of 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, IV.C, and Technical Specification 5.6.2.

II. NON-ROUTINE REPORTS

No reportable events occurred during this reporting period.

III. DISCUSSION AND INTERPRETATION OF RESULTS

A. Air Samples

There were 259 air samples collected and analyzed for gross beta and I-131. Air iodine/particulate samples are collected weekly from five air-sampling locations. Air is metered into the sampling unit at an approximate one cubic foot per minute flow rate through a 47-mm air filter (air particulate) and an air iodine cartridge. Both filters are in-line with each other and housed within the same filter holder. Weekly samples were sent to GEL Laboratories for analysis.

Analysis of the airborne particulate sample data, between the four near-site indicator locations and the control location, demonstrated no statistical difference. The average concentration of gross beta for both indicator and control locations was 0.048 pCi/m³ and 0.041 pCi/m³, respectively. The indicator location 5PR had the highest average concentration of 0.067 pCi/m³. All I-131 activity results were below the minimum detectable concentration (MDC) levels.

Station 10GR had one week with no sample due to the sample pump having no power for one full week. This was caused by area power outages from storm conditions. This was documented in CR-PLP-2013-4944.

B. Lake Water (Surface Water)

Palisades' Lake-in (Indicator) and Ludington (Control) lake water samples were collected daily and combined into monthly composite samples. One gallon each of Palisades' Lake-in and Ludington Lake-in composites were sent to GEL Laboratories for monthly analysis for gross beta, gamma spectroscopy, and tritium. No treatment of the water samples with preservative was required.

No statistical difference was found between the Indicator and Control location samples, and no PNP Offsite Dose Calculation Manual (ODCM) Appendix A reporting limits were exceeded. The Lake-in indicator sample indicated 2.43E0 uCi/ml of Gross Beta in the month of October 2013. All Ludington samples and the remainder of the Palisades' samples had no detectable activity. Tritium was not detected in any indicator or control samples. There were no gamma emitters detected in any of these samples.

The positive sample result in October 2013 is attributed to a substantial increase of rainfall during the month. The rainfall total for October more than doubled from almost every other month in 2013. Precipitation (rain or snow) can produce greater temporal variations. After rain showers, the exposure rate near the earth's surface may increase significantly due to the "rainout" of radon daughter products from the atmosphere. Sample results, when detected, remain slightly higher since 2008, due to a change in vendor performing analyses, and how positive results are determined when each activity is compared to its listed minimum detectable concentration.

C. Drinking Water

Palisades' Domestic Water and South Haven Municipal Raw Water (Indicators) and Ludington (Control) water samples were collected daily and combined into monthly composite samples. One gallon each of these composites were sent to GEL Laboratories for analysis and analyzed for gross beta, gamma spectroscopy, and tritium. No treatment of the water samples with preservative was required.

Gross beta and tritium were not detected in any Indicator or Control sample other than one indication of Gross Beta in the South Haven Raw Water sample in October of 2013. The October South Haven Raw Water sample indicated 2.82E0 uCi/ml of Gross Beta. There were no gamma emitters detected in any of these samples.

The positive sample result in the South Haven Municipal Raw Water sample is attributed to a substantial increase of rainfall in the month of October 2013. The rainfall total for October more than doubled from almost every other month in 2013. Precipitation (rain or snow) can produce greater temporal variations. After rain showers the exposure rate near the earth's surface may increase significantly due to the "rainout" of radon daughter products from the atmosphere. Sample results, when detected, remain slightly higher since 2008 due to a change in vendor performing analyses and how positive results are determined when each activity is compared to its listed minimum detectable concentration.

Five monthly samples were taken from the closest commercial well water at the seasonal Palisades Park housing subdivision south of PNP. Another five samples were taken from the community well at the seasonal Palisades Park facility. These samples were sent to GEL Laboratories for analysis and analyzed for gross beta, gamma spectroscopy, and tritium. No treatment of the water samples with preservative was required.

Tritium and gamma results for the Palisades Park samples were less than minimum detectable activity for all samples obtained. There was one positive Gross Beta sample of 3.15 pCi/L in August 2013 for the Palisades Park Community Well. Wells are not turned on before April 15th and are secured by October 15th of each year.

D. Milk

There are no dairy farms meeting the sampling criteria of being within eight kilometers (km) of PNP. Because of a lack of dairy farms, PNP analyzes broad leaf vegetation samples as a substitute for milk sampling.

E. Thermoluminescent Dosimeters (TLD) - Gamma Dose

Environmental gamma doses are measured quarterly by placement of TLDs at designated locations. Sensitivity for the TLDs is 3 millirem, with a linear response of 1 millirem to 50 rem.

The PNP direct radiation monitoring program consists of TLDs placed at 23 locations. There are ten inner ring TLDs, one on-site TLD, nine outer ring TLDs and three control TLDs located in Grand Rapid, Kalamazoo and Dowagiac.

91 TLDs were collected and analyzed during 2013. Location 18 was not collected in the third quarter of 2013 due to an error during collection. This TLD was collected at the end of the 4th quarter and the vendor was able to relate dose to both quarters. This is documented in CR-PLP-2014-2329. The on-site TLD is included with the inner ring (site boundary) TLDs for evaluating any dose effect that could be attributed to PNP operations.

The TLD data evaluations were performed by comparing the inner ring TLDs and the outer ring TLDs against the control TLDs.

The quarterly average gamma readings in mrem were:

Inner Ring	9.9
Outer Ring	11.6
Control	11.7

The highest average reading was observed at outer ring location number 2 with a value of 14.5 mrem and a maximum reading of 14.6 mrem. This location is historically the highest above the outer ring average, but not attributed to plant operations, since the inner ring in the same sector is not significantly above the average reading of the inner ring. This location is on a dirt road by an animal farm, which contributes to the higher natural background at this location due to radon daughter products.

The average control dose, 11.7 mrem, plus 2 standard deviations was 13.1 mrem. No Inner Ring reading exceeded this amount. This demonstrates that there was no direct radiation effect due to PNP operations.

Note: It should be noted that the critical aspect of environmental TLD monitoring is the comparison between Indicator and Control TLD dose in the same monitoring period – more so than the comparison from one year to the next.

F. Crops

Two principal area crops, apples and blueberries, were collected in 2013. Approximately 1 kg of sample is placed in a plastic bag for shipment to the vendor for analysis. No special treatment of the samples with a preservative is necessary.

Blueberries and apples were collected in the vicinity of indicator station 4-JS (3.5 miles SE). There was no activity detected in the blueberries and apple samples except for naturally occurring K-40.

G. Sediment

Sediment samples are collected semi-annually from a location ½ mile north of the plant along the waterline. No treatment of the samples with a preservative is necessary prior to shipment to the vendor for analysis.

There was no activity detected in the sediment samples except for naturally occurring K-40.

H. Fish

Fish samples are collected semi-annually. Samples consist of species of commercially and/or recreationally important species near the plant discharge area. Control samples are obtained in an area not influenced by plant discharge. Each one-liter quantity of fish sample is frozen for preservation for shipment to GEL Laboratories for analysis.

Five fish samples were collected in the vicinity of PNP and five control samples were collected, three from Ludington Pumped Storage Facility, one sample from approximately five miles north of DC Cook Nuclear Power Plant and one sample from approximately five miles south of DC Cook Nuclear Power Plant. Cs-137 was detected in four of the five Palisades' samples with an average concentration of 8.3 pCi/kg and in one DC Cook and two Ludington samples with an average concentration of 25.6 pCi/kg. The reporting level for Cs-137 in fish is 2000 pCi/kg. This is attributed to background radiation from Chernobyl and weapons testing, and not from plant operations, as seen from the indicator samples being less than the control samples.

I. Broad Leaf Vegetation

PNP derived an acceptance criterion for broadleaf sample Cs-137 results based upon background sampling done in association with CR-PLP-2011-2205, CA 24. The acceptance value has been determined to be 146 pCi/Kg, which is the background average plus one standard deviation. This means that any sample result above this would be statistically valid and would require additional evaluation pertaining to the source of activity.

In conclusion, there is ample documented evidence that Cs-137 exists in the environment from activities 25 to 50 plus years ago. Cs-137 has a 30.17 year half-life so there is still plenty of the originally estimated $2.45E7$ Curies left in the biosphere. Cesium is readily transported through the environment due to its chemical properties. When in solution (during rainfall events) it can be efficiently taken up by plants. The evidence presented here documents the fact that there is a fairly wide ranging span of Cs-137 concentration in the environment that is far enough away from the site to not be associated with deposits from plant effluents.

In support of this conclusion is the fact that Location 1 is in a heavily wooded area where sample media would typically attain activity from the sediment rather than gaseous effluents. Location 2 and control are in areas that are more open and next to roads which has a better opportunity to receive activity from gaseous releases. Also there was no particulate released from plant effluents until the fourth quarter. This consisted of Cs-137, a comparable quantity of Co-60, and a much larger amount of I-131. I-131 was released during the course of the year at a consistent quantity and should have been detected in the foliage also if it was from plant gaseous effluents.

2013 samples results were reviewed and assessed based on the above criterion. Location 1, located in a wooded area, had Cs-137 identified in four of the five samples collected in 2013 with an average of 47.8 pCi/Kg.

Location 2, located near the site boundary and on the edge of a wooded area had one of five samples indicate Cs-137 at 51.6 pCi/Kg. No positives were indicated at the control location which is also on a wooded area edge. All positives are below the calculated environmental average of 55.4 pCi/Kg indicated in this section and well below the 146 pCi/Kg acceptance value.

J. Non-Routine Samples

No non-routine samples were taken in 2013.

K. Gaseous and Liquid Radwaste Effluent Composite Samples

Gaseous and liquid radwaste effluent composite samples are collected and analyzed on site and by GEL Laboratories. No special sample treatment with a preservative is required prior to laboratory analysis. The liquid effluent composite sample is produced from samples collected from each batch release. The gaseous radwaste effluent weekly composite sample results are based on analyzing weekly stack gas particulate filters.

Although not a direct reporting component in the PNP Annual Radiological Environmental Operating Report, results of the gaseous and liquid monthly radwaste effluent composite samples, in addition to normal release data, is evaluated against overall environmental trending data. This evaluation assists in determining isotopic dispersion and deposition patterns within the surrounding environment of PNP.

IV. ASSESSMENT OF PALISADES OPERATION ENVIRONMENTAL IMPACT

In reviewing the 2013 PNP radiological environmental monitoring data, and comparing it to previous operational and pre-operational data, all trending parameters continue to indicate that the operation of PNP has minimal environmental impact. Most isotopic activity is at environmental background levels. Evidence of an overall environmental isotopic buildup (attributable to plant effluents) remains negligible as well. The positive Cs-137 results detected in crops, broadleaf, and fish samples are attributed to atmospheric weapons testing and Chernobyl accident source term.

**ENVIRONMENTAL ANNUAL RADIOLOGICAL OPERATING REPORT
JANUARY 1, 2013 THROUGH DECEMBER 31, 2013**

Palisades Nuclear Plant, Van Buren County, MI Docket 50-255

Annual Radiological Environmental Operating Report

January 1, 2013 to December 31, 2013

Table 10.4-1

Sampling and Analysis Summary

Medium	Collection Description	Location	Number of Samples Collected	Type of Analysis	Frequency of Analysis
Air	Continuous at appx 1 cfm	Stations 4, 5, 8, 9 and 10	259	Gross Beta, I-131	Weekly
Lake Water	1 gallon composite	Lake Intake	12	Gross Beta, Tritium	Monthly
Lake Water - Control	1 gallon composite	Ludington Lake In	12	Gross Beta, Tritium	Monthly
Drinking Water	1 gallon composite (Palisades Park samples – 1 gallon grab each)	South Haven Municipal (Domestic Water), South Haven Raw, Palisades Park – Community/Commercial Wells	34	Gross Beta, Tritium, Gamma isotopic	Monthly (Palisades Park collected Monthly while wells are in service)
TLD	Continuous	Inner Ring, Outer Ring, Controls	91	Gamma dose	Quarterly
Food Products	1 kg grab	4-JS, 3.5 miles SE	2	Gamma isotopic and I-131	At time of harvest
Sediment	1 L grab	Discharge 1/2 mile north of Palisades	2	Gamma isotopic	Semiannually
Fish	1 L grab	Discharge and Control	4	Gamma isotopic	Semiannually
Broad leaf Vegetation	1 kg grab	Plant boundary – S and SSE sectors, Control 9 to 18 miles NNE of plant	15	Gamma isotopic and I-131	Monthly during growing season

**ENVIRONMENTAL ANNUAL RADIOLOGICAL OPERATING REPORT
JANUARY 1, 2013 THROUGH DECEMBER 31, 2013**

**Table 10.4-2
Sample Data Summary**

Name of Facility	Palisades Nuclear Plant	Docket No	50-255
Location of Facility (County, State)	Van Buren, Michigan	Reporting Period	Jan 1, 2013 to Dec 31, 2013

Medium or Pathway Sampled (Unit of Measure)	Type/Total Number of Analyses Performed	Lower Limit of Detection ^a (MDC)	All Indicator Locations Mean (f) ^b Range ^b	Greatest Mean Name Distance & Direction	Greatest Mean (f) ^b Range ^b	Control Locations Mean (f) ^b Range ^b	Number of Reportable Occurrences
Air (pCi/m ³)	I-131 / 259	0.07	< MDC (0/208)	NA	< MDC (0/52)	< MDC (0/51)	0
	Gross beta / 259	0.01	0.048 (208/208) 0.019 - 0.166	5PR 5.8 mi ESE	0.067 (52/52) 0.032 – 0.166	0.041 (51/51) 0.021 – 0.091	0
Lake Water (pCi/L) ^c	Gross beta / 24	4.0	2.43 (1/12)	Palisades LKIN	2.43 (1/12)	< MDC (0/12)	0
	Tritium / 24	2000	< MDC (0/12)	NA	< MDC (0/12)	< MDC (0/12)	0
Drinking Water (pCi/L) ^c	Gross beta / 46	4.0	3.15 (2/34)	Palisades Park – Community Well	3.15 (2/34)	< MDC (0/12)	0
	Tritium / 46	2000	< MDC (0/34)	NA	< MDC (0/34)	< MDC (0/12)	0
Inner Ring TLD (Gamma mR) ^d	Gamma Dose / 55	Sensitivity of 3 per vendor	9.9 (43/43) 8.28 – 11.44	Station # 1 Palisades	11.0 (4/4) 10.55 – 11.38	11.7 (12/12) 10.68 – 12.73	0
Outer Ring (Gamma mR) ^d	Gamma Dose / 48	Sensitivity of 3 per vendor	11.6 (36/36) 9.55 – 14.60	Station # 2 5.6 miles S	14.5 (4/4) 14.41 – 14.60	11.7 (12/12) 10.68 – 12.73	0
Food Crops (pCi/kg wet)	I-131 / 2	60	< MDC (0/2)	NA	< MDC (0/2)	Control sample not required	0
	Cs-134 / 2	60	< MDC (0/2)	NA	< MDC (0/2)	Control sample not required	0
	Cs-137 / 2	80	< MDC (0/2)	NA	< MDC (0/2)	Control sample not required	0

Medium or Pathway Sampled (Unit of Measure)	Type/Total Number of Analyses Performed	Lower Limit of Detection ^a (MDC)	All Indicator Locations Mean (f) ^b Range ^b	Greatest Mean Name Distance & Direction	Greatest Mean (f) ^b Range ^b	Control Locations Mean (f) ^b Range ^b	Number of Reportable Occurrences
Sediment (pCi/kg dry)	Cs-134 / 2	150	< MDC (0/2)	NA	< MDC (0/2)	Control sample not required	0
	Cs-137 / 2	180	< MDC (0/2)	NA	< MDC (0/2)	Control sample not required	0
Fish (pCi/kg wet)	Mn-54 / 10	130	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Fe-59 / 10	260	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Co-58 / 10	130	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Co-60 / 10	130	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Zn-65 / 10	260	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Cs-134 / 10	130	< MDC (0/5)	NA	< MDC (0/9)	< MDC (0/5)	0
	Cs-137 / 10	150	8.3 (4/5) 5.5 – 12.3	Palisades	12.3 (1/5) 12.3	25.6 (3/5) 7.4 – 49.3	0
Broad Leaf Vegetation (pCi/kg wet)	I-131 / 15	60	< MDC (0/10)	NA	< MDC (0/8)	< MDC (0/5)	0
	Cs-134 / 15	60	< MDC (0/10)	NA	< MDC (0/8)	< MDC (0/5)	0
	Cs-137 / 15	80	48.6 (5/10) 43.3 – 51.6	BV2 0.5 miles SE	51.6 (1/5) 51.6	< MDC (0/5)	0

a Nominal Lower Limit of Detection (LLD) as defined in table notation c of ODCM Appendix A Table E-3

b Mean and range based on detectable measurements only.

c The Lake Water and the Drinking Water totals in column 2 both account for the use of the same samples from Ludington Control.

d The Inner and Outer TLD totals in column 2 account for the use of the same control TLDs in both areas.

f Fraction of detectable measurements at specific locations is indicated in parenthesis

**ENVIRONMENTAL ANNUAL RADIOLOGICAL OPERATING REPORT
JANUARY 1, 2013 THROUGH DECEMBER 31, 2013**

**Table 10.4-3
Greatest Mean Sampling Location
January 1, 2013 to December 31, 2013**

Medium or Pathway Sampled (unit of measurement)	Type of Analysis	Location	High	Low	Mean
Air (pCi/m ³)	I-131	NA	< MDC	< MDC	< MDC
	Gross Beta	5PR	0.166	0.032	0.067
Lake Water (pCi/L)	Gross Beta	Palisades	2.43	2.43	2.43
	Tritium	NA	< MDC	< MDC	< MDC
Drinking Water (pCi/L)	Gross Beta	Palisades Park – Community Well	3.15	2.82	2.98
	Tritium	NA	< MDC	< MDC	< MDC
Inner Ring TLD (gamma mR)	Quarterly	#1 (Palisades)	11.38	10.55	11.0
Outer Ring TLD (gamma mR)	Quarterly	# 2 5.6 miles S	14.60	14.41	14.5
Crops (pCi/kg wet)	I-131	NA	< MDC	< MDC	< MDC
	Other Gamma	NA	< MDC	< MDC	< MDC
Sediment (pCi/kg dry)	Gamma Emitters	NA	< MDC	< MDC	< MDC
Fish (pCi/gm wet)	Gamma Emitters	Palisades	12.3	12.3	12.3
Broad leaf vegetation (pCi/kg wet)	Gamma Emitters	Site Boundary South	51.6	51.6	51.6

ATTACHMENT A

SAMPLE COLLECTION ANOMALIES

Sample Affected	Location	Date	Problem	Evaluation
Palisades Park Samples	Palisades Park	4/31/13	No Samples for April	Due to unseasonably cold weather, Palisades Park wells not started until May 2013. (CR-PLP-2013-1932)
Air Sample Stations	Station 9TP	6/17/13	Loss of Power	During weekly rounds, found no power to 9TP. Power returned the next day. (CR-PLP-2013-2677)
Palisades Park Samples	Palisades Park	10/15/13	No Sample for October	When samples were going to be taken, Park Manager informed site that water was shut off and would remain off until next season. (CR-PLP-2013-4650)
Air Sample Stations	Station 9TP and 8SP	10/29/13	Excessive Canopy	Air Stations 8SP and 9TP determined to have excessive canopy. Trees cleared from 8SP on site. AEP contacted for 9TP canopy. Informed to followup in the spring of 2014. This is being tracked under CA-2 to CR-PLP-2013-4648
Air sample Stations	SSE Quadrant	10/31/13	No air sample station located in the highest D/Q wind direction	It was identified that no air sample station is located in the SSE Quadrant. SIPD was developed and approved. Installation scheduled for 2014. (CR-PLP-2013-4706)
Air Sample Stations	All Four Local Stations	11/17/13	No power to all four local air stations	All four air stations without power due to storm damage. 8SP returned on 11/18/13. All others returned on 11/20/13. (CR-PLP-2013-4928)
Air Sample Station	Station 10GR	11/12/13	No power to air sample station	During filter change out on 11/12/13 it was noted that no power had been on during the entire time period due to construction of which they were unaware. Power was restored on 11/12/13. (CR-PLP-2013-4944)
Environmental TLD	TLD #18	11/14/13	TLD not changed out for the 3 rd quarter.	TLD #18 was not changed out for the 3 rd quarter with the 4 th quarter TLD due to an error by the worker. TLD was changed out at the end of the 4 th quarter. (CR-PLP-2014-2329)

Fish	Control Fish	June/Sept 2013	Control fish not collected or sent in timely fashion	During review of data for this report, no control fish were noted. Vendor informed the site that September 2013 control samples were in his possession, but no June control samples. Samples were shipped immediately to vendor lab for analysis. DC Cook was contacted and was able to provide June indicator samples meeting ODCM requirements. (CR-PLP-2014-2282)
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ATTACHMENT B PALISADES LAND USE CENSUS

2013 Land Use Census Report

The attached tables are the results of the Palisades Land Use Census conducted on October 18, 2013. The first table references the distance from PNP to the nearest residence, garden (greater than 500 square feet), beef cattle, dairy cattle and goat, per meteorological sector. The next table identifies the locations of the nearest residence, garden, beef/dairy cattle and goats within a five (5) mile radius of PNP per meteorological sector. The last table lists the critical receptor locations used to calculate offsite doses by the GASPARD computer program.

Closest Receptor by Sector

Sector	Residence	Garden	Beef Cattle	Dairy Cow	Goat
NNE	1.68	1.75	> 5	> 5	> 5
NE	1.14	1.67	> 5	> 5	> 5
ENE	1.19	2.62	> 5	> 5	2.62
E	1.67	2.68	> 5	> 5	4.25
ESE	0.99	1.83	> 5	> 5	> 5
SE	0.90	1.49	4.27	> 5	> 5
SSE	0.80	0.69	> 5	> 5	> 5
S	0.77	> 5	> 5	> 5	> 5
SSW	0.49	4.82	> 5	> 5	> 5

(Distance is in miles)

Locations

Sector	Location Description	Item	Distance from Plant (miles)
NNE	20275 Pine St	Residence	1.68
	SW corner of 20 th and O fire lane	Garden	1.75
NE	23960 Ruggles Road, State Park Manager	Residence	1.14
	21175 Blue Star Hwy	Garden	1.67
ENE	77198 24 th Avenue	Residence	1.19
	74198 24 th Ave	Garden	2.62
	74198 24 th Ave	Goat	2.62
E	25112 76 th Street	Residence	1.67
	74183 28 th Avenue	Garden	2.68
	71179 28 th Avenue	Goat	4.25
ESE	77555 28 th Ave	Residence	0.99
	28650 76 th Street	Garden	1.83
SE	28563 29 th Ave	Residence	0.9
	30602 77 ½ Street	Garden	1.49
	72401 36 th Ave	Beef Cattle	4.27
SSE	78983 Ravine Way	Residence	0.8
	Palisades Park	Garden	.69

S	79299 Ravine Way, Palisades Park	Residence	0.77
SSW	Shorewood Walk, Palisades Park	Residence	0.49
	Corner of 82 nd and Blue Star Hwy	Garden	4.82

Critical Receptors

Sector	Item	Distance (miles)	X/Q (sec/m ³)	D/Q (1/m ²)
SSE	Site Boundary	0.48	2.31E-6	2.02E-8
SSE	Residence	0.80	1.06E-6	8.72E-9
SSE	Garden	0.69	1.33E-6	1.12E-8
ENE	Goat	2.62	1.15E-7	6.25E-10
SE	Beef Cattle	4.27	8.04E-8	4.54E-10

Goats identified in sectors E and ENE both are on stored feed.

New beef cattle located in SE.

Several smaller gardens were noted in multiple different sectors. These gardens were smaller than the 50 square meters required by CH 6.41.

There are no dairy cows within a five mile radius of PNP.

ATTACHMENT C

**CHEMISTRY PROCEDURE CH 6.10
"RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM"**

Procedure No CH 6.10
Revision 7
Effective Date 1/9/14

PALISADES NUCLEAR PLANT
CHEMISTRY PROCEDURE

TITLE: RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Approved: AGennrich / 12/26/13
Procedure Sponsor Date

Process Applicability Exclusion

New Procedure/Revision Summary:

Editorial, Rev 7

Specific Changes

DRN-13-00711 – Attachment 7 values validated and updated.

DRN-13-01366 – Shipping time requirements set for each sample.

CR-PLP-2013-04746 CA-00004 – Multiple steps changed to reflect current practice and ODCM requirements. Sections labeled to whether or not they are ODCM required, Palisades Park sampling and requirements added to the procedure. Tables updated and corrected for multiple different errors.

Expedited Revision, Rev 6

DRN-13-01210

TITLE: RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

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ATTACHMENTS

- Attachment 1, "Environmental Sample Collection Schedule"
- Attachment 2, "REMP Sample Locations"
- Attachment 3, "Sample Shipment Identification"
- Attachment 4, "Sample Packaging and Shipment"
- Attachment 5, "Environmental Air Sample Data Sheet"
- Attachment 6, "REMP Sample Collection Checklist"
- Attachment 7, "REMP Analytical Requirements"
- Attachment 8, "Environmental Monitoring Locations"

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REFERENCE USE

- **Procedure and Procedure Precautions and Limitations are at the work location for reference.**
- **Review and understand segments before performing any steps.**
- **Signoff steps are completed, when included, before starting the next step.**
- **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."**
- **Review the Procedure to verify segments have been completed.**

1.0 PURPOSE

This procedure provides instructions for collection of environmental samples in support of the Radiological Environmental Monitoring Program (REMP) as required by the Offsite Dose Calculation Manual (ODCM). In addition to the ODCM required samples, additional required sampling is listed.

2.0 REFERENCES

2.1 SOURCE DOCUMENTS

- 2.1.1 Reg Guide 4.15(7)
- 2.1.2 10CFR50, Appendix I
- 2.1.3 Offsite Dose Calculation Manual (ODCM)
- 2.1.4 Branch Technical Position (Revision 1, 1979), "Radiological Portion of the Environmental Monitoring Program"
- 2.1.5 NRC IE Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment"

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2.2 REFERENCE DOCUMENTS

- 2.2.1 Palisades ODCM, Appendix A, Sections III.J, IV.C, and Tables E-1 and E-2
- 2.2.2 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"
- 2.2.3 Chemistry Procedure CH 6.50, "Annual Radiological Environmental Operating Report"
- 2.2.4 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

2.3 COMMITMENTS

- 2.3.1 CMT 022011097, IE Bulletin 80-10 Response - "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment"
- 2.3.2 CMT 032011144, IE Bulletin 80-10 Response - "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment"

3.0 PREREQUISITES

None

4.0 PRECAUTIONS AND LIMITATIONS

- 4.1 Any revisions to this procedure shall be reviewed against Palisades ODCM Specifications to verify compliance to all requirements.
- 4.2 Deviations from the required sampling schedule shall be documented in the Annual Radiological Environmental Operating Report.
- 4.3 Every effort shall be made to complete corrective action on malfunctioning sampling equipment prior to the end of the next sampling period.
- 4.4 If it is not possible to obtain the required samples, suitable alternative media and locations shall be substituted within 30 days.
- 4.5 Samples shall be collected, prepared, and shipped for analysis in a timely manner to ensure detection requirements are met. Other specific handling precautions for sample media are indicated in Section 5.0 as required.

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- 4.6 Any deviation in the Radiological Environmental Monitoring Program including missing samples, unusual analytical results, elevated LLDs, etc, shall be investigated, evaluated, corrected, and documented.
- 4.7 If an air sampling unit is discovered not operating, attempt to find the cause and repair. If this cannot be done, replace applicable component and document on air sample collection data sheet.
- 4.8 Calibrate airflow meters every two years.
- 4.9 Change out airflow meters prior to the expiration of calibration dates.
- 4.10 Change out air sample pumps every two years.
- 4.11 Ensure trees and bushes in the vicinity of air sampler locations are removed, along with any branches extending over the top of the sampler. The goal is to keep every station away from the drip line (with the exception of station 9, which has an existing canopy 50 feet above the station).
- 4.12 In the event that the Radiological Environmental Monitoring Programs sampling are not substantially conducted as described in Palisades ODCM Appendix A, Specification III.J, or an unusual or important event occurs from Plant operation that causes a significant environmental impact or affects a potential environmental impact, a report shall be submitted to the NRC within 30 days.
- 4.13 Record sample collected or shipped in Chemistry Database Management System (NuclearIQ).

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5.0 PROCEDURE

REFERENCE USE
<ul style="list-style-type: none">• Procedure and Procedure Precautions and Limitations are at the work location for reference.• Review and understand segments before performing any steps.• Signoff steps are completed, when included, before starting the next step.• Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."• Review the Procedure to verify segments have been completed.

5.1 LAKE-IN WATER SAMPLE COLLECTION – DAILY – ODCM REQUIRED |
CMT 032011144

- 5.1.1 Fill a 500 ml sample bottle from water downstream of "bio-box" located in the screen house.
- 5.1.2 Add the sample to the composite container (carboy).
- 5.1.3 At end of the month obtain a 1-gallon sample from carboy.
- 5.1.4 Package and ship sample per Attachment 4 within 5 days of sampling. |

5.2 DRINKING WATER SAMPLE COLLECTION – DAILY – ODCM REQUIRED |

- 5.2.1 Obtain a 500 ml sample from any potable water sink.
- 5.2.2 Add the sample to the monthly sample container (carboy).
- 5.2.3 At end of the month obtain a 1-gallon sample from carboy.
- 5.2.4 Package and ship sample per Attachment 4 within 5 days of sampling. |

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5.3 ENVIRONMENTAL AIR SAMPLE COLLECTION – WEEKLY – ODCM REQUIRED |

- 5.3.1 Open cover at air sample station.
- 5.3.2 Determine "As Found Leakage" by blocking air flow and checking air flow meter for movement.
 - a. IF no leakage, THEN mark N in As Found Leakage column on Air Sample Data Sheet.
 - b. IF leakage is indicated, THEN mark Y in As Found Leakage column, determine cause and repair.
- 5.3.3 Remove old sampler assembly.
- 5.3.4 Remove protective cover from new sampler assembly and place on old sampler assembly.
- 5.3.5 Install new sampler assembly.
- 5.3.6 Determine "As Left Leakage" by blocking air flow and checking air flow meter for movement.
 - a. IF no leakage, THEN mark N in As Left Leakage column.
 - b. IF leakage is indicated, THEN determine cause and repair.
- 5.3.7 Record the Flow Meter Cal Due Date, Removed Date, Removed Time, Removed Meter Reading (ft³) and Pump Replacement Date.
- 5.3.8 Close and latch the air sample station cover.
- 5.3.9 Proceed to the next station and continue process.
- 5.3.10 After completing air sample change out, complete the following for each sampler assembly:
 - a. Remove particulate filter and place in glassine envelope.
 - b. Place filter envelope and charcoal cartridge in labeled zip-lock bag.
 - c. Clean out any residue or moisture buildup in sampler head.
 - d. Check condition of O-rings, replace if necessary.

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- 5.3.11 Place new particulate filter (fuzzy side out) and charcoal cartridge in sampler assembly and screw on cap.
- 5.3.12 Place protective cover on sampler assembly.
- 5.3.13 Prepare new air sample packages for following week.
- 5.3.14 Transfer data to vendor Chain of Custody sample data sheet.
 - a. IF volume is less than 100 m³, THEN notify REMP/RETS analyst.

NOTE: Sample volumes as low as 60 m³ have been found to meet LLDs provided there is no delay in shipping and count times are met.

- 5.3.15 WHEN control air sample is obtained, THEN package and ship samples per Attachment 4 within 2 days of sampling.

**5.4 SOUTH HAVEN RAW WATER SAMPLE COLLECTION (SHRAW)
- MONTHLY - ODCM REQUIRED**

NOTE: Water treatment plant personnel add approximately 125 ml of raw water per day to sample containers.

- 5.4.1 Prepare a 1-gallon container labeled "SHRAW," "PAL," month and year.
 - 5.4.2 Drop off container at the South Haven Municipal Water Treatment Plant.
 - 5.4.3 Pick up previous month's container.
 - 5.4.4 Package and ship samples per Attachment 4 within 5 days of obtaining.
- 5.5 BROADLEAF VEGETATION SAMPLE COLLECTION - MONTHLY - ODCM REQUIRED**
- 5.5.1 Validate with REMP/RETS Analyst that the denoted sectors are still the highest D/Q (SE and SSE) and a least prevalent D/Q (NE or NNE).
 - 5.5.2 Obtain 1 kg (2.2 lbs) samples of three different kinds of broadleaf vegetation in both the SE and SSE sectors.
 - 5.5.3 Obtain 1 kg (2.2 lbs) samples of the similar broadleaf vegetation 15 – 30 km (9.3 to 18.6 miles) distant in the NNE or NE sector.

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5.5.4 Obtain samples monthly during growing season.

5.5.5 Package and ship samples per Attachment 4 within 1 day of sampling.

5.6 ENVIRONMENTAL TLD COLLECTION – QUARTERLY – ODCM REQUIRED

5.6.1 Upon receipt of TLDs from the laboratory contractor, inventory all TLDs and place in lead cave.

NOTE: Remove field TLDs from the lead cave only for delivery to their proper locations. All control TLDs remain in the lead cave throughout the entire exposure period.
--

5.6.2 Change-out TLDs at each sample location. The TLD should be displayed so that it is visible from the side and not tucked up under the spherical cap.

5.6.3 For any missing TLDs, then:

- a. Search immediate area.
- b. IF lost TLD is found, THEN collect it and perform standard change out procedure.
- c. IF lost TLD is not found, THEN post the new TLD in proper location.

5.6.4 Store collected field TLDs in lead cave along with control TLDs until ready for mailing to laboratory contractor.

5.6.5 Package and ship samples per Attachment 4 within 1 day of changeout.

5.7 PLANT AIR SAMPLE COLLECTION – QUARTERLY – NON-ODCM REQUIRED

5.7.1 Obtain 1-liter air samples from Air Receiver Tanks T-8A, 8B and 8C.
CMT 0220011097

5.7.2 Count samples for 2000 seconds on MCA.

5.7.3 Review printout and forward to REMP Specialist.

5.8 SEPTIC SYSTEM SAMPLE COLLECTION – QUARTERLY – NON-ODCM REQUIRED

5.8.1 Obtain a 1 liter liquid sample from sanitary system septic tank.

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5.8.2 Count sample for 2000 seconds on MCA.

5.8.3 Package and ship samples per Attachment 4 within 5 days of sampling. |

5.9 FISH SAMPLE COLLECTION – IN SEASON – ODCM REQUIRED |

5.9.1 Precautions

- a. At least one individual in the collection party is required to have Michigan Department of Environmental Quality (MDEQ) Cultural and Scientific Fish Collectors Permit if gill net is used.
- b. IF logistical problems prevent use of a boat to set gill nets from the lake side of Palisades, THEN the nets can be set offshore from the site boundary (by wading). Notify Security prior to using offshore wading method for beach access.

5.9.2 Notify district MDEQ Fisheries biologist prior to sample collection.

5.9.3 Collect samples twice during the season of greatest abundance (typically May through October) as follows:

- a. Collect at least two species of commercially and/or recreationally important fish in the vicinity of the Plant discharge area and the same species in an area not influenced by the Plant discharge (eg, Ludington Pump Storage Plant). One liter of flesh should be collected for each species caught for analysis accuracy.
- b. Normally fish will be collected first from the vicinity of the discharge, then the same species at Ludington control station.

5.9.4 Label all containers with sample type, location, and date.

5.9.5 Package and ship samples per Attachment 4 within two weeks.

5.10 SEDIMENT SAMPLE COLLECTION - SEMIANNUALLY – ODCM REQUIRED |

5.10.1 Collect a 1-liter sediment sample semiannually 1/2 mile north of discharge.

5.10.2 Label containers with sample type, location, and date.

5.10.3 Package and ship samples per Attachment 4 within 5 days of sampling. |

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5.11 FOOD PRODUCT SAMPLE COLLECTION – YEARLY – ODCM REQUIRED

5.11.1 Obtain one sample each of approximately 1 kg each of blueberries and apples from the Arrellanos' store, or other local service in appropriate section.

5.11.2 Label containers with sample type, location, and date.

5.11.3 Package and ship samples per Attachment 4 within 5 days of sampling.

5.12 PALISADES PARK SAMPLES – MONTHLY WHILE IN SERVICE – ODCM REQUIRED

5.12.1 Call Palisades Park Manager (Jim Thornton) at 269-214-2011 to align sampling.

5.12.2 Collect 1 gallon of sample from each well (1 – Community Well, 1 – Commercial Well)

5.12.3 Package and ship samples per Attachment 4 within 5 days of sampling.

5.13 MISCELLANEOUS SAMPLES – ODCM REQUIRED

5.13.1 Ludington - Control Lake-In daily composite samples are collected daily and shipped to Palisades monthly.

5.13.2 Package and ship samples per Attachment 4 within 5 days of receiving.

5.14 MONTHLY SAMPLE COLLECTION VERIFICATION

5.14.1 Attachment 6, "REMP Sample Collection Checklist," may be used to track collection and shipment of Environmental Samples.

5.14.2 Verify that the indicated number and type of samples required by the ODCM were collected.

a. Document any unusual collection conditions or missing samples.

5.14.3 Identify new locations for obtaining replacement samples and add them to the Radiological Environmental Monitoring Program (REMP) within thirty (30) days if milk or fresh leafy vegetable samples become unavailable from one or more of the sample locations. The specific locations from which samples were unavailable may then be deleted from the monitoring program. Identify the cause(s) of sample unavailability and list the new location(s) for obtaining replacement samples in the next Annual Radiological Environmental Operating Report.

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5.15 REVIEW OF SAMPLE ANALYSIS RESULTS

5.15.1 The sample analysis results should be reviewed by the REMP/RETS Analyst upon receipt of the analyses from the laboratory contractor.

5.15.2 Compare the monthly analytical results to the appropriate ODCM requirements (Attachment 7 of this procedure) to verify the following:

- a. The required analyses were performed.
- b. Any results exceeding the action level shall be checked against ODCM Specification reporting requirements.
- c. LLD sensitivity levels were reached. If sample LLDs are not reached, evaluate and document contributing factors.
- d. The action taken if either isotopic action levels and/or NRC reporting levels are exceeded.
- e. Any specific types of evaluation required.
- f. Any action related to unusual or missing sample results.

5.16 AIR FLOW METER CALIBRATION

5.16.1 WHEN Air flow meter calibration due date is approaching, THEN SHIP a spare flow meter for calibration, approximately two weeks in advance to allow for time to calibrate and return. Calibration frequency is currently every two years.

5.16.2 **SHIP** the meter that requires calibration to the following address:

Meter Technology Center
1975 W Parnell Road
Jackson, Mi 49201

5.16.3 Calibration takes place at this facility in accordance with Department of Consumer and Industry Services Public Service Commission Technical Standards for Gas Service and then returned for use.

5.16.4 As found documentation should accompany flow meters back and be retained or submitted as records.

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5.17 SPECIAL REPORT

5.17.1 Prepare and submit to the NRC (within 30 days) a special report identifying the following, if the level of radioactivity as a result of Plant effluents in an environmental sampling medium at a specified location exceeds Palisades ODCM, Appendix A, Table E-2, reporting levels when averaged over any calendar quarter.

- a. The cause(s) for exceeding the limit(s).
- b. Corrective action(s) taken to reduce radioactive effluents.

5.17.2 The NRC Special Report shall be submitted if more than one (1) of the radionuclides listed in the specifications (Palisades ODCM, Appendix A, Table E-2) are detected in an environmental sample medium and:

$$\frac{\text{Concentration (1)}}{\text{Reporting Level (1)}} + \frac{\text{Concentration (2)}}{\text{Reporting Level (2)}} + \dots \geq 1.0$$

The quarterly sum of fractions calculation shall be completed within 90 days of end of quarter.

5.17.3 If radionuclides other than those listed in the specifications (Palisades ODCM, Appendix A, Table E-2), are detected and are the result of Plant effluents, the NRC Special Report shall be submitted if the potential annual dose to a member of the public is equal to or greater than the calendar year limits specifications (Palisades ODCM, Appendix A, III.H, III.C, and III.D). An NRC Special Report is not required if the measured level of radioactivity is not the result of Plant effluents. The condition shall be described in the Annual Radiological Environmental Operating Report.

Under all conditions, any radiological environmental surveillance sample possessing sufficient isotopic activity above the action level where an action level is listed in Attachment 2 but still below ODCM reporting requirements shall be evaluated. If no action level is listed in Attachment 2, any isotopic activity trending up shall be evaluated.

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6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

- 6.1.1 Attachment 1, "Environmental Sample Collection Schedule"
- 6.1.2 Attachment 2, "REMP Sample Locations"
- 6.1.3 Attachment 3, "Sample Shipment Identification"
- 6.1.4 Attachment 4, "Sample Packaging and Shipment"
- 6.1.5 Attachment 5, "Environmental Air Sample Data Sheet"
- 6.1.6 Attachment 6, "REMP Sample Collection Checklist"
- 6.1.7 Attachment 7, "REMP Analytical Requirements"
- 6.1.8 Attachment 8, "Environmental Monitoring Locations"

6.2 RECORDS

- 6.2.1 Analytical Results and Special Reports are included in the Annual Radiological Operating Report (Chemistry Procedure CH 6.50, "Annual Radiological Environmental Operating Report"); this report is sent to Records per Entergy Procedure EN-AD-103, "Document Control and Records Management Programs." Attachment 3, "Sample Shipment Identification," Attachment 5, "Environmental Air Sample Data Sheet," and Attachment 6, "REMP Sample Collection Checklist," are considered guidelines and are not considered to be Plant Records. Sample activities/schedules are listed in Chemistry Database Management System (NuclearIQ) in accordance with Chemistry Procedure 1.5, "Chemistry Logs, Records, and Data Management." NuclearIQ Reports will be generated for submittals in accordance with Entergy Procedure EN-AD-103.

7.0 SPECIAL REVIEWS

None

ENVIRONMENTAL SAMPLE COLLECTION SCHEDULE

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Sample	Number of Samples and Locations	Sample Type	Collection/Analysis Frequency
Airborne Particulates and Iodines	4 within a 10 km radius 1 at 25 – 89 km distant	Continuous at approximately 1 cfm	Weekly
Drinking Water	1 – South Haven Municipal – Raw	Daily 125 sample collection to obtain a one-gallon composite	Monthly
Drinking Water	1 – Plant drinking water	Daily 500 sample collection to obtain a one-gallon composite	Monthly
Lake Surface	1 – Lake In, Screen-house downstream of "bio-box"	Daily 500 sample collection to obtain a one-gallon composite	Monthly
Lake Surface	1 – Control at Ludington	Daily composite to obtain one-gallon sample	Monthly
Sediment	Sediment – ½ mile north of plant	One-liter grab	Semi-annually
Food Products	1 sample each of blueberries and apples	1 kg grab sample	At time of harvest

ENVIRONMENTAL SAMPLE COLLECTION SCHEDULEProc No CH 6.10
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Sample	Number of Samples and Locations	Sample Type	Collection/Analysis Frequency
Food Products	1 sample each of three different kinds of broadleaf vegetation in two sectors near plant boundary 1 – sample of each of similar broadleaf vegetation 15 - 30 km distant (9 to 18 miles)	1 kg grab samples	Monthly during growing season
Fish	2 – location in vicinity of plant discharge 2 – Ludington Control	One-liter of fish flesh from two different species. Obtain same species from control location (if available)	Sample in season or semiannually if they are not seasonal
TLD	9 – General vicinity of Site Boundary 9 – Within 12 km radius 3 – Control Stations	Continuous	Quarterly
Waste Water	1 – Septic system	1 liter grab	Quarterly
Plant Air	3 – T-8A, B & C	1 liter grab	Quarterly
Ground Water	1-Palisades Park Community Well 1-Palisades Park Commercial Well	1 Gallon Carboy from each well	Monthly while wells are in Service

REMP SAMPLE LOCATIONS

Station	Code	Location	Air Part and Iodine	Lake Water	Milk	Food Products	Sediment	TLD	Fish	Ground Water
1	ST	Palisades Nuclear Plant	Onsite, on tree near nw corner of bag crew bldg.	X				X		
1	ST	Palisades Nuclear Plant	Plant discharge area.						X	
2	TH	RR 3 Coloma, MI 5.6 miles S	TLD located on Becht Road, west side on post, 50 yards south of 48 th Ave.					X		
3	HS	76182 48th Ave Covert, MI 5.8 miles SSE	Along 48th Ave, 1/4 mile west of 76th St. In barnyard 50 yds off north side of road.					X		
4	JS	36197 M-140 Hwy Covert, MI 3-1/2 miles SE	Just north of Arellannos fruit stand, in grape arbor.			X		X		
4	JS	36 th Avenue, 1/2 miles east of M-140	South side of road.	X						
5	PR	72723 CR 378 Covert, MI 3-1/2 miles ESE	Along CR 378, 3/4 mile east of M-140, 30 ft off north side of road. TLD located at Paul Rood residence; on tree in back yard just past driveway.	X				X		
6	RB	RR 3 South Haven, MI 4-1/2 miles NE	Along 12th Ave (CR 384), turn nw past maple grove, go 1/4 mile located in orchard on north side of road.					X		
7	SN21	Emergency Siren 21 4.1 miles NNE	On Monroe Blvd, at corner of 76 th and 11th Street.					X		

REMP SAMPLE LOCATIONS

Station	Code	Location	Air Part and Iodine	Lake Water	Milk	Food Products	Sediment	TLD	Fish	Ground Water
8	SP	State Park 1 mile N	Onsite along the dump road, north of Plant. One mile from main gate. Near State Park boundary, on side of road as road turns west.	X				X		
9	TP	Covert Township Park 1.5 miles SSW	Along 32nd Ave, 1/4 mile west of Blue Star Hwy. 5 ft off south side of road. TLD located at end of road, at entrance to residence on beach, attached to emergency siren SN38.	X				X		
10	GR	Grand Rapids, MI 55 miles NNE	Grand Rapids Service Center, in storage area. Air sample on west side near shed. Control TLD 100 feet north of air sample station.	X				X		
11	KZ	Kalamazoo, MI 35 miles E	Kalamazoo Service Center, in parking area on post in SE corner Control TLD.					X		
12	DG	58399 Wilbur Road, Dowagiac, MI 30 miles SSE	TLD located on pole appx 20 yards from road, NE of house.					X		
13	ST	Perimeter of Palisades NNE	Past #8 along dirt road. Proceed west up dune path at right of containment test structure. At first crest, turn north and proceed up adjacent hill to #13 at top (approx 50 yds from crest). Near State Park fence line.					X		
14	ST	Perimeter of Palisades NE	25 yards of east of Station #34 between State Park and DFS Building.					X		
15	ST	Perimeter of Palisades E	North along Blue Star Hwy, 0.75 miles from access road, 10 ft off west side of road.					X		
16	ST	Perimeter of Palisades E	North along Blue Star Hwy, 0.4 miles from access road, 50 ft off west side of road.					X		

REMP SAMPLE LOCATIONS

Station	Code	Location	Air Part and Iodine	Lake Water	Milk	Food Products	Sediment	TLD	Fish	Ground Water
17	ST	Perimeter of Palisades ESE	Along access road, 25 yds south of southern power line, 15 yds off east side of road.					X		
18	ST	Perimeter of Palisades SE	20 yds from access road along south road. 40 yds off south road.					X		
19	ST	Perimeter of Palisades SSE	0.2 miles along south road from access road, 30 ft off north side of road.					X		
20	ST	Perimeter of Palisades S	0.4 miles along south road from access road, 20 ft off south side of road.					X		
21	ST	Perimeter of Palisades SSW	0.7 miles along south road from access road, just past top of hill. Near Lake Michigan Bluff.					X		
22	PW	Palisades Warehouse	Control TLD in lead cave.					X		
23	SN19	Emergency Siren 19 3 miles ENE	On CR 380.					X		
24	SN26	Emergency Siren 26 6 miles E	On 67th Street.					X		
25	SH	South Haven, MI 5-1/2 miles NNE	South Haven Water Treatment Plant.		X					
30	STN	1/2 mile N of discharge					X			
32	LP	Ludington Pumped Storage 125 Miles N			X				X	

SAMPLE SHIPMENT IDENTIFICATION

Palisades

Location	Type	Date	Amount	Remarks
South Haven	Raw Water	Monthly Composite -	1 Gallon	
Lake In	Lake Water	Monthly Composite -	1 Gallon	
Plant Drinking Water	Domestic Water	Monthly Composite -	1 Gallon	
Ludington - Lake	Control Sample	Monthly Composite -	1 Gallon	
½ mile N of Plant	Sediment		1 Liter	
Sanitary Wastewater	Wastewater		1 liter	
Palisades Perimeter	Vegetation		6 kg	
Control	Vegetation		3 kg	
Arellannos Market	Blueberries		1 kg	
Arellannos Market	Apples		1 kg	
Palisades	Fish		1 kg	
Control	Fish		1 kg	
Palisades Park - Community Well	Drinking Water		1 Gallon	
Palisades Park - Commercial Well	Drinking Water		1 Gallon	

This form is not required to be retained as a quality record.

SAMPLE PACKAGING AND SHIPMENT

1. Label samples clearly as to their contents.
2. Seal liquid sample containers with tape to prevent leakage.
3. Use sufficient packing material to avoid sample container damage during shipment.
4. Package air filters in glassine or plastic envelopes.
5. For TLD shipments, ensure that vendor's shipment instructions are followed.
6. Ship samples to vendor laboratory with minimal delay after collection so as to avoid elevated analytical levels of detection.
7. Record sample information on Attachment 3, "Sample Shipment Identification," or Attachment 5, "Environmental Air Sample Data Sheet," or per vendor's instructions as applicable. Include applicable form with shipment.

ENVIRONMENTAL AIR SAMPLE DATA SHEET

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PALISADES

A/S Station	As Found Leakage (Y / N)	As Left Leakage (Y / N)	Removed Date	Removed Time	Flow Meter Reading (ft ³)	Flow Meter Cal Due Date	Pump Replacement Date
8SP							
9TP							
4JS							
5PR							
GR10							

Comments _____

Completed By _____ Date _____

Reviewed By _____ Date _____

This form is not required to be retained as a quality record.

REMP SAMPLE COLLECTION CHECKLIST

Month _____ Year _____

	Collected	Shipped
WEEKLY		
Air Samples		
Week 1	_____	_____
Week 2	_____	_____
Week 3	_____	_____
Week 4	_____	_____
Week 5	_____	_____
MONTHLY		
Broadleaf Veg	_____	_____
Lake In	_____	_____
Drinking Water	_____	_____
SHRAW	_____	_____
Ludington Ctrl	_____	_____
Palisades Park	_____	_____

This form is not required to be retained as a quality record.

REMP SAMPLE COLLECTION CHECKLIST

Year _____

	Collected	Shipped
QUARTERLY		
TLDs		
1Q	_____	_____
2Q	_____	_____
3Q	_____	_____
4Q	_____	_____
Sanitary Wastewater		
1Q	_____	_____
2Q	_____	_____
3Q	_____	_____
4Q	_____	_____
Plant Air		
1Q	_____	_____
2Q	_____	_____
3Q	_____	_____
4Q	_____	_____
SEMI-ANNUAL		
Sediment		
1	_____	_____
2	_____	_____
Fish – Indicator		
1	_____	_____
2	_____	_____
Fish – Control		
1	_____	_____
2	_____	_____
ANNUAL		
Blueberries	_____	_____
Apples	_____	_____

This form is not required to be retained as a quality record.

REMP ANALYTICAL REQUIREMENTS

<u>Media</u>	<u>Sampling Interval</u>	<u>Required Analysis</u>	<u>LLD</u>	<u>NRC^f Reporting Levels</u>	<u>Unusual Results^h</u>		
					<u>Action Level</u>	<u>Action Required</u>	
Direct by TLD	Quarterly	Gamma Dose	10 mR				
Air Gaseous	Weekly	I-131	0.07 pCi/m ³	0.9 pCi/m ³	0.2 pCi/m ³	Notify	
Air Particulate	Weekly	Gross Beta Gamma ^{a,j} Cs-134 Cs-137	0.01 pCi/m ³ 0.05 pCi/m ³ 0.06 pCi/m ³	10 pCi/m ³ 20 pCi/m ³	See note g 5 pCi/m ³ 5 pCi/m ³	Notify and perform gamma isotopic.	
Water Surface Drinking	Monthly	H-3 ⁱ	2000 pCi/L	20,000 pCi/L	1000 pCi/L	Notify Notify within 24 h if beta ≥ 10 pCi/L. Perform gamma analysis.	
		Gross Beta Gamma ^{a,j}	4 pCi/L		10 pCi/L		
		Mn-54	15 pCi/L	1000 pCi/L		Any gamma ≥ 30 pCi/L	Notify
		Fe-59	30 pCi/L	400 pCi/L			
		Co-58	15 pCi/L	1000 pCi/L			
		Co-60	15 pCi/L	300 pCi/L			
		Zn-65	30 pCi/L	300 pCi/L			
		Zr-95	30 pCi/L	400 pCi/L			
		Nb-95	15 pCi/L	400 pCi/L			
		Cs-134	15 pCi/L	30 pCi/L			
Cs-137	18 pCi/L	50 pCi/L					
BaLa-140	15 pCi/L	200 pCi/L					
I-131	1 pCi/L	2 pCi/L		2 pCi/L	Notify		
Sediment	Semiannual	Gamma ⁱ Cs-134 Cs-137	150 pCi/g 180 pCi/g		Any gamma ≥ 1 pCi/g	Notify	

REMP ANALYTICAL REQUIREMENTS

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<u>Media</u>	<u>Sampling Interval</u>	<u>Required Analysis</u>	<u>LLD</u>	<u>NRC^f Reporting Levels</u>	<u>Unusual Results^h</u>	
					<u>Action Level</u>	<u>Action Required</u>
Fish	Semiannual	Gamma ^j Mn-54 Fe-59 Co-58 Co-60 Zn-65 Cs-134 Cs-137	0.13 pCi/g 0.26 pCi/g 0.13 pCi/g 0.13 pCi/g 0.26 pCi/g 0.13 pCi/g 0.15 pCi/g	30 pCi/g 10 pCi/g 30 pCi/g 10 pCi/g 20 pCi/g 1 pCi/g 2 pCi/g	Any gamma ≥1 pCi/g	Notify
Broad Leaf Vegetation	Monthly when available	I-131 Gamma ^j Cs-134 Cs-137	0.06 pCi/g 0.08 pCi/g 0.08 pCi/g	0.1 pCi/g 1 pCi/g 2 pCi/g	0.1 pCi/g Any gamma ≥1 pCi/g >146 pCi/g*	Notify Notify
Food Products	At time of harvest	Gamma ^j Cs-134 Cs-137 I-131	0.08 pCi/g 0.08 pCi/g 0.06 pCi/g	1 pCi/g 2 pCi/g 0.1 pCi/g	Any gamma ≥1 pCi/g 0.1 pCi/g	Notify Notify
Palisades Park	Monthly while wells are in operation	H-3 ⁱ Gross Beta Gamma ^{aj} Mn-54 Fe-59 Co-58 Co-60 Zn-65 Zr-95 Nb-95 Cs-134 Cs-137 BaLa-140 I-131	2000 pCi/L 4 pCi/L 15 pCi/L 30 pCi/L 15 pCi/L 15 pCi/L 30 pCi/L 30 pCi/L 30 pCi/L 15 pCi/L 15 pCi/L 18 pCi/L 15 pCi/L 1 pCi/L	20,000 pCi/L 1000 pCi/L 400 pCi/L 1000 pCi/L 300 pCi/L 300 pCi/L 400 pCi/L 400 pCi/L 400 pCi/L 30 pCi/L 50 pCi/L 200 pCi/L 2 pCi/L	1000 pCi/L 10 pCi/L Any gamma ≥30 pCi/L 2 pCi/L	Notify Notify within 24 h if beta ≥10 pCi/L. Perform gamma analysis. Notify Notify

REMP ANALYTICAL REQUIREMENTS

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^aSupplementary analysis only.

^dRadioactivity levels may cause LLD levels to be exceeded.

^eMonthly composite of weekly filters.

^fReporting levels per ODCM, Appendix A, Section III.J and Table E-2.

^gIf gross beta activity is greater than or equal to 1 pCi/m³ or greater than or equal to ten times last years mean of control samples, perform gamma analysis on the individual samples.

^hWhenever the Unusual Results Action Level is reached or exceeded, the word "Notify" under the Action Required column signifies that the Contract Laboratory performing the analysis is required to notify Palisades.

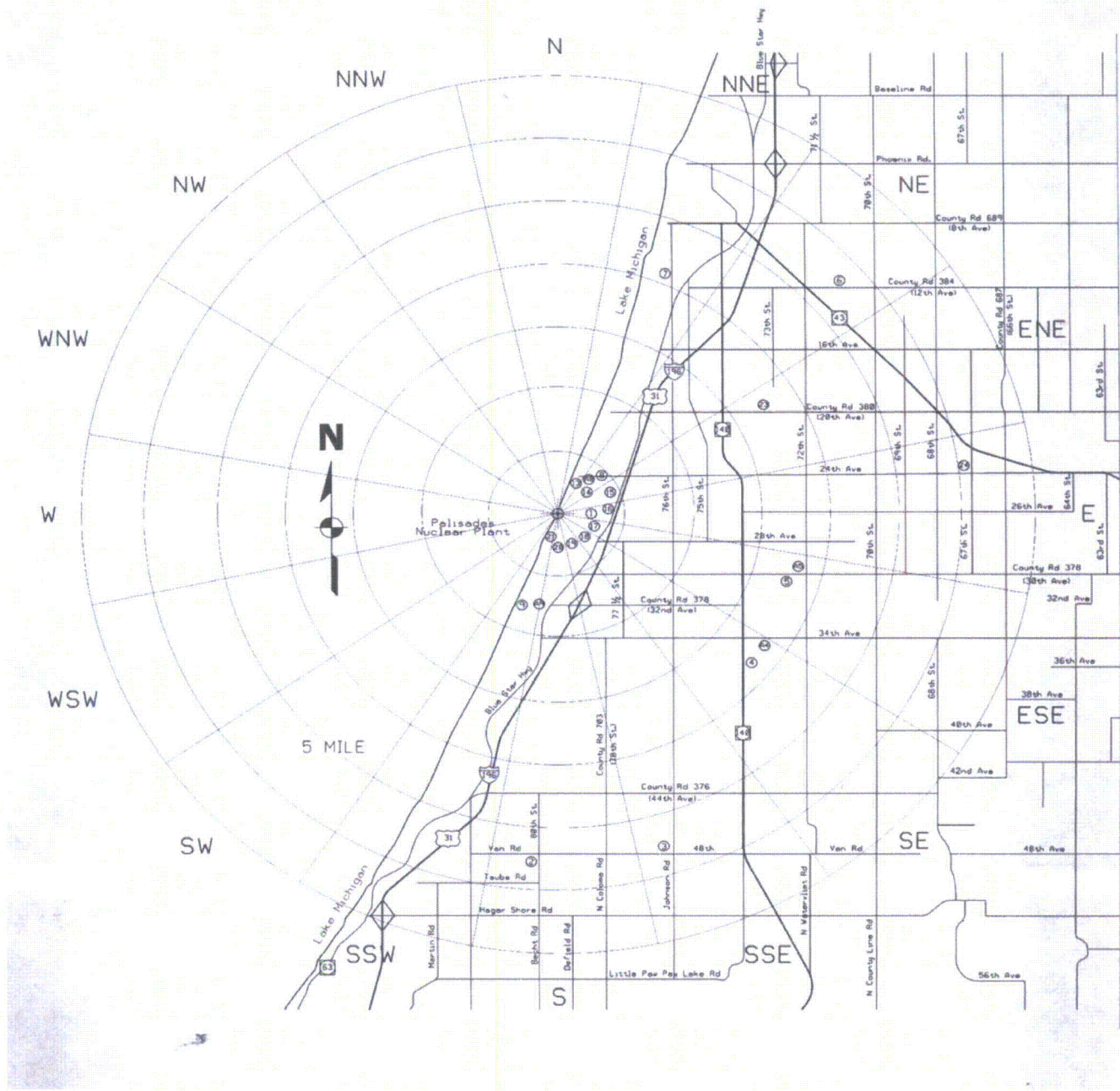
ⁱNot required for South Haven raw water sample.

^jGamma isotopic analysis means the identification and quantification of gamma emitting radionuclides that may be attributable to the effluents from the facility.

* Acceptance is < Average Background concentration plus 1 Standard Deviation. Current Values Documented in WT-WTPLP-2013-00125.

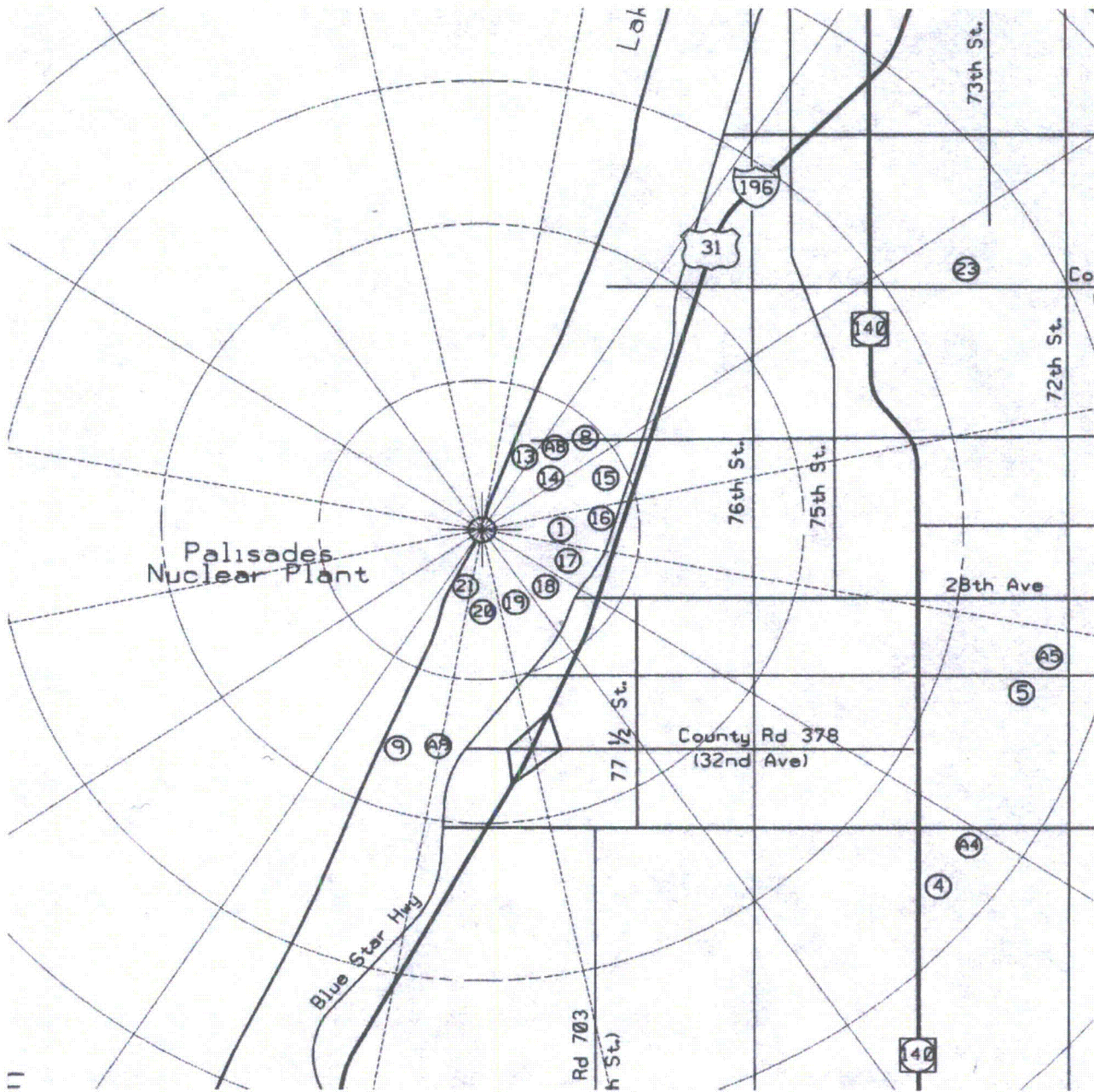
ENVIRONMENTAL MONITORING LOCATIONS

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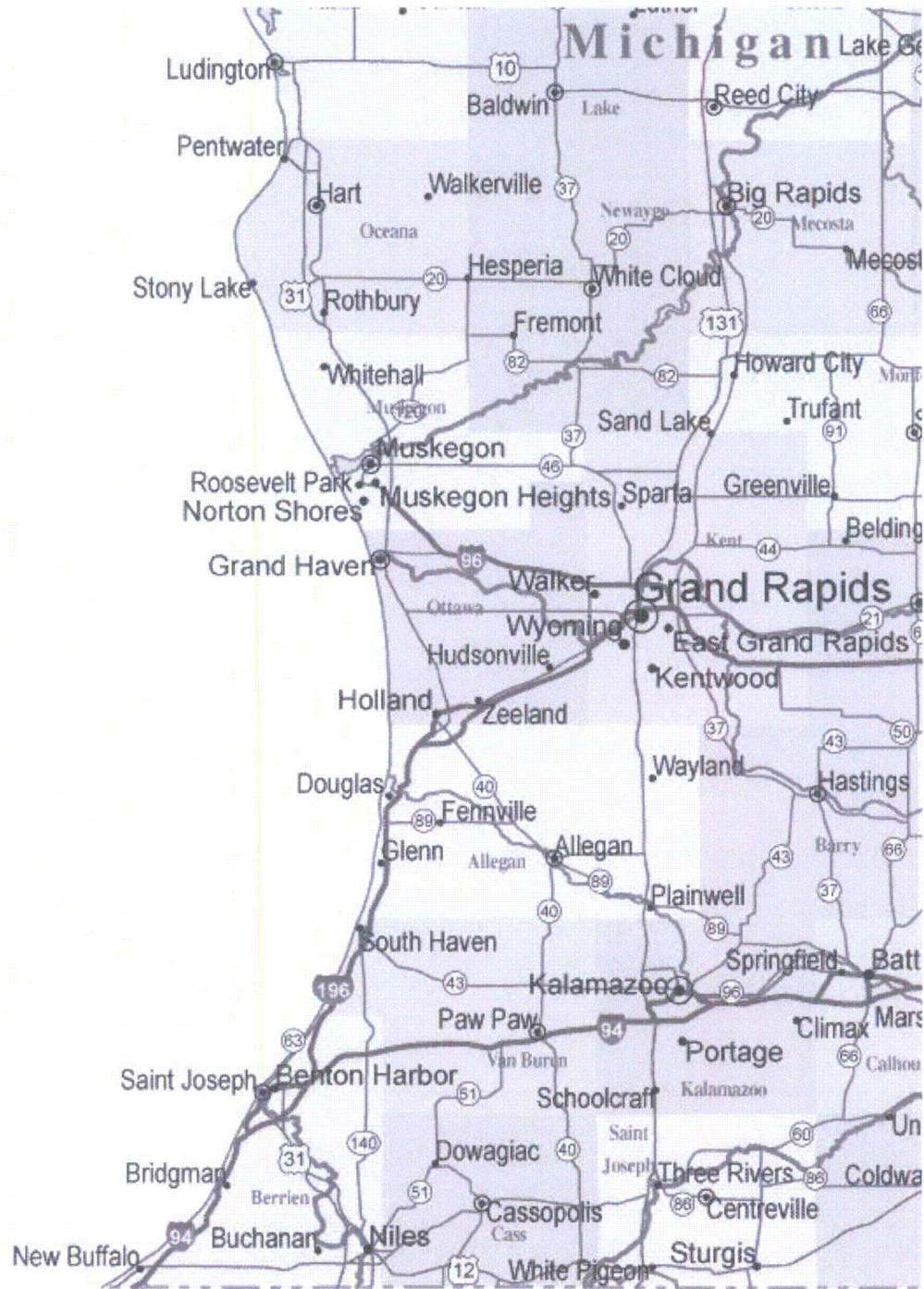


ENVIRONMENTAL MONITORING LOCATIONS

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ENVIRONMENTAL MONITORING LOCATIONS



ENVIRONMENTAL MONITORING LOCATIONS

TLDs

Location	Coordinates	Distance (mi)	Degrees	Sector
Stack	N 42 19 23.5 W 86 18 51.6			
1	N 42 19 20.7 W 86 18 36.1	0.507	96.09	E
Inner Ring				
13	N 42 19 47.2 W 86 18 34.1	0.518	28.62	NNE
8	N 42 19 46.8 W 86 18 24.0	0.594	41.21	NE
14	N 42 19 41.1 W 86 18 21.2	0.548	51.93	NE
15	N 42 19 42.3 W 86 17 58.1	0.838	64.94	ENE
16	N 42 19 28.0 W 86 17 54.6	0.814	83.9	E
17	N 42 19 10.5 W 86 18 13.9	0.590	114.98	ESE
18	N 42 19 4.2 W 86 18 28.9	0.491	138.96	SE
19	N 42 19 0.9 W 86 18 39.7	0.465	158.69	SSE
20	N 42 19 1.1 W 86 18 48.8	0.432	174.42	S
21	N 42 19 3.4 W 86 18 58.4	0.397	194.02	SSW
Outer Ring				
7	N 42 22 40.8 W 86 17 0.4	4.102	22.6	NNE
6	N 42 22 30.6 W 86 14 15.9	5.309	47.42	NE
23	N 42 20 44.7 W 86 15 35.3	3.191	60.75	ENE
24	N 42 19 59.4 W 86 11 49.4	6.029	83.4	E
5	N 42 18 27.6 W 86 14 57.5	3.491	107.87	ESE
4	N 42 17 10.8 W 86 15 43.5	3.690	133.63	SE
3	N 42 14 38.0 W 86 16 59.7	5.704	163.82	SSE
2	N 42 14 33.4 W 86 19 16.4	5.578	183.62	S

ENVIRONMENTAL MONITORING LOCATIONS

9	N 42 18 1.6 W 86 19 34.6	1.686	201.22	SSW
Control TLDs				
10	N 42 53 16.5 W 85 40 36.1	50.727	39.51	NE
11	N 42 15 24.4 W 85 32 49.4	39.749	96.42	E
12	N 41 56 54.3 W 86 6 24.5	27.989	157.61	SSE

TLD # 10 is located within the Consumers Energy Grand Rapids service facility attached to a pole located adjacent to the south fence.

TLD # 11 is located within the Consumers Energy Kalamazoo service facility attached to a pole in the far NE corner of the facility – past the employee parking lot.

TLD # 12 is located approximately 30 yards from the road, NE and next to a private residence located at 58399 Wilbur Road, Dowagiac, MI.

Air Sample Stations

Location	Coordinates	Distance (mi)	Degrees	Sector
A8 (State Park)	N 42 19 46.8 W 86 18 24.8	0.587	40.38	NE
A9 (Township Park)	N 42 18 4.6 W 86 19 11.2	1.539	190.40	S
A4 (Covert)	N 42 17 12.1 W 86 15 21.7	3.903	130.22	SE
A5 (Rood)	N 42 18 30.5 W 86 14 47.8	5.804	106.36	ESE
A10 (Grand Rapids)	N 42 53 16.5 W 85 40 36.1	50.727	39.51	NE

Air Sample Station # 10 is located within the Consumers Energy Grand Rapids service facility, south side, next to a small service building and due East of TLD # 10.

Control fish and water samples are obtained from the Consumers Energy Pump Storage Facility located in Ludington, MI.

ATTACHMENT D

**YEAR-END REPORT FOR PALISADES
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)
AS PROVIDED BY GEL LABORATORIES, LLC**

40 Pages Follow

**REMP Year End Report for PALI for 2013
Palisades REMP**

10GR
AC

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
10GR(318593010) - AC	5-Jan-13	Iodine-131	1.56E-02	2.32E-02	4.06E-02	7.00E-02	2.43E-02	pCi/m3
10GR(319095010) - AC	11-Jan-13	Iodine-131	6.60E-03	1.66E-02	2.98E-02	7.00E-02	1.68E-02	pCi/m3
10GR(319500010) - AC	18-Jan-13	Iodine-131	3.13E-03	2.04E-02	3.42E-02	7.00E-02	2.04E-02	pCi/m3
10GR(320028010) - AC	25-Jan-13	Iodine-131	-8.41E-04	2.59E-02	4.21E-02	7.00E-02	2.59E-02	pCi/m3
10GR(320344010) - AC	1-Feb-13	Iodine-131	-2.06E-03	2.78E-02	4.61E-02	7.00E-02	2.78E-02	pCi/m3
10GR(320739010) - AC	8-Feb-13	Iodine-131	-2.72E-03	3.76E-02	6.18E-02	7.00E-02	3.77E-02	pCi/m3
10GR(321125010) - AC	15-Feb-13	Iodine-131	-7.18E-03	1.59E-02	2.44E-02	7.00E-02	1.63E-02	pCi/m3
10GR(321555010) - AC	22-Feb-13	Iodine-131	-3.74E-03	1.78E-02	2.92E-02	7.00E-02	1.79E-02	pCi/m3
10GR(322064010) - AC	1-Mar-13	Iodine-131	-1.55E-02	1.94E-02	3.07E-02	7.00E-02	2.07E-02	pCi/m3
10GR(322433010) - AC	8-Mar-13	Iodine-131	-7.92E-03	1.93E-02	3.10E-02	7.00E-02	1.97E-02	pCi/m3
10GR(322772010) - AC	14-Mar-13	Iodine-131	-1.86E-03	2.23E-02	3.67E-02	7.00E-02	2.23E-02	pCi/m3
10GR(323177010) - AC	21-Mar-13	Iodine-131	7.69E-03	1.83E-02	3.28E-02	7.00E-02	1.87E-02	pCi/m3
10GR(323816010) - AC	28-Mar-13	Iodine-131	7.00E-03	1.61E-02	2.89E-02	7.00E-02	1.64E-02	pCi/m3
10GR(324140010) - AC	5-Apr-13	Iodine-131	9.01E-03	1.93E-02	3.49E-02	7.00E-02	1.97E-02	pCi/m3
10GR(324517010) - AC	12-Apr-13	Iodine-131	-2.22E-02	3.29E-02	4.88E-02	7.00E-02	3.45E-02	pCi/m3
10GR(325084010) - AC	19-Apr-13	Iodine-131	1.20E-02	1.85E-02	3.41E-02	7.00E-02	1.93E-02	pCi/m3
10GR(325530010) - AC	26-Apr-13	Iodine-131	-1.05E-02	2.63E-02	4.10E-02	7.00E-02	2.68E-02	pCi/m3
10GR(325757010) - AC	3-May-13	Iodine-131	-1.64E-02	2.19E-02	3.21E-02	7.00E-02	2.32E-02	pCi/m3
10GR(326261010) - AC	10-May-13	Iodine-131	-4.00E-03	1.86E-02	3.03E-02	7.00E-02	1.87E-02	pCi/m3
10GR(326788010) - AC	17-May-13	Iodine-131	1.99E-02	3.04E-02	3.22E-02	7.00E-02	3.04E-02	pCi/m3
10GR(327066010) - AC	25-May-13	Iodine-131	2.03E-04	1.31E-02	2.25E-02	7.00E-02	1.31E-02	pCi/m3
10GR(327718010) - AC	1-Jun-13	Iodine-131	9.01E-03	3.65E-02	6.21E-02	7.00E-02	3.67E-02	pCi/m3
10GR(328060010) - AC	7-Jun-13	Iodine-131	-5.86E-03	2.87E-02	4.52E-02	7.00E-02	2.88E-02	pCi/m3
10GR(328487010) - AC	14-Jun-13	Iodine-131	-1.54E-02	1.61E-02	2.39E-02	7.00E-02	1.76E-02	pCi/m3
10GR(328783010) - AC	22-Jun-13	Iodine-131	1.02E-02	1.75E-02	3.07E-02	7.00E-02	1.81E-02	pCi/m3
10GR(329313010) - AC	28-Jun-13	Iodine-131	3.38E-02	3.42E-02	5.69E-02	7.00E-02	3.75E-02	pCi/m3
10GR(329926010) - AC	4-Jul-13	Iodine-131	-6.48E-04	4.66E-02	6.80E-02	7.00E-02	4.66E-02	pCi/m3
10GR(330260010) - AC	12-Jul-13	Iodine-131	-1.77E-02	2.41E-02	3.36E-02	7.00E-02	2.54E-02	pCi/m3
10GR(330603010) - AC	19-Jul-13	Iodine-131	-4.17E-03	3.17E-02	5.28E-02	7.00E-02	3.17E-02	pCi/m3
10GR(331352010) - AC	26-Jul-13	Iodine-131	-2.38E-03	2.02E-02	3.37E-02	7.00E-02	2.02E-02	pCi/m3
10GR(331619010) - AC	2-Aug-13	Iodine-131	5.10E-03	2.93E-02	5.15E-02	7.00E-02	2.94E-02	pCi/m3
10GR(332040010) - AC	9-Aug-13	Iodine-131	-2.78E-03	4.17E-02	6.97E-02	7.00E-02	4.17E-02	pCi/m3
10GR(332587010) - AC	16-Aug-13	Iodine-131	-1.47E-02	1.96E-02	2.68E-02	7.00E-02	2.07E-02	pCi/m3
10GR(332969010) - AC	23-Aug-13	Iodine-131	-2.27E-02	2.59E-02	3.25E-02	7.00E-02	2.79E-02	pCi/m3
10GR(333292010) - AC	30-Aug-13	Iodine-131	-3.35E-05	2.75E-02	4.61E-02	7.00E-02	2.75E-02	pCi/m3
10GR(333885010) - AC	6-Sep-13	Iodine-131	-2.77E-02	3.19E-02	4.49E-02	7.00E-02	3.44E-02	pCi/m3
10GR(334263010) - AC	13-Sep-13	Iodine-131	1.75E-03	2.18E-02	3.62E-02	7.00E-02	2.18E-02	pCi/m3
10GR(334594010) - AC	20-Sep-13	Iodine-131	-1.01E-02	2.47E-02	3.98E-02	7.00E-02	2.51E-02	pCi/m3
10GR(335437010) - AC	27-Sep-13	Iodine-131	1.93E-02	3.52E-02	6.37E-02	7.00E-02	3.64E-02	pCi/m3
10GR(335881010) - AC	4-Oct-13	Iodine-131	2.55E-04	3.75E-02	6.30E-02	7.00E-02	3.75E-02	pCi/m3
10GR(336456010) - AC	10-Oct-13	Iodine-131	1.07E-03	3.07E-02	5.28E-02	7.00E-02	3.07E-02	pCi/m3
10GR(336503010) - AC	17-Oct-13	Iodine-131	9.25E-03	1.53E-02	2.75E-02	7.00E-02	1.59E-02	pCi/m3

**REMP Year End Report for PALI for 2013
Palisades REMP**

10GR(337170010) - AC	25-Oct-13	Iodine-131	4.02E-03	3.65E-02	6.30E-02	7.00E-02	3.65E-02	pCi/m3
10GR(337719010) - AC	2-Nov-13	Iodine-131	-3.89E-04	2.46E-02	4.22E-02	7.00E-02	2.46E-02	pCi/m3
10GR(338558010) - AC	11-Nov-13	Iodine-131	2.09E-03	4.02E-02	6.61E-02	7.00E-02	4.02E-02	pCi/m3
10GR(338706010) - AC	21-Nov-13	Iodine-131	-7.59E-03	3.76E-02	6.33E-02	7.00E-02	3.77E-02	pCi/m3
10GR(339271010) - AC	28-Nov-13	Iodine-131	-2.90E-03	2.06E-02	3.33E-02	7.00E-02	2.07E-02	pCi/m3
10GR(339885010) - AC	5-Dec-13	Iodine-131	1.89E-02	2.64E-02	5.17E-02	7.00E-02	2.78E-02	pCi/m3
10GR(340557010) - AC	12-Dec-13	Iodine-131	5.23E-03	3.63E-02	6.30E-02	7.00E-02	3.63E-02	pCi/m3
10GR(340558010) - AC	21-Dec-13	Iodine-131	5.94E-03	2.28E-02	4.02E-02	7.00E-02	2.30E-02	pCi/m3
10GR(341372011) - AC	30-Dec-13	Iodine-131	7.54E-03	1.72E-02	3.03E-02	7.00E-02	1.76E-02	pCi/m3

10GR
AP

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
10GR(318593005) - AP	5-Jan-13	BETA	9.11E-02	9.63E-03	2.70E-03	1.00E-02	9.81E-03	pCi/m3
10GR(319095005) - AP	11-Jan-13	BETA	6.26E-02	7.30E-03	2.05E-03	1.00E-02	7.41E-03	pCi/m3
10GR(319500005) - AP	18-Jan-13	BETA	5.31E-02	6.81E-03	2.09E-03	1.00E-02	6.90E-03	pCi/m3
10GR(320028005) - AP	25-Jan-13	BETA	5.34E-02	7.30E-03	2.43E-03	1.00E-02	7.38E-03	pCi/m3
10GR(320344005) - AP	1-Feb-13	BETA	5.17E-02	6.22E-03	1.89E-03	1.00E-02	6.31E-03	pCi/m3
10GR(320739005) - AP	8-Feb-13	BETA	5.37E-02	7.41E-03	2.61E-03	1.00E-02	7.49E-03	pCi/m3
10GR(321125005) - AP	15-Feb-13	BETA	3.96E-02	5.49E-03	1.98E-03	1.00E-02	5.55E-03	pCi/m3
10GR(321555005) - AP	22-Feb-13	BETA	2.11E-02	4.40E-03	2.16E-03	1.00E-02	4.42E-03	pCi/m3
10GR(322064005) - AP	1-Mar-13	BETA	2.92E-02	5.12E-03	2.36E-03	1.00E-02	5.15E-03	pCi/m3
10GR(322433005) - AP	8-Mar-13	BETA	3.49E-02	5.94E-03	2.40E-03	1.00E-02	5.98E-03	pCi/m3
10GR(322772005) - AP	14-Mar-13	BETA	4.03E-02	6.12E-03	2.44E-03	1.00E-02	6.18E-03	pCi/m3
10GR(323177005) - AP	21-Mar-13	BETA	2.60E-02	4.80E-03	2.14E-03	1.00E-02	4.83E-03	pCi/m3
10GR(323816005) - AP	28-Mar-13	BETA	3.26E-02	5.43E-03	2.22E-03	1.00E-02	5.47E-03	pCi/m3
10GR(324140005) - AP	5-Apr-13	BETA	4.23E-02	5.70E-03	1.95E-03	1.00E-02	5.77E-03	pCi/m3
10GR(324517005) - AP	12-Apr-13	BETA	3.28E-02	5.90E-03	2.53E-03	1.00E-02	5.93E-03	pCi/m3
10GR(325084005) - AP	19-Apr-13	BETA	3.68E-02	5.32E-03	1.83E-03	1.00E-02	5.37E-03	pCi/m3
10GR(325530005) - AP	26-Apr-13	BETA	4.35E-02	6.81E-03	2.55E-03	1.00E-02	6.86E-03	pCi/m3
10GR(325757005) - AP	3-May-13	BETA	4.52E-02	6.02E-03	1.95E-03	1.00E-02	6.09E-03	pCi/m3
10GR(326261005) - AP	10-May-13	BETA	3.00E-02	5.69E-03	2.60E-03	1.00E-02	5.72E-03	pCi/m3
10GR(326788005) - AP	17-May-13	BETA	3.59E-02	5.42E-03	2.12E-03	1.00E-02	5.46E-03	pCi/m3
10GR(327066005) - AP	25-May-13	BETA	3.22E-02	4.75E-03	1.82E-03	1.00E-02	4.79E-03	pCi/m3
10GR(327718005) - AP	1-Jun-13	BETA	2.77E-02	6.25E-03	3.43E-03	1.00E-02	6.28E-03	pCi/m3
10GR(328060005) - AP	7-Jun-13	BETA	3.29E-02	5.90E-03	2.68E-03	1.00E-02	5.94E-03	pCi/m3
10GR(328487005) - AP	14-Jun-13	BETA	4.49E-02	6.12E-03	2.27E-03	1.00E-02	6.18E-03	pCi/m3
10GR(328783005) - AP	22-Jun-13	BETA	4.08E-02	5.72E-03	2.12E-03	1.00E-02	5.78E-03	pCi/m3
10GR(329313005) - AP	28-Jun-13	BETA	2.63E-02	6.07E-03	3.42E-03	1.00E-02	6.09E-03	pCi/m3
10GR(329926005) - AP	4-Jul-13	BETA	4.04E-02	6.17E-03	2.34E-03	1.00E-02	6.23E-03	pCi/m3
10GR(330260005) - AP	12-Jul-13	BETA	3.70E-02	5.18E-03	1.70E-03	1.00E-02	5.24E-03	pCi/m3
10GR(330603005) - AP	19-Jul-13	BETA	4.87E-02	7.95E-03	3.44E-03	1.00E-02	8.01E-03	pCi/m3
10GR(331352005) - AP	26-Jul-13	BETA	2.09E-02	4.18E-03	1.89E-03	1.00E-02	4.20E-03	pCi/m3
10GR(331619005) - AP	2-Aug-13	BETA	4.12E-02	6.66E-03	2.50E-03	1.00E-02	6.71E-03	pCi/m3
10GR(332040005) - AP	9-Aug-13	BETA	3.34E-02	5.11E-03	1.92E-03	1.00E-02	5.16E-03	pCi/m3

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10GR(332587005) - AP	16-Aug-13	BETA	3.74E-02	6.48E-03	2.64E-03	1.00E-02	6.53E-03	pCi/m3
10GR(332969005) - AP	23-Aug-13	BETA	5.82E-02	6.72E-03	1.91E-03	1.00E-02	6.83E-03	pCi/m3
10GR(333292005) - AP	30-Aug-13	BETA	4.87E-02	6.84E-03	2.33E-03	1.00E-02	6.91E-03	pCi/m3
10GR(333885005) - AP	6-Sep-13	BETA	4.52E-02	6.82E-03	2.53E-03	1.00E-02	6.88E-03	pCi/m3
10GR(334263005) - AP	13-Sep-13	BETA	5.18E-02	6.40E-03	2.11E-03	1.00E-02	6.49E-03	pCi/m3
10GR(334594005) - AP	20-Sep-13	BETA	3.17E-02	5.94E-03	2.84E-03	1.00E-02	5.97E-03	pCi/m3
10GR(335437005) - AP	27-Sep-13	BETA	3.70E-02	5.49E-03	2.04E-03	1.00E-02	5.54E-03	pCi/m3
10GR(335881005) - AP	4-Oct-13	BETA	3.99E-02	6.04E-03	2.41E-03	1.00E-02	6.10E-03	pCi/m3
10GR(336456005) - AP	10-Oct-13	BETA	4.47E-02	5.89E-03	1.85E-03	1.00E-02	5.96E-03	pCi/m3
10GR(336503005) - AP	17-Oct-13	BETA	3.38E-02	5.08E-03	1.80E-03	1.00E-02	5.12E-03	pCi/m3
10GR(337170005) - AP	25-Oct-13	BETA	2.12E-02	3.79E-03	1.70E-03	1.00E-02	3.81E-03	pCi/m3
10GR(337719005) - AP	2-Nov-13	BETA	3.41E-02	5.17E-03	2.00E-03	1.00E-02	5.22E-03	pCi/m3
10GR(338558005) - AP	11-Nov-13	BETA	3.73E-02	5.84E-03	2.09E-03	1.00E-02	5.89E-03	pCi/m3
10GR(338706005) - AP	21-Nov-13	BETA	3.99E-02	1.00E-02	5.37E-03	1.00E-02	1.00E-02	pCi/m3
10GR(339271005) - AP	28-Nov-13	BETA	5.87E-02	7.12E-03	2.11E-03	1.00E-02	7.22E-03	pCi/m3
10GR(339885005) - AP	5-Dec-13	BETA	4.79E-02	5.98E-03	1.79E-03	1.00E-02	6.05E-03	pCi/m3
10GR(340557005) - AP	12-Dec-13	BETA	5.40E-02	6.30E-03	1.77E-03	1.00E-02	6.40E-03	pCi/m3
10GR(340558005) - AP	21-Dec-13	BETA	4.08E-02	4.54E-03	1.22E-03	1.00E-02	4.61E-03	pCi/m3
10GR(341372005) - AP	30-Dec-13	BETA	4.96E-02	5.65E-03	1.47E-03	1.00E-02	5.74E-03	pCi/m3
10GR(323975005) - AP	2-Feb-13	Beryllium-7	1.22E-01	2.72E-02	2.31E-02		2.94E-02	pCi/m3
10GR(329805005) - AP	3-May-13	Beryllium-7	1.13E-01	2.11E-02	1.30E-02		2.33E-02	pCi/m3
10GR(335792005) - AP	2-Aug-13	Beryllium-7	1.26E-01	1.66E-02	1.11E-02		2.13E-02	pCi/m3
10GR(341183005) - AP	6-Nov-13	Beryllium-7	8.52E-02	2.05E-02	1.53E-02		2.21E-02	pCi/m3
10GR(323975005) - AP	2-Feb-13	Cesium-134	-2.45E-04	7.53E-04	1.23E-03	5.00E-02	7.62E-04	pCi/m3
10GR(329805005) - AP	3-May-13	Cesium-134	2.38E-04	3.51E-04	6.52E-04	5.00E-02	3.68E-04	pCi/m3
10GR(335792005) - AP	2-Aug-13	Cesium-134	-1.00E-04	3.26E-04	5.21E-04	5.00E-02	3.29E-04	pCi/m3
10GR(341183005) - AP	6-Nov-13	Cesium-134	-2.98E-04	4.22E-04	5.65E-04	5.00E-02	4.44E-04	pCi/m3
10GR(323975005) - AP	2-Feb-13	Cesium-137	4.20E-04	6.99E-04	1.15E-03	6.00E-02	7.26E-04	pCi/m3
10GR(329805005) - AP	3-May-13	Cesium-137	8.99E-05	2.60E-04	4.72E-04	6.00E-02	2.63E-04	pCi/m3
10GR(335792005) - AP	2-Aug-13	Cesium-137	-8.15E-05	3.33E-04	5.50E-04	6.00E-02	3.35E-04	pCi/m3
10GR(341183005) - AP	6-Nov-13	Cesium-137	1.15E-04	3.90E-04	6.86E-04	6.00E-02	3.94E-04	pCi/m3

4JS
AC

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
4JS(318103008) - AC	4-Jan-13	Iodine-131	3.83E-03	1.33E-02	2.41E-02	7.00E-02	1.34E-02	pCi/m3
4JS(318593008) - AC	11-Jan-13	Iodine-131	3.33E-03	1.37E-02	2.48E-02	7.00E-02	1.38E-02	pCi/m3
4JS(319095008) - AC	17-Jan-13	Iodine-131	1.31E-04	1.76E-02	2.62E-02	7.00E-02	1.76E-02	pCi/m3
4JS(319500008) - AC	24-Jan-13	Iodine-131	1.15E-02	1.90E-02	3.65E-02	7.00E-02	1.98E-02	pCi/m3
4JS(320028008) - AC	1-Feb-13	Iodine-131	4.69E-03	2.00E-02	3.47E-02	7.00E-02	2.01E-02	pCi/m3
4JS(320344008) - AC	8-Feb-13	Iodine-131	-8.70E-05	1.46E-02	2.47E-02	7.00E-02	1.46E-02	pCi/m3
4JS(320739008) - AC	15-Feb-13	Iodine-131	6.25E-03	2.86E-02	5.19E-02	7.00E-02	2.87E-02	pCi/m3
4JS(321125008) - AC	22-Feb-13	Iodine-131	-1.00E-03	3.24E-02	5.50E-02	7.00E-02	3.24E-02	pCi/m3
4JS(321555008) - AC	28-Feb-13	Iodine-131	1.07E-02	2.00E-02	3.67E-02	7.00E-02	2.06E-02	pCi/m3
4JS(322064008) - AC	8-Mar-13	Iodine-131	4.96E-03	1.34E-02	2.13E-02	7.00E-02	1.36E-02	pCi/m3

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4JS(322433008) - AC	14-Mar-13	Iodine-131	-1.73E-02	2.76E-02	4.26E-02	7.00E-02	2.87E-02	pCi/m3
4JS(322772008) - AC	22-Mar-13	Iodine-131	2.75E-02	1.88E-02	3.84E-02	7.00E-02	2.26E-02	pCi/m3
4JS(323177008) - AC	29-Mar-13	Iodine-131	-6.76E-04	1.35E-02	2.28E-02	7.00E-02	1.35E-02	pCi/m3
4JS(323816008) - AC	5-Apr-13	Iodine-131	-4.79E-03	8.78E-03	1.22E-02	7.00E-02	9.05E-03	pCi/m3
4JS(324140008) - AC	12-Apr-13	Iodine-131	6.53E-03	2.24E-02	3.91E-02	7.00E-02	2.26E-02	pCi/m3
4JS(324517008) - AC	18-Apr-13	Iodine-131	2.39E-03	2.11E-02	3.54E-02	7.00E-02	2.11E-02	pCi/m3
4JS(325084008) - AC	26-Apr-13	Iodine-131	-4.64E-03	1.28E-02	1.73E-02	7.00E-02	1.30E-02	pCi/m3
4JS(325530008) - AC	3-May-13	Iodine-131	1.45E-02	1.31E-02	2.45E-02	7.00E-02	1.47E-02	pCi/m3
4JS(325757008) - AC	10-May-13	Iodine-131	1.31E-02	1.55E-02	2.96E-02	7.00E-02	1.67E-02	pCi/m3
4JS(326261008) - AC	16-May-13	Iodine-131	5.98E-04	8.76E-03	1.32E-02	7.00E-02	8.76E-03	pCi/m3
4JS(326788008) - AC	24-May-13	Iodine-131	6.58E-03	2.24E-02	3.64E-02	7.00E-02	2.27E-02	pCi/m3
4JS(327066008) - AC	30-May-13	Iodine-131	2.99E-04	2.07E-02	3.53E-02	7.00E-02	2.07E-02	pCi/m3
4JS(327718008) - AC	6-Jun-13	Iodine-131	6.46E-03	1.40E-02	2.43E-02	7.00E-02	1.43E-02	pCi/m3
4JS(328060008) - AC	13-Jun-13	Iodine-131	-2.39E-02	3.01E-02	4.15E-02	7.00E-02	3.21E-02	pCi/m3
4JS(328487008) - AC	21-Jun-13	Iodine-131	-2.32E-03	1.04E-02	1.47E-02	7.00E-02	1.04E-02	pCi/m3
4JS(328783008) - AC	28-Jun-13	Iodine-131	1.14E-02	2.14E-02	4.01E-02	7.00E-02	2.20E-02	pCi/m3
4JS(329313008) - AC	4-Jul-13	Iodine-131	1.42E-03	3.04E-02	5.15E-02	7.00E-02	3.04E-02	pCi/m3
4JS(329926008) - AC	11-Jul-13	Iodine-131	-1.26E-03	1.62E-02	2.34E-02	7.00E-02	1.62E-02	pCi/m3
4JS(330260008) - AC	18-Jul-13	Iodine-131	-1.78E-02	2.82E-02	3.53E-02	7.00E-02	2.94E-02	pCi/m3
4JS(330603008) - AC	25-Jul-13	Iodine-131	2.89E-03	3.13E-02	5.37E-02	7.00E-02	3.13E-02	pCi/m3
4JS(331352008) - AC	1-Aug-13	Iodine-131	1.42E-03	1.56E-02	2.59E-02	7.00E-02	1.56E-02	pCi/m3
4JS(331619008) - AC	8-Aug-13	Iodine-131	-4.44E-02	4.02E-02	5.27E-02	7.00E-02	4.50E-02	pCi/m3
4JS(332040008) - AC	15-Aug-13	Iodine-131	-5.02E-03	1.52E-02	2.38E-02	7.00E-02	1.54E-02	pCi/m3
4JS(332587008) - AC	22-Aug-13	Iodine-131	-1.30E-02	1.73E-02	2.40E-02	7.00E-02	1.83E-02	pCi/m3
4JS(332969008) - AC	30-Aug-13	Iodine-131	1.70E-02	1.77E-02	2.80E-02	7.00E-02	1.78E-02	pCi/m3
4JS(333292008) - AC	6-Sep-13	Iodine-131	8.46E-03	2.38E-02	4.33E-02	7.00E-02	2.41E-02	pCi/m3
4JS(333885008) - AC	12-Sep-13	Iodine-131	4.63E-03	1.11E-02	1.99E-02	7.00E-02	1.13E-02	pCi/m3
4JS(334263008) - AC	19-Sep-13	Iodine-131	-1.26E-04	9.72E-03	1.65E-02	7.00E-02	9.72E-03	pCi/m3
4JS(334594008) - AC	26-Sep-13	Iodine-131	9.99E-03	1.54E-02	2.67E-02	7.00E-02	1.61E-02	pCi/m3
4JS(335437008) - AC	3-Oct-13	Iodine-131	2.47E-03	1.08E-02	1.90E-02	7.00E-02	1.08E-02	pCi/m3
4JS(335881008) - AC	11-Oct-13	Iodine-131	6.08E-03	1.13E-02	2.17E-02	7.00E-02	1.17E-02	pCi/m3
4JS(336456008) - AC	18-Oct-13	Iodine-131	1.41E-02	1.46E-02	2.73E-02	7.00E-02	1.59E-02	pCi/m3
4JS(336503008) - AC	24-Oct-13	Iodine-131	1.99E-02	2.00E-02	4.22E-02	7.00E-02	2.20E-02	pCi/m3
4JS(337170008) - AC	31-Oct-13	Iodine-131	1.02E-03	1.76E-02	2.95E-02	7.00E-02	1.76E-02	pCi/m3
4JS(337719008) - AC	8-Nov-13	Iodine-131	1.31E-03	1.49E-02	2.50E-02	7.00E-02	1.49E-02	pCi/m3
4JS(338180007) - AC	15-Nov-13	Iodine-131	2.88E-03	1.28E-02	2.26E-02	7.00E-02	1.29E-02	pCi/m3
4JS(338558008) - AC	21-Nov-13	Iodine-131	2.86E-03	1.63E-02	2.82E-02	7.00E-02	1.64E-02	pCi/m3
4JS(338706008) - AC	28-Nov-13	Iodine-131	6.27E-03	1.37E-02	2.63E-02	7.00E-02	1.40E-02	pCi/m3
4JS(339271008) - AC	5-Dec-13	Iodine-131	4.88E-04	7.85E-03	1.36E-02	7.00E-02	7.85E-03	pCi/m3
4JS(339885008) - AC	12-Dec-13	Iodine-131	2.67E-03	1.27E-02	2.21E-02	7.00E-02	1.27E-02	pCi/m3
4JS(340557008) - AC	19-Dec-13	Iodine-131	1.48E-02	1.86E-02	3.48E-02	7.00E-02	1.98E-02	pCi/m3
4JS(340558008) - AC	26-Dec-13	Iodine-131	2.59E-03	9.62E-03	1.71E-02	7.00E-02	9.69E-03	pCi/m3

4JS
AP

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Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
4JS(318103003) - AP	4-Jan-13	BETA	8.64E-02	9.11E-03	2.34E-03	1.00E-02	9.28E-03	pCi/m3
4JS(318593003) - AP	11-Jan-13	BETA	6.29E-02	7.92E-03	2.62E-03	1.00E-02	8.02E-03	pCi/m3
4JS(319095003) - AP	17-Jan-13	BETA	5.23E-02	7.18E-03	2.34E-03	1.00E-02	7.26E-03	pCi/m3
4JS(319500003) - AP	24-Jan-13	BETA	5.24E-02	7.04E-03	2.25E-03	1.00E-02	7.12E-03	pCi/m3
4JS(320028003) - AP	1-Feb-13	BETA	5.72E-02	7.47E-03	2.39E-03	1.00E-02	7.56E-03	pCi/m3
4JS(320344003) - AP	8-Feb-13	BETA	5.69E-02	7.53E-03	2.50E-03	1.00E-02	7.62E-03	pCi/m3
4JS(320739003) - AP	15-Feb-13	BETA	4.12E-02	6.30E-03	2.42E-03	1.00E-02	6.35E-03	pCi/m3
4JS(321125003) - AP	22-Feb-13	BETA	2.60E-02	5.23E-03	2.63E-03	1.00E-02	5.26E-03	pCi/m3
4JS(321555003) - AP	28-Feb-13	BETA	3.46E-02	5.85E-03	2.40E-03	1.00E-02	5.89E-03	pCi/m3
4JS(322064003) - AP	8-Mar-13	BETA	2.58E-02	5.30E-03	2.79E-03	1.00E-02	5.32E-03	pCi/m3
4JS(322433003) - AP	14-Mar-13	BETA	4.10E-02	6.33E-03	2.35E-03	1.00E-02	6.39E-03	pCi/m3
4JS(322772003) - AP	22-Mar-13	BETA	2.84E-02	5.05E-03	2.31E-03	1.00E-02	5.08E-03	pCi/m3
4JS(323177003) - AP	29-Mar-13	BETA	3.69E-02	6.13E-03	2.49E-03	1.00E-02	6.18E-03	pCi/m3
4JS(323816003) - AP	5-Apr-13	BETA	4.43E-02	6.76E-03	2.55E-03	1.00E-02	6.82E-03	pCi/m3
4JS(324140003) - AP	12-Apr-13	BETA	3.10E-02	6.08E-03	2.90E-03	1.00E-02	6.12E-03	pCi/m3
4JS(324517003) - AP	18-Apr-13	BETA	2.99E-02	5.58E-03	2.47E-03	1.00E-02	5.61E-03	pCi/m3
4JS(325084003) - AP	26-Apr-13	BETA	4.48E-02	6.75E-03	2.41E-03	1.00E-02	6.81E-03	pCi/m3
4JS(325530003) - AP	3-May-13	BETA	3.67E-02	5.85E-03	2.31E-03	1.00E-02	5.90E-03	pCi/m3
4JS(325757003) - AP	10-May-13	BETA	3.25E-02	6.49E-03	3.01E-03	1.00E-02	6.52E-03	pCi/m3
4JS(326261003) - AP	16-May-13	BETA	4.32E-02	6.79E-03	2.63E-03	1.00E-02	6.85E-03	pCi/m3
4JS(326788003) - AP	24-May-13	BETA	3.50E-02	6.00E-03	2.63E-03	1.00E-02	6.04E-03	pCi/m3
4JS(327066003) - AP	30-May-13	BETA	3.07E-02	5.99E-03	2.94E-03	1.00E-02	6.02E-03	pCi/m3
4JS(327718003) - AP	6-Jun-13	BETA	4.23E-02	6.70E-03	2.72E-03	1.00E-02	6.76E-03	pCi/m3
4JS(328060003) - AP	13-Jun-13	BETA	4.30E-02	8.00E-03	3.76E-03	1.00E-02	8.05E-03	pCi/m3
4JS(328487003) - AP	21-Jun-13	BETA	4.44E-02	6.84E-03	2.83E-03	1.00E-02	6.90E-03	pCi/m3
4JS(328783003) - AP	28-Jun-13	BETA	3.20E-02	6.04E-03	2.92E-03	1.00E-02	6.08E-03	pCi/m3
4JS(329313003) - AP	4-Jul-13	BETA	3.90E-02	6.31E-03	2.63E-03	1.00E-02	6.36E-03	pCi/m3
4JS(329926003) - AP	11-Jul-13	BETA	3.36E-02	5.24E-03	2.02E-03	1.00E-02	5.28E-03	pCi/m3
4JS(330260003) - AP	18-Jul-13	BETA	3.60E-02	5.42E-03	1.90E-03	1.00E-02	5.47E-03	pCi/m3
4JS(330603003) - AP	25-Jul-13	BETA	2.71E-02	4.78E-03	2.21E-03	1.00E-02	4.81E-03	pCi/m3
4JS(331352003) - AP	1-Aug-13	BETA	4.67E-02	6.06E-03	1.86E-03	1.00E-02	6.14E-03	pCi/m3
4JS(331619003) - AP	8-Aug-13	BETA	2.99E-02	5.01E-03	1.94E-03	1.00E-02	5.04E-03	pCi/m3
4JS(332040003) - AP	15-Aug-13	BETA	4.00E-02	5.64E-03	1.97E-03	1.00E-02	5.70E-03	pCi/m3
4JS(332587003) - AP	22-Aug-13	BETA	6.02E-02	7.01E-03	1.98E-03	1.00E-02	7.12E-03	pCi/m3
4JS(332969003) - AP	30-Aug-13	BETA	5.35E-02	6.08E-03	1.70E-03	1.00E-02	6.18E-03	pCi/m3
4JS(333292003) - AP	6-Sep-13	BETA	4.85E-02	6.79E-03	2.31E-03	1.00E-02	6.86E-03	pCi/m3
4JS(333885003) - AP	12-Sep-13	BETA	4.93E-02	6.26E-03	1.98E-03	1.00E-02	6.34E-03	pCi/m3
4JS(334263003) - AP	19-Sep-13	BETA	3.78E-02	5.56E-03	2.14E-03	1.00E-02	5.61E-03	pCi/m3
4JS(334594003) - AP	26-Sep-13	BETA	3.75E-02	5.51E-03	2.13E-03	1.00E-02	5.56E-03	pCi/m3
4JS(335437003) - AP	3-Oct-13	BETA	3.94E-02	5.65E-03	2.04E-03	1.00E-02	5.71E-03	pCi/m3
4JS(335881003) - AP	11-Oct-13	BETA	4.29E-02	5.01E-03	1.58E-03	1.00E-02	5.09E-03	pCi/m3
4JS(336456003) - AP	18-Oct-13	BETA	3.28E-02	5.05E-03	1.83E-03	1.00E-02	5.09E-03	pCi/m3
4JS(336503003) - AP	24-Oct-13	BETA	2.79E-02	4.29E-03	1.55E-03	1.00E-02	4.33E-03	pCi/m3
4JS(337170003) - AP	31-Oct-13	BETA	3.38E-02	4.70E-03	1.69E-03	1.00E-02	4.75E-03	pCi/m3

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4JS(337719003) - AP	8-Nov-13	BETA	4.32E-02	5.01E-03	1.52E-03	1.00E-02	5.09E-03	pCi/m3
4JS(338180003) - AP	15-Nov-13	BETA	4.89E-02	6.48E-03	2.13E-03	1.00E-02	6.56E-03	pCi/m3
4JS(338558003) - AP	21-Nov-13	BETA	3.02E-02	4.47E-03	1.52E-03	1.00E-02	4.51E-03	pCi/m3
4JS(338706003) - AP	28-Nov-13	BETA	4.83E-02	5.61E-03	1.52E-03	1.00E-02	5.69E-03	pCi/m3
4JS(339271003) - AP	5-Dec-13	BETA	4.73E-02	5.40E-03	1.51E-03	1.00E-02	5.49E-03	pCi/m3
4JS(339885003) - AP	12-Dec-13	BETA	6.11E-02	6.14E-03	1.50E-03	1.00E-02	6.27E-03	pCi/m3
4JS(340557003) - AP	19-Dec-13	BETA	3.74E-02	4.92E-03	1.55E-03	1.00E-02	4.98E-03	pCi/m3
4JS(340558003) - AP	26-Dec-13	BETA	5.65E-02	5.98E-03	1.53E-03	1.00E-02	6.09E-03	pCi/m3
4JS(323975003) - AP	8-Feb-13	Beryllium-7	1.13E-01	2.98E-02	2.15E-02		3.16E-02	pCi/m3
4JS(329805003) - AP	10-May-13	Beryllium-7	1.36E-01	1.99E-02	1.12E-02		2.31E-02	pCi/m3
4JS(335792003) - AP	8-Aug-13	Beryllium-7	1.16E-01	1.52E-02	8.48E-03		1.91E-02	pCi/m3
4JS(341183003) - AP	11-Nov-13	Beryllium-7	1.09E-01	2.55E-02	1.53E-02		2.78E-02	pCi/m3
4JS(323975003) - AP	8-Feb-13	Cesium-134	4.26E-04	8.19E-04	1.45E-03	5.00E-02	8.43E-04	pCi/m3
4JS(329805003) - AP	10-May-13	Cesium-134	-1.22E-04	4.65E-04	7.50E-04	5.00E-02	4.69E-04	pCi/m3
4JS(335792003) - AP	8-Aug-13	Cesium-134	5.66E-05	3.01E-04	5.21E-04	5.00E-02	3.02E-04	pCi/m3
4JS(341183003) - AP	11-Nov-13	Cesium-134	6.47E-05	8.05E-04	1.37E-03	5.00E-02	8.06E-04	pCi/m3
4JS(323975003) - AP	8-Feb-13	Cesium-137	-3.59E-04	6.77E-04	1.11E-03	6.00E-02	6.97E-04	pCi/m3
4JS(329805003) - AP	10-May-13	Cesium-137	4.53E-04	4.12E-04	4.53E-04	6.00E-02	4.15E-04	pCi/m3
4JS(335792003) - AP	8-Aug-13	Cesium-137	2.31E-04	5.32E-04	4.92E-04	6.00E-02	5.33E-04	pCi/m3
4JS(341183003) - AP	11-Nov-13	Cesium-137	2.25E-04	6.48E-04	1.17E-03	6.00E-02	6.56E-04	pCi/m3

5PR
AC

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
5PR(318103009) - AC	4-Jan-13	Iodine-131	-9.24E-03	2.29E-02	3.65E-02	7.00E-02	2.33E-02	pCi/m3
5PR(318593009) - AC	11-Jan-13	Iodine-131	-4.29E-02	2.95E-02	3.06E-02	7.00E-02	3.54E-02	pCi/m3
5PR(319095009) - AC	17-Jan-13	Iodine-131	1.39E-02	3.16E-02	5.87E-02	7.00E-02	3.22E-02	pCi/m3
5PR(319500009) - AC	25-Jan-13	Iodine-131	-1.31E-02	2.77E-02	4.33E-02	7.00E-02	2.83E-02	pCi/m3
5PR(320028009) - AC	1-Feb-13	Iodine-131	3.18E-03	3.06E-02	5.13E-02	7.00E-02	3.06E-02	pCi/m3
5PR(320344009) - AC	8-Feb-13	Iodine-131	1.83E-03	3.27E-02	5.59E-02	7.00E-02	3.27E-02	pCi/m3
5PR(320739009) - AC	15-Feb-13	Iodine-131	1.35E-02	3.71E-02	6.88E-02	7.00E-02	3.76E-02	pCi/m3
5PR(321125009) - AC	22-Feb-13	Iodine-131	2.46E-02	2.94E-02	5.63E-02	7.00E-02	3.15E-02	pCi/m3
5PR(321555009) - AC	1-Mar-13	Iodine-131	-4.53E-03	2.17E-02	3.54E-02	7.00E-02	2.18E-02	pCi/m3
5PR(322064009) - AC	8-Mar-13	Iodine-131	2.45E-02	4.30E-02	6.76E-02	7.00E-02	4.44E-02	pCi/m3
5PR(322433009) - AC	14-Mar-13	Iodine-131	2.37E-02	3.10E-02	6.06E-02	7.00E-02	3.29E-02	pCi/m3
5PR(322772009) - AC	22-Mar-13	Iodine-131	-2.91E-02	3.23E-02	4.47E-02	7.00E-02	3.49E-02	pCi/m3
5PR(323177009) - AC	29-Mar-13	Iodine-131	4.14E-02	3.30E-02	6.84E-02	7.00E-02	3.81E-02	pCi/m3
5PR(323816009) - AC	5-Apr-13	Iodine-131	-2.85E-03	1.64E-02	2.76E-02	7.00E-02	1.65E-02	pCi/m3
5PR(324140009) - AC	12-Apr-13	Iodine-131	9.47E-03	1.63E-02	2.98E-02	7.00E-02	1.69E-02	pCi/m3
5PR(324517009) - AC	19-Apr-13	Iodine-131	5.79E-03	2.38E-02	4.17E-02	7.00E-02	2.39E-02	pCi/m3
5PR(325084009) - AC	26-Apr-13	Iodine-131	2.02E-02	2.59E-02	4.94E-02	7.00E-02	2.75E-02	pCi/m3
5PR(325530009) - AC	3-May-13	Iodine-131	-5.37E-03	1.31E-02	2.05E-02	7.00E-02	1.33E-02	pCi/m3
5PR(325757009) - AC	10-May-13	Iodine-131	-2.81E-03	2.15E-02	3.56E-02	7.00E-02	2.16E-02	pCi/m3
5PR(326261009) - AC	16-May-13	Iodine-131	-7.42E-03	1.51E-02	2.44E-02	7.00E-02	1.55E-02	pCi/m3
5PR(326788009) - AC	24-May-13	Iodine-131	-1.07E-02	2.65E-02	3.44E-02	7.00E-02	2.69E-02	pCi/m3

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5PR(327066009) - AC	30-May-13	Iodine-131	-3.29E-02	4.45E-02	6.20E-02	7.00E-02	4.70E-02	pCi/m3
5PR(327718009) - AC	6-Jun-13	Iodine-131	5.61E-03	1.57E-02	2.79E-02	7.00E-02	1.59E-02	pCi/m3
5PR(328060009) - AC	13-Jun-13	Iodine-131	5.73E-03	3.64E-02	5.41E-02	7.00E-02	3.65E-02	pCi/m3
5PR(328487009) - AC	21-Jun-13	Iodine-131	3.18E-03	1.22E-02	2.13E-02	7.00E-02	1.23E-02	pCi/m3
5PR(328783009) - AC	28-Jun-13	Iodine-131	8.59E-03	2.58E-02	4.63E-02	7.00E-02	2.61E-02	pCi/m3
5PR(329313009) - AC	4-Jul-13	Iodine-131	-3.36E-03	1.77E-02	2.96E-02	7.00E-02	1.78E-02	pCi/m3
5PR(329926009) - AC	11-Jul-13	Iodine-131	-6.85E-03	3.84E-02	6.37E-02	7.00E-02	3.85E-02	pCi/m3
5PR(330260009) - AC	18-Jul-13	Iodine-131	1.26E-02	3.33E-02	5.93E-02	7.00E-02	3.38E-02	pCi/m3
5PR(330603009) - AC	25-Jul-13	Iodine-131	3.21E-03	2.99E-02	5.09E-02	7.00E-02	3.00E-02	pCi/m3
5PR(331352009) - AC	1-Aug-13	Iodine-131	-5.14E-03	2.62E-02	4.16E-02	7.00E-02	2.64E-02	pCi/m3
5PR(331619009) - AC	8-Aug-13	Iodine-131	3.18E-03	3.31E-02	5.79E-02	7.00E-02	3.32E-02	pCi/m3
5PR(332040009) - AC	15-Aug-13	Iodine-131	8.44E-03	3.70E-02	6.48E-02	7.00E-02	3.72E-02	pCi/m3
5PR(332587009) - AC	22-Aug-13	Iodine-131	-1.20E-02	4.03E-02	6.64E-02	7.00E-02	4.07E-02	pCi/m3
5PR(332969009) - AC	30-Aug-13	Iodine-131	4.02E-03	3.05E-02	5.25E-02	7.00E-02	3.05E-02	pCi/m3
5PR(333292009) - AC	6-Sep-13	Iodine-131	-1.02E-02	3.72E-02	5.95E-02	7.00E-02	3.74E-02	pCi/m3
5PR(333885009) - AC	12-Sep-13	Iodine-131	-1.51E-02	1.94E-02	2.75E-02	7.00E-02	2.06E-02	pCi/m3
5PR(334263009) - AC	19-Sep-13	Iodine-131	-1.50E-02	2.64E-02	4.15E-02	7.00E-02	2.73E-02	pCi/m3
5PR(334594009) - AC	26-Sep-13	Iodine-131	1.15E-02	2.92E-02	4.51E-02	7.00E-02	2.97E-02	pCi/m3
5PR(335437009) - AC	3-Oct-13	Iodine-131	-1.16E-03	2.32E-02	3.93E-02	7.00E-02	2.32E-02	pCi/m3
5PR(335881009) - AC	11-Oct-13	Iodine-131	-5.74E-03	1.98E-02	3.17E-02	7.00E-02	2.00E-02	pCi/m3
5PR(336456009) - AC	18-Oct-13	Iodine-131	9.19E-04	2.40E-02	4.00E-02	7.00E-02	2.40E-02	pCi/m3
5PR(336503009) - AC	24-Oct-13	Iodine-131	1.33E-03	2.08E-02	3.52E-02	7.00E-02	2.08E-02	pCi/m3
5PR(337170009) - AC	31-Oct-13	Iodine-131	1.37E-02	2.06E-02	4.34E-02	7.00E-02	2.16E-02	pCi/m3
5PR(337719009) - AC	8-Nov-13	Iodine-131	1.17E-02	2.64E-02	4.66E-02	7.00E-02	2.69E-02	pCi/m3
5PR(338180008) - AC	15-Nov-13	Iodine-131	-2.15E-02	3.92E-02	5.75E-02	7.00E-02	4.04E-02	pCi/m3
5PR(338558009) - AC	21-Nov-13	Iodine-131	-1.21E-02	3.33E-02	5.12E-02	7.00E-02	3.38E-02	pCi/m3
5PR(338706009) - AC	28-Nov-13	Iodine-131	8.20E-03	3.61E-02	6.55E-02	7.00E-02	3.63E-02	pCi/m3
5PR(339271009) - AC	5-Dec-13	Iodine-131	7.43E-03	2.10E-02	3.73E-02	7.00E-02	2.13E-02	pCi/m3
5PR(339885009) - AC	12-Dec-13	Iodine-131	-2.09E-03	3.78E-02	6.31E-02	7.00E-02	3.78E-02	pCi/m3
5PR(340557009) - AC	19-Dec-13	Iodine-131	-1.17E-03	4.11E-02	5.97E-02	7.00E-02	4.11E-02	pCi/m3
5PR(340558009) - AC	26-Dec-13	Iodine-131	2.49E-03	2.57E-02	4.38E-02	7.00E-02	2.57E-02	pCi/m3

5PR
AP

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
5PR(318103004) - AP	4-Jan-13	BETA	1.66E-01	1.57E-02	3.64E-03	1.00E-02	1.61E-02	pCi/m3
5PR(318593004) - AP	11-Jan-13	BETA	1.14E-01	1.53E-02	5.35E-03	1.00E-02	1.55E-02	pCi/m3
5PR(319095004) - AP	17-Jan-13	BETA	9.35E-02	1.19E-02	3.61E-03	1.00E-02	1.20E-02	pCi/m3
5PR(319500004) - AP	25-Jan-13	BETA	8.28E-02	1.29E-02	4.74E-03	1.00E-02	1.30E-02	pCi/m3
5PR(320028004) - AP	1-Feb-13	BETA	9.32E-02	1.19E-02	3.71E-03	1.00E-02	1.20E-02	pCi/m3
5PR(320344004) - AP	8-Feb-13	BETA	1.01E-01	1.46E-02	5.22E-03	1.00E-02	1.47E-02	pCi/m3
5PR(320739004) - AP	15-Feb-13	BETA	7.90E-02	1.07E-02	3.71E-03	1.00E-02	1.08E-02	pCi/m3
5PR(321125004) - AP	22-Feb-13	BETA	5.49E-02	1.11E-02	5.60E-03	1.00E-02	1.12E-02	pCi/m3
5PR(321555004) - AP	1-Mar-13	BETA	4.86E-02	8.58E-03	3.65E-03	1.00E-02	8.64E-03	pCi/m3
5PR(322064004) - AP	8-Mar-13	BETA	4.71E-02	1.02E-02	5.57E-03	1.00E-02	1.02E-02	pCi/m3

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5PR(322433004) - AP	14-Mar-13	BETA	6.84E-02	1.01E-02	3.58E-03	1.00E-02	1.02E-02	pCi/m3
5PR(322772004) - AP	22-Mar-13	BETA	5.85E-02	1.04E-02	4.75E-03	1.00E-02	1.04E-02	pCi/m3
5PR(323177004) - AP	29-Mar-13	BETA	5.23E-02	8.88E-03	3.68E-03	1.00E-02	8.94E-03	pCi/m3
5PR(323816004) - AP	5-Apr-13	BETA	6.77E-02	1.19E-02	5.09E-03	1.00E-02	1.20E-02	pCi/m3
5PR(324140004) - AP	12-Apr-13	BETA	3.46E-02	7.83E-03	4.19E-03	1.00E-02	7.86E-03	pCi/m3
5PR(324517004) - AP	19-Apr-13	BETA	6.71E-02	1.17E-02	4.90E-03	1.00E-02	1.18E-02	pCi/m3
5PR(325084004) - AP	26-Apr-13	BETA	7.73E-02	1.04E-02	3.32E-03	1.00E-02	1.05E-02	pCi/m3
5PR(325530004) - AP	3-May-13	BETA	5.31E-02	9.15E-03	3.74E-03	1.00E-02	9.22E-03	pCi/m3
5PR(325757004) - AP	10-May-13	BETA	4.85E-02	9.01E-03	3.93E-03	1.00E-02	9.06E-03	pCi/m3
5PR(326261004) - AP	16-May-13	BETA	7.36E-02	1.14E-02	4.35E-03	1.00E-02	1.15E-02	pCi/m3
5PR(326788004) - AP	24-May-13	BETA	3.98E-02	7.33E-03	3.42E-03	1.00E-02	7.37E-03	pCi/m3
5PR(327066004) - AP	30-May-13	BETA	4.39E-02	9.18E-03	4.77E-03	1.00E-02	9.23E-03	pCi/m3
5PR(327718004) - AP	6-Jun-13	BETA	5.54E-02	8.55E-03	3.38E-03	1.00E-02	8.62E-03	pCi/m3
5PR(328060004) - AP	13-Jun-13	BETA	6.79E-02	1.27E-02	6.00E-03	1.00E-02	1.28E-02	pCi/m3
5PR(328487004) - AP	21-Jun-13	BETA	6.75E-02	9.28E-03	3.47E-03	1.00E-02	9.38E-03	pCi/m3
5PR(328783004) - AP	28-Jun-13	BETA	5.55E-02	1.00E-02	4.67E-03	1.00E-02	1.01E-02	pCi/m3
5PR(329313004) - AP	4-Jul-13	BETA	6.15E-02	8.98E-03	3.42E-03	1.00E-02	9.07E-03	pCi/m3
5PR(329926004) - AP	11-Jul-13	BETA	6.63E-02	1.08E-02	4.30E-03	1.00E-02	1.08E-02	pCi/m3
5PR(330260004) - AP	18-Jul-13	BETA	5.20E-02	8.07E-03	2.91E-03	1.00E-02	8.14E-03	pCi/m3
5PR(330603004) - AP	25-Jul-13	BETA	4.32E-02	9.14E-03	4.93E-03	1.00E-02	9.19E-03	pCi/m3
5PR(331352004) - AP	1-Aug-13	BETA	5.16E-02	8.10E-03	2.96E-03	1.00E-02	8.17E-03	pCi/m3
5PR(331619004) - AP	8-Aug-13	BETA	4.70E-02	9.11E-03	4.02E-03	1.00E-02	9.16E-03	pCi/m3
5PR(332040004) - AP	15-Aug-13	BETA	5.69E-02	8.57E-03	3.18E-03	1.00E-02	8.65E-03	pCi/m3
5PR(332587004) - AP	22-Aug-13	BETA	8.67E-02	1.22E-02	4.11E-03	1.00E-02	1.23E-02	pCi/m3
5PR(332969004) - AP	30-Aug-13	BETA	7.28E-02	8.82E-03	2.62E-03	1.00E-02	8.94E-03	pCi/m3
5PR(333292004) - AP	6-Sep-13	BETA	6.33E-02	1.13E-02	4.76E-03	1.00E-02	1.13E-02	pCi/m3
5PR(333885004) - AP	12-Sep-13	BETA	6.51E-02	9.20E-03	3.21E-03	1.00E-02	9.30E-03	pCi/m3
5PR(334263004) - AP	19-Sep-13	BETA	6.01E-02	1.04E-02	4.64E-03	1.00E-02	1.05E-02	pCi/m3
5PR(334594004) - AP	26-Sep-13	BETA	5.71E-02	8.73E-03	3.50E-03	1.00E-02	8.81E-03	pCi/m3
5PR(335437004) - AP	3-Oct-13	BETA	7.18E-02	1.13E-02	4.41E-03	1.00E-02	1.14E-02	pCi/m3
5PR(335881004) - AP	11-Oct-13	BETA	6.27E-02	7.81E-03	2.62E-03	1.00E-02	7.92E-03	pCi/m3
5PR(336456004) - AP	18-Oct-13	BETA	8.35E-02	1.25E-02	4.41E-03	1.00E-02	1.26E-02	pCi/m3
5PR(336503004) - AP	24-Oct-13	BETA	3.21E-02	6.23E-03	2.77E-03	1.00E-02	6.26E-03	pCi/m3
5PR(337170004) - AP	31-Oct-13	BETA	4.16E-02	7.36E-03	3.27E-03	1.00E-02	7.41E-03	pCi/m3
5PR(337719004) - AP	8-Nov-13	BETA	6.26E-02	8.51E-03	2.99E-03	1.00E-02	8.60E-03	pCi/m3
5PR(338180004) - AP	15-Nov-13	BETA	6.10E-02	1.14E-02	5.05E-03	1.00E-02	1.14E-02	pCi/m3
5PR(338558004) - AP	21-Nov-13	BETA	5.30E-02	8.69E-03	3.24E-03	1.00E-02	8.76E-03	pCi/m3
5PR(338706004) - AP	28-Nov-13	BETA	8.11E-02	1.15E-02	3.76E-03	1.00E-02	1.16E-02	pCi/m3
5PR(339271004) - AP	5-Dec-13	BETA	8.32E-02	9.67E-03	2.75E-03	1.00E-02	9.82E-03	pCi/m3
5PR(339885004) - AP	12-Dec-13	BETA	8.83E-02	1.18E-02	3.75E-03	1.00E-02	1.19E-02	pCi/m3
5PR(340557004) - AP	19-Dec-13	BETA	5.78E-02	8.16E-03	2.74E-03	1.00E-02	8.25E-03	pCi/m3
5PR(340558004) - AP	26-Dec-13	BETA	9.17E-02	1.21E-02	3.82E-03	1.00E-02	1.22E-02	pCi/m3
5PR(323975004) - AP	8-Feb-13	Beryllium-7	2.37E-01	3.36E-02	2.76E-02		3.97E-02	pCi/m3
5PR(329805004) - AP	10-May-13	Beryllium-7	1.97E-01	3.04E-02	1.88E-02		3.49E-02	pCi/m3
5PR(335792004) - AP	8-Aug-13	Beryllium-7	1.82E-01	2.33E-02	1.40E-02		2.97E-02	pCi/m3

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5PR(341183004) - AP	11-Nov-13	Beryllium-7	1.36E-01	4.11E-02	2.32E-02		4.34E-02	pCi/m3
5PR(323975004) - AP	8-Feb-13	Cesium-134	3.05E-04	9.19E-04	1.64E-03	5.00E-02	9.31E-04	pCi/m3
5PR(329805004) - AP	10-May-13	Cesium-134	1.70E-04	7.13E-04	1.27E-03	5.00E-02	7.17E-04	pCi/m3
5PR(335792004) - AP	8-Aug-13	Cesium-134	9.67E-06	5.34E-04	8.97E-04	5.00E-02	5.34E-04	pCi/m3
5PR(341183004) - AP	11-Nov-13	Cesium-134	6.26E-04	1.13E-03	2.22E-03	5.00E-02	1.17E-03	pCi/m3
5PR(323975004) - AP	8-Feb-13	Cesium-137	-9.34E-06	6.80E-04	1.16E-03	6.00E-02	6.80E-04	pCi/m3
5PR(329805004) - AP	10-May-13	Cesium-137	4.31E-04	8.30E-04	1.06E-03	6.00E-02	8.31E-04	pCi/m3
5PR(335792004) - AP	8-Aug-13	Cesium-137	-1.22E-07	4.63E-04	7.13E-04	6.00E-02	4.63E-04	pCi/m3
5PR(341183004) - AP	11-Nov-13	Cesium-137	-1.31E-04	1.07E-03	1.70E-03	6.00E-02	1.08E-03	pCi/m3

8SP

AC

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
8SP(318103006) - AC	4-Jan-13	Iodine-131	1.39E-03	1.32E-02	2.31E-02	7.00E-02	1.33E-02	pCi/m3
8SP(318593006) - AC	11-Jan-13	Iodine-131	-1.26E-02	2.10E-02	3.04E-02	7.00E-02	2.18E-02	pCi/m3
8SP(319095006) - AC	17-Jan-13	Iodine-131	2.04E-03	1.44E-02	2.49E-02	7.00E-02	1.44E-02	pCi/m3
8SP(319500006) - AC	24-Jan-13	Iodine-131	-4.31E-04	3.69E-02	6.20E-02	7.00E-02	3.69E-02	pCi/m3
8SP(320028006) - AC	1-Feb-13	Iodine-131	-1.94E-03	1.26E-02	2.04E-02	7.00E-02	1.26E-02	pCi/m3
8SP(320344006) - AC	7-Feb-13	Iodine-131	5.19E-04	1.53E-02	2.66E-02	7.00E-02	1.53E-02	pCi/m3
8SP(320739006) - AC	15-Feb-13	Iodine-131	2.38E-03	1.13E-02	2.07E-02	7.00E-02	1.13E-02	pCi/m3
8SP(321125006) - AC	22-Feb-13	Iodine-131	-4.64E-03	1.17E-02	1.74E-02	7.00E-02	1.19E-02	pCi/m3
8SP(321555006) - AC	28-Feb-13	Iodine-131	8.47E-04	1.58E-02	2.63E-02	7.00E-02	1.58E-02	pCi/m3
8SP(322064006) - AC	7-Mar-13	Iodine-131	1.74E-03	8.80E-03	1.53E-02	7.00E-02	8.83E-03	pCi/m3
8SP(322433006) - AC	14-Mar-13	Iodine-131	-5.61E-03	9.62E-03	1.36E-02	7.00E-02	9.96E-03	pCi/m3
8SP(322772006) - AC	22-Mar-13	Iodine-131	1.98E-03	1.12E-02	1.97E-02	7.00E-02	1.12E-02	pCi/m3
8SP(323177006) - AC	29-Mar-13	Iodine-131	4.42E-04	2.33E-02	3.98E-02	7.00E-02	2.33E-02	pCi/m3
8SP(323816006) - AC	5-Apr-13	Iodine-131	-3.19E-03	6.04E-03	9.73E-03	7.00E-02	6.21E-03	pCi/m3
8SP(324140006) - AC	12-Apr-13	Iodine-131	-4.37E-03	1.73E-02	2.47E-02	7.00E-02	1.74E-02	pCi/m3
8SP(324517006) - AC	18-Apr-13	Iodine-131	3.16E-03	1.28E-02	2.26E-02	7.00E-02	1.29E-02	pCi/m3
8SP(325084006) - AC	26-Apr-13	Iodine-131	-1.32E-03	1.04E-02	1.74E-02	7.00E-02	1.05E-02	pCi/m3
8SP(325530006) - AC	3-May-13	Iodine-131	1.33E-03	6.68E-03	1.13E-02	7.00E-02	6.71E-03	pCi/m3
8SP(325757006) - AC	10-May-13	Iodine-131	5.13E-03	1.71E-02	2.64E-02	7.00E-02	1.73E-02	pCi/m3
8SP(326261006) - AC	16-May-13	Iodine-131	1.74E-03	6.59E-03	1.15E-02	7.00E-02	6.64E-03	pCi/m3
8SP(326788006) - AC	24-May-13	Iodine-131	1.16E-02	1.77E-02	3.29E-02	7.00E-02	1.84E-02	pCi/m3
8SP(327066006) - AC	30-May-13	Iodine-131	1.70E-03	1.82E-02	3.10E-02	7.00E-02	1.82E-02	pCi/m3
8SP(327718006) - AC	6-Jun-13	Iodine-131	4.92E-03	1.19E-02	2.11E-02	7.00E-02	1.21E-02	pCi/m3
8SP(328060006) - AC	13-Jun-13	Iodine-131	-1.27E-03	2.78E-02	4.03E-02	7.00E-02	2.78E-02	pCi/m3
8SP(328487006) - AC	20-Jun-13	Iodine-131	7.71E-03	1.08E-02	1.92E-02	7.00E-02	1.13E-02	pCi/m3
8SP(328783006) - AC	28-Jun-13	Iodine-131	2.43E-03	1.48E-02	2.60E-02	7.00E-02	1.48E-02	pCi/m3
8SP(329313006) - AC	4-Jul-13	Iodine-131	-1.28E-02	1.65E-02	2.63E-02	7.00E-02	1.75E-02	pCi/m3
8SP(329926006) - AC	11-Jul-13	Iodine-131	-3.18E-03	1.47E-02	2.39E-02	7.00E-02	1.47E-02	pCi/m3
8SP(330260006) - AC	18-Jul-13	Iodine-131	-6.19E-03	2.71E-02	4.23E-02	7.00E-02	2.73E-02	pCi/m3
8SP(330603006) - AC	25-Jul-13	Iodine-131	5.52E-03	1.33E-02	2.58E-02	7.00E-02	1.36E-02	pCi/m3
8SP(331352006) - AC	1-Aug-13	Iodine-131	2.36E-03	1.09E-02	1.94E-02	7.00E-02	1.10E-02	pCi/m3
8SP(331619006) - AC	8-Aug-13	Iodine-131	1.08E-02	1.74E-02	3.26E-02	7.00E-02	1.81E-02	pCi/m3

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8SP(332040006) - AC	15-Aug-13	Iodine-131	1.44E-04	2.87E-02	4.84E-02	7.00E-02	2.87E-02	pCi/m3
8SP(332587006) - AC	22-Aug-13	Iodine-131	-9.16E-03	2.61E-02	3.94E-02	7.00E-02	2.65E-02	pCi/m3
8SP(332969006) - AC	30-Aug-13	Iodine-131	3.32E-03	1.55E-02	2.80E-02	7.00E-02	1.55E-02	pCi/m3
8SP(333292006) - AC	6-Sep-13	Iodine-131	1.50E-02	2.75E-02	5.22E-02	7.00E-02	2.84E-02	pCi/m3
8SP(333885006) - AC	12-Sep-13	Iodine-131	1.52E-02	2.38E-02	4.24E-02	7.00E-02	2.48E-02	pCi/m3
8SP(334263006) - AC	19-Sep-13	Iodine-131	4.01E-03	9.52E-03	1.74E-02	7.00E-02	9.69E-03	pCi/m3
8SP(334594006) - AC	26-Sep-13	Iodine-131	-2.63E-03	1.37E-02	2.24E-02	7.00E-02	1.37E-02	pCi/m3
8SP(335437006) - AC	3-Oct-13	Iodine-131	5.39E-03	2.30E-02	3.96E-02	7.00E-02	2.31E-02	pCi/m3
8SP(335881006) - AC	11-Oct-13	Iodine-131	6.41E-03	1.16E-02	2.15E-02	7.00E-02	1.20E-02	pCi/m3
8SP(336456006) - AC	18-Oct-13	Iodine-131	-2.03E-03	1.95E-02	3.19E-02	7.00E-02	1.96E-02	pCi/m3
8SP(336503006) - AC	24-Oct-13	Iodine-131	1.03E-02	1.53E-02	3.12E-02	7.00E-02	1.60E-02	pCi/m3
8SP(337170006) - AC	31-Oct-13	Iodine-131	-2.18E-03	2.13E-02	3.55E-02	7.00E-02	2.13E-02	pCi/m3
8SP(337719006) - AC	8-Nov-13	Iodine-131	-9.06E-03	1.56E-02	2.24E-02	7.00E-02	1.62E-02	pCi/m3
8SP(338180005) - AC	15-Nov-13	Iodine-131	2.66E-03	1.11E-02	1.92E-02	7.00E-02	1.12E-02	pCi/m3
8SP(338558006) - AC	21-Nov-13	Iodine-131	5.11E-03	1.42E-02	2.67E-02	7.00E-02	1.44E-02	pCi/m3
8SP(338706006) - AC	28-Nov-13	Iodine-131	7.03E-03	2.06E-02	3.64E-02	7.00E-02	2.08E-02	pCi/m3
8SP(339271006) - AC	5-Dec-13	Iodine-131	3.33E-03	1.16E-02	1.96E-02	7.00E-02	1.17E-02	pCi/m3
8SP(339885006) - AC	12-Dec-13	Iodine-131	-2.42E-03	1.48E-02	2.44E-02	7.00E-02	1.49E-02	pCi/m3
8SP(340557006) - AC	19-Dec-13	Iodine-131	-4.87E-03	1.82E-02	2.96E-02	7.00E-02	1.83E-02	pCi/m3
8SP(340558006) - AC	26-Dec-13	Iodine-131	5.81E-03	1.08E-02	2.00E-02	7.00E-02	1.11E-02	pCi/m3

8SP
AP

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
8SP(318103001) - AP	4-Jan-13	BETA	7.99E-02	8.23E-03	2.07E-03	1.00E-02	8.39E-03	pCi/m3
8SP(318593001) - AP	11-Jan-13	BETA	6.99E-02	7.84E-03	2.33E-03	1.00E-02	7.97E-03	pCi/m3
8SP(319095001) - AP	17-Jan-13	BETA	5.54E-02	6.95E-03	2.09E-03	1.00E-02	7.04E-03	pCi/m3
8SP(319500001) - AP	24-Jan-13	BETA	1.16E-01	2.35E-02	1.08E-02	1.00E-02	2.36E-02	pCi/m3
8SP(320028001) - AP	1-Feb-13	BETA	5.87E-02	6.67E-03	1.87E-03	1.00E-02	6.77E-03	pCi/m3
8SP(320344001) - AP	7-Feb-13	BETA	5.21E-02	6.40E-03	1.98E-03	1.00E-02	6.49E-03	pCi/m3
8SP(320739001) - AP	15-Feb-13	BETA	4.45E-02	5.75E-03	1.90E-03	1.00E-02	5.82E-03	pCi/m3
8SP(321125001) - AP	22-Feb-13	BETA	2.86E-02	4.85E-03	2.10E-03	1.00E-02	4.88E-03	pCi/m3
8SP(321555001) - AP	28-Feb-13	BETA	3.24E-02	4.98E-03	1.87E-03	1.00E-02	5.02E-03	pCi/m3
8SP(322064001) - AP	7-Mar-13	BETA	2.95E-02	4.98E-03	2.22E-03	1.00E-02	5.01E-03	pCi/m3
8SP(322433001) - AP	14-Mar-13	BETA	4.30E-02	5.72E-03	1.85E-03	1.00E-02	5.78E-03	pCi/m3
8SP(322772001) - AP	22-Mar-13	BETA	3.06E-02	4.62E-03	1.83E-03	1.00E-02	4.66E-03	pCi/m3
8SP(323177001) - AP	29-Mar-13	BETA	3.24E-02	5.08E-03	1.96E-03	1.00E-02	5.12E-03	pCi/m3
8SP(323816001) - AP	5-Apr-13	BETA	4.48E-02	6.01E-03	2.01E-03	1.00E-02	6.08E-03	pCi/m3
8SP(324140001) - AP	12-Apr-13	BETA	2.39E-02	4.73E-03	2.27E-03	1.00E-02	4.76E-03	pCi/m3
8SP(324517001) - AP	18-Apr-13	BETA	2.85E-02	4.84E-03	1.98E-03	1.00E-02	4.87E-03	pCi/m3
8SP(325084001) - AP	26-Apr-13	BETA	5.08E-02	6.29E-03	1.88E-03	1.00E-02	6.38E-03	pCi/m3
8SP(325530001) - AP	3-May-13	BETA	3.52E-02	5.08E-03	1.77E-03	1.00E-02	5.13E-03	pCi/m3
8SP(325757001) - AP	10-May-13	BETA	2.78E-02	5.16E-03	2.25E-03	1.00E-02	5.19E-03	pCi/m3
8SP(326261001) - AP	16-May-13	BETA	4.25E-02	5.88E-03	2.03E-03	1.00E-02	5.94E-03	pCi/m3
8SP(326788001) - AP	24-May-13	BETA	2.66E-02	4.53E-03	1.98E-03	1.00E-02	4.56E-03	pCi/m3

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8SP(327066001) - AP	30-May-13	BETA	2.89E-02	5.08E-03	2.28E-03	1.00E-02	5.12E-03	pCi/m3
8SP(327718001) - AP	6-Jun-13	BETA	3.96E-02	5.58E-03	2.04E-03	1.00E-02	5.63E-03	pCi/m3
8SP(328060001) - AP	13-Jun-13	BETA	3.81E-02	6.38E-03	2.74E-03	1.00E-02	6.43E-03	pCi/m3
8SP(328487001) - AP	20-Jun-13	BETA	4.27E-02	5.79E-03	2.14E-03	1.00E-02	5.86E-03	pCi/m3
8SP(328783001) - AP	28-Jun-13	BETA	2.30E-02	4.52E-03	2.25E-03	1.00E-02	4.54E-03	pCi/m3
8SP(329313001) - AP	4-Jul-13	BETA	3.20E-02	5.14E-03	2.12E-03	1.00E-02	5.18E-03	pCi/m3
8SP(329926001) - AP	11-Jul-13	BETA	4.10E-02	5.86E-03	2.09E-03	1.00E-02	5.92E-03	pCi/m3
8SP(330260001) - AP	18-Jul-13	BETA	3.93E-02	5.63E-03	1.88E-03	1.00E-02	5.68E-03	pCi/m3
8SP(330603001) - AP	25-Jul-13	BETA	2.51E-02	4.64E-03	2.23E-03	1.00E-02	4.66E-03	pCi/m3
8SP(331352001) - AP	1-Aug-13	BETA	3.95E-02	5.55E-03	1.83E-03	1.00E-02	5.60E-03	pCi/m3
8SP(331619001) - AP	8-Aug-13	BETA	3.46E-02	6.00E-03	2.39E-03	1.00E-02	6.04E-03	pCi/m3
8SP(332040001) - AP	15-Aug-13	BETA	3.74E-02	5.42E-03	1.94E-03	1.00E-02	5.47E-03	pCi/m3
8SP(332587001) - AP	22-Aug-13	BETA	5.76E-02	6.90E-03	2.00E-03	1.00E-02	6.99E-03	pCi/m3
8SP(332969001) - AP	30-Aug-13	BETA	4.94E-02	5.83E-03	1.69E-03	1.00E-02	5.91E-03	pCi/m3
8SP(333292001) - AP	6-Sep-13	BETA	4.47E-02	6.53E-03	2.31E-03	1.00E-02	6.59E-03	pCi/m3
8SP(333885001) - AP	12-Sep-13	BETA	4.91E-02	6.20E-03	1.95E-03	1.00E-02	6.28E-03	pCi/m3
8SP(334263001) - AP	19-Sep-13	BETA	3.33E-02	5.26E-03	2.16E-03	1.00E-02	5.30E-03	pCi/m3
8SP(334594001) - AP	26-Sep-13	BETA	4.10E-02	5.70E-03	2.09E-03	1.00E-02	5.76E-03	pCi/m3
8SP(335437001) - AP	3-Oct-13	BETA	5.47E-02	6.66E-03	2.05E-03	1.00E-02	6.75E-03	pCi/m3
8SP(335881001) - AP	11-Oct-13	BETA	3.75E-02	4.65E-03	1.55E-03	1.00E-02	4.71E-03	pCi/m3
8SP(336456001) - AP	18-Oct-13	BETA	3.54E-02	5.26E-03	1.85E-03	1.00E-02	5.31E-03	pCi/m3
8SP(336503001) - AP	24-Oct-13	BETA	2.87E-02	4.33E-03	1.54E-03	1.00E-02	4.37E-03	pCi/m3
8SP(337170001) - AP	31-Oct-13	BETA	3.03E-02	4.44E-03	1.67E-03	1.00E-02	4.49E-03	pCi/m3
8SP(337719001) - AP	8-Nov-13	BETA	3.78E-02	4.66E-03	1.50E-03	1.00E-02	4.72E-03	pCi/m3
8SP(338180001) - AP	15-Nov-13	BETA	3.19E-02	5.29E-03	2.13E-03	1.00E-02	5.33E-03	pCi/m3
8SP(338558001) - AP	21-Nov-13	BETA	3.49E-02	4.77E-03	1.50E-03	1.00E-02	4.82E-03	pCi/m3
8SP(338706001) - AP	28-Nov-13	BETA	4.49E-02	5.38E-03	1.50E-03	1.00E-02	5.46E-03	pCi/m3
8SP(339271001) - AP	5-Dec-13	BETA	5.06E-02	5.54E-03	1.49E-03	1.00E-02	5.63E-03	pCi/m3
8SP(339885001) - AP	12-Dec-13	BETA	5.33E-02	5.77E-03	1.51E-03	1.00E-02	5.87E-03	pCi/m3
8SP(340557001) - AP	19-Dec-13	BETA	4.05E-02	5.05E-03	1.51E-03	1.00E-02	5.12E-03	pCi/m3
8SP(340558001) - AP	26-Dec-13	BETA	4.82E-02	5.54E-03	1.53E-03	1.00E-02	5.63E-03	pCi/m3
8SP(323975001) - AP	8-Feb-13	Beryllium-7	1.12E-01	1.56E-02	1.09E-02		1.84E-02	pCi/m3
8SP(329805001) - AP	10-May-13	Beryllium-7	1.22E-01	1.81E-02	8.52E-03		2.10E-02	pCi/m3
8SP(335792001) - AP	8-Aug-13	Beryllium-7	1.35E-01	1.60E-02	8.64E-03		2.09E-02	pCi/m3
8SP(341183001) - AP	11-Nov-13	Beryllium-7	9.47E-02	1.57E-02	9.01E-03		1.85E-02	pCi/m3
8SP(323975001) - AP	8-Feb-13	Cesium-134	-1.28E-06	3.43E-04	5.78E-04	5.00E-02	3.43E-04	pCi/m3
8SP(329805001) - AP	10-May-13	Cesium-134	1.50E-04	3.14E-04	5.76E-04	5.00E-02	3.22E-04	pCi/m3
8SP(335792001) - AP	8-Aug-13	Cesium-134	-7.01E-05	2.73E-04	4.41E-04	5.00E-02	2.75E-04	pCi/m3
8SP(341183001) - AP	11-Nov-13	Cesium-134	-7.63E-05	4.39E-04	7.30E-04	5.00E-02	4.41E-04	pCi/m3
8SP(323975001) - AP	8-Feb-13	Cesium-137	-6.34E-05	3.17E-04	5.28E-04	6.00E-02	3.19E-04	pCi/m3
8SP(329805001) - AP	10-May-13	Cesium-137	-2.32E-05	2.83E-04	4.13E-04	6.00E-02	2.83E-04	pCi/m3
8SP(335792001) - AP	8-Aug-13	Cesium-137	-3.34E-05	2.94E-04	4.59E-04	6.00E-02	2.95E-04	pCi/m3
8SP(341183001) - AP	11-Nov-13	Cesium-137	-8.32E-05	4.08E-04	5.47E-04	6.00E-02	4.10E-04	pCi/m3

9TP

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AC

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
9TP(318103007) - AC	4-Jan-13	Iodine-131	-1.11E-02	1.46E-02	2.11E-02	7.00E-02	1.54E-02	pCi/m3
9TP(318593007) - AC	11-Jan-13	Iodine-131	-1.04E-03	1.62E-02	2.28E-02	7.00E-02	1.62E-02	pCi/m3
9TP(319095007) - AC	17-Jan-13	Iodine-131	-4.80E-03	1.39E-02	1.86E-02	7.00E-02	1.41E-02	pCi/m3
9TP(319500007) - AC	24-Jan-13	Iodine-131	7.09E-03	1.22E-02	2.34E-02	7.00E-02	1.26E-02	pCi/m3
9TP(320028007) - AC	1-Feb-13	Iodine-131	4.65E-03	1.19E-02	2.20E-02	7.00E-02	1.20E-02	pCi/m3
9TP(320344007) - AC	7-Feb-13	Iodine-131	3.24E-03	1.01E-02	1.89E-02	7.00E-02	1.02E-02	pCi/m3
9TP(320739007) - AC	15-Feb-13	Iodine-131	-3.95E-02	3.23E-02	4.11E-02	7.00E-02	3.70E-02	pCi/m3
9TP(321125007) - AC	22-Feb-13	Iodine-131	1.21E-02	1.29E-02	2.19E-02	7.00E-02	1.29E-02	pCi/m3
9TP(321555007) - AC	28-Feb-13	Iodine-131	5.44E-03	1.30E-02	2.32E-02	7.00E-02	1.33E-02	pCi/m3
9TP(322064007) - AC	8-Mar-13	Iodine-131	5.91E-03	7.31E-03	1.28E-02	7.00E-02	7.33E-03	pCi/m3
9TP(322433007) - AC	14-Mar-13	Iodine-131	-5.05E-03	1.11E-02	1.68E-02	7.00E-02	1.13E-02	pCi/m3
9TP(322772007) - AC	22-Mar-13	Iodine-131	2.37E-03	9.17E-03	1.43E-02	7.00E-02	9.24E-03	pCi/m3
9TP(323177007) - AC	29-Mar-13	Iodine-131	-8.69E-03	9.37E-03	1.11E-02	7.00E-02	1.02E-02	pCi/m3
9TP(323816007) - AC	5-Apr-13	Iodine-131	6.37E-03	7.32E-03	1.31E-02	7.00E-02	7.89E-03	pCi/m3
9TP(324140007) - AC	12-Apr-13	Iodine-131	3.40E-03	1.10E-02	1.97E-02	7.00E-02	1.11E-02	pCi/m3
9TP(324517007) - AC	18-Apr-13	Iodine-131	-6.96E-03	9.05E-03	1.22E-02	7.00E-02	9.60E-03	pCi/m3
9TP(325084007) - AC	26-Apr-13	Iodine-131	2.00E-03	9.38E-03	1.64E-02	7.00E-02	9.42E-03	pCi/m3
9TP(325530007) - AC	3-May-13	Iodine-131	-1.34E-03	7.87E-03	1.31E-02	7.00E-02	7.90E-03	pCi/m3
9TP(325757007) - AC	10-May-13	Iodine-131	9.36E-04	1.26E-02	2.15E-02	7.00E-02	1.26E-02	pCi/m3
9TP(326261007) - AC	16-May-13	Iodine-131	1.09E-03	6.63E-03	1.13E-02	7.00E-02	6.65E-03	pCi/m3
9TP(326788007) - AC	24-May-13	Iodine-131	3.33E-03	1.38E-02	2.45E-02	7.00E-02	1.39E-02	pCi/m3
9TP(327066007) - AC	30-May-13	Iodine-131	-1.22E-03	1.42E-02	2.34E-02	7.00E-02	1.42E-02	pCi/m3
9TP(327718007) - AC	6-Jun-13	Iodine-131	1.48E-03	1.09E-02	1.87E-02	7.00E-02	1.10E-02	pCi/m3
9TP(328060007) - AC	13-Jun-13	Iodine-131	1.51E-02	3.14E-02	5.99E-02	7.00E-02	3.22E-02	pCi/m3
9TP(328487007) - AC	20-Jun-13	Iodine-131	-1.27E-03	9.24E-03	1.53E-02	7.00E-02	9.26E-03	pCi/m3
9TP(328783007) - AC	28-Jun-13	Iodine-131	-1.09E-02	1.64E-02	2.05E-02	7.00E-02	1.71E-02	pCi/m3
9TP(329313007) - AC	4-Jul-13	Iodine-131	8.88E-03	1.69E-02	2.95E-02	7.00E-02	1.74E-02	pCi/m3
9TP(329926007) - AC	11-Jul-13	Iodine-131	-1.72E-03	1.61E-02	2.70E-02	7.00E-02	1.61E-02	pCi/m3
9TP(330260007) - AC	18-Jul-13	Iodine-131	-1.08E-02	2.83E-02	4.31E-02	7.00E-02	2.88E-02	pCi/m3
9TP(330603007) - AC	-25-Jul-13	Iodine-131	-5.30E-03	2.84E-02	4.43E-02	7.00E-02	2.85E-02	pCi/m3
9TP(331352007) - AC	1-Aug-13	Iodine-131	5.58E-03	1.12E-02	1.99E-02	7.00E-02	1.15E-02	pCi/m3
9TP(331619007) - AC	8-Aug-13	Iodine-131	5.41E-04	1.06E-02	1.80E-02	7.00E-02	1.06E-02	pCi/m3
9TP(332040007) - AC	15-Aug-13	Iodine-131	-1.27E-02	1.94E-02	2.70E-02	7.00E-02	2.03E-02	pCi/m3
9TP(332587007) - AC	22-Aug-13	Iodine-131	1.39E-02	1.66E-02	3.32E-02	7.00E-02	1.78E-02	pCi/m3
9TP(332969007) - AC	30-Aug-13	Iodine-131	-8.71E-03	1.82E-02	2.64E-02	7.00E-02	1.86E-02	pCi/m3
9TP(333292007) - AC	6-Sep-13	Iodine-131	-2.95E-04	2.15E-02	3.52E-02	7.00E-02	2.15E-02	pCi/m3
9TP(333885007) - AC	12-Sep-13	Iodine-131	-5.48E-03	1.17E-02	1.78E-02	7.00E-02	1.19E-02	pCi/m3
9TP(334263007) - AC	19-Sep-13	Iodine-131	-6.92E-04	9.82E-03	1.64E-02	7.00E-02	9.83E-03	pCi/m3
9TP(334594007) - AC	26-Sep-13	Iodine-131	-3.33E-03	2.20E-02	3.63E-02	7.00E-02	2.20E-02	pCi/m3
9TP(335437007) - AC	3-Oct-13	Iodine-131	1.26E-02	7.15E-03	1.70E-02	7.00E-02	9.20E-03	pCi/m3
9TP(335881007) - AC	11-Oct-13	Iodine-131	4.97E-03	1.52E-02	2.68E-02	7.00E-02	1.54E-02	pCi/m3
9TP(336456007) - AC	18-Oct-13	Iodine-131	-9.46E-03	1.29E-02	1.97E-02	7.00E-02	1.36E-02	pCi/m3
9TP(336503007) - AC	24-Oct-13	Iodine-131	-5.75E-03	1.52E-02	2.32E-02	7.00E-02	1.55E-02	pCi/m3

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9TP(337170007) - AC	31-Oct-13	Iodine-131	-1.56E-02	1.47E-02	1.53E-02	7.00E-02	1.64E-02	pCi/m3
9TP(3377190007) - AC	8-Nov-13	Iodine-131	-3.23E-03	1.10E-02	1.78E-02	7.00E-02	1.11E-02	pCi/m3
9TP(338180006) - AC	15-Nov-13	Iodine-131	-2.34E-03	1.39E-02	2.31E-02	7.00E-02	1.39E-02	pCi/m3
9TP(3385580007) - AC	21-Nov-13	Iodine-131	2.02E-02	1.49E-02	3.80E-02	7.00E-02	1.50E-02	pCi/m3
9TP(3387060007) - AC	28-Nov-13	Iodine-131	6.85E-03	1.48E-02	2.81E-02	7.00E-02	1.51E-02	pCi/m3
9TP(339271007) - AC	5-Dec-13	Iodine-131	9.09E-04	8.85E-03	1.55E-02	7.00E-02	8.86E-03	pCi/m3
9TP(3398850007) - AC	12-Dec-13	Iodine-131	5.86E-03	2.13E-02	3.33E-02	7.00E-02	2.15E-02	pCi/m3
9TP(3405570007) - AC	19-Dec-13	Iodine-131	2.30E-02	3.16E-02	5.90E-02	7.00E-02	3.33E-02	pCi/m3
9TP(3405580007) - AC	26-Dec-13	Iodine-131	1.54E-03	1.74E-02	2.95E-02	7.00E-02	1.74E-02	pCi/m3

9TP
AP

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
9TP(318103002) - AP	4-Jan-13	BETA	9.66E-02	8.24E-03	1.73E-03	1.00E-02	8.47E-03	pCi/m3
9TP(318593002) - AP	11-Jan-13	BETA	7.06E-02	7.19E-03	1.95E-03	1.00E-02	7.33E-03	pCi/m3
9TP(3190950002) - AP	17-Jan-13	BETA	4.08E-02	5.45E-03	1.74E-03	1.00E-02	5.51E-03	pCi/m3
9TP(319500002) - AP	24-Jan-13	BETA	4.38E-02	5.54E-03	1.67E-03	1.00E-02	5.61E-03	pCi/m3
9TP(3200280002) - AP	1-Feb-13	BETA	4.87E-02	5.92E-03	1.77E-03	1.00E-02	6.00E-03	pCi/m3
9TP(3203440002) - AP	7-Feb-13	BETA	5.18E-02	6.15E-03	1.85E-03	1.00E-02	6.24E-03	pCi/m3
9TP(3207390002) - AP	15-Feb-13	BETA	3.64E-02	5.08E-03	1.80E-03	1.00E-02	5.13E-03	pCi/m3
9TP(3211250002) - AP	22-Feb-13	BETA	2.72E-02	4.57E-03	1.97E-03	1.00E-02	4.61E-03	pCi/m3
9TP(3215550002) - AP	28-Feb-13	BETA	2.96E-02	4.62E-03	1.76E-03	1.00E-02	4.65E-03	pCi/m3
9TP(3220640002) - AP	8-Mar-13	BETA	2.74E-02	4.62E-03	2.06E-03	1.00E-02	4.66E-03	pCi/m3
9TP(3224330002) - AP	14-Mar-13	BETA	4.06E-02	5.40E-03	1.75E-03	1.00E-02	5.47E-03	pCi/m3
9TP(3227720002) - AP	22-Mar-13	BETA	2.78E-02	4.25E-03	1.71E-03	1.00E-02	4.29E-03	pCi/m3
9TP(3231770002) - AP	29-Mar-13	BETA	2.78E-02	4.57E-03	1.84E-03	1.00E-02	4.60E-03	pCi/m3
9TP(3238160002) - AP	5-Apr-13	BETA	3.98E-02	5.47E-03	1.87E-03	1.00E-02	5.53E-03	pCi/m3
9TP(3241400002) - AP	12-Apr-13	BETA	2.18E-02	4.43E-03	2.17E-03	1.00E-02	4.45E-03	pCi/m3
9TP(3245170002) - AP	18-Apr-13	BETA	3.49E-02	5.09E-03	1.81E-03	1.00E-02	5.14E-03	pCi/m3
9TP(3250840002) - AP	26-Apr-13	BETA	3.94E-02	5.43E-03	1.79E-03	1.00E-02	5.49E-03	pCi/m3
9TP(3255300002) - AP	3-May-13	BETA	3.30E-02	4.75E-03	1.65E-03	1.00E-02	4.79E-03	pCi/m3
9TP(3257570002) - AP	10-May-13	BETA	2.81E-02	5.11E-03	2.19E-03	1.00E-02	5.14E-03	pCi/m3
9TP(3262610002) - AP	16-May-13	BETA	4.32E-02	5.81E-03	1.94E-03	1.00E-02	5.87E-03	pCi/m3
9TP(3267880002) - AP	24-May-13	BETA	2.64E-02	4.47E-03	1.94E-03	1.00E-02	4.51E-03	pCi/m3
9TP(3270660002) - AP	30-May-13	BETA	2.15E-02	4.31E-03	2.16E-03	1.00E-02	4.33E-03	pCi/m3
9TP(3277180002) - AP	6-Jun-13	BETA	3.54E-02	5.22E-03	1.99E-03	1.00E-02	5.27E-03	pCi/m3
9TP(3280600002) - AP	13-Jun-13	BETA	6.88E-02	1.23E-02	5.60E-03	1.00E-02	1.24E-02	pCi/m3
9TP(3284870002) - AP	20-Jun-13	BETA	4.18E-02	5.81E-03	2.20E-03	1.00E-02	5.87E-03	pCi/m3
9TP(3287830002) - AP	28-Jun-13	BETA	2.55E-02	4.60E-03	2.14E-03	1.00E-02	4.63E-03	pCi/m3
9TP(3293130002) - AP	4-Jul-13	BETA	3.35E-02	5.20E-03	2.09E-03	1.00E-02	5.24E-03	pCi/m3
9TP(3299260002) - AP	11-Jul-13	BETA	3.94E-02	5.60E-03	1.99E-03	1.00E-02	5.66E-03	pCi/m3
9TP(3302600002) - AP	18-Jul-13	BETA	3.83E-02	5.51E-03	1.85E-03	1.00E-02	5.56E-03	pCi/m3
9TP(3306030002) - AP	25-Jul-13	BETA	1.88E-02	3.97E-03	2.14E-03	1.00E-02	3.99E-03	pCi/m3
9TP(3313520002) - AP	1-Aug-13	BETA	4.20E-02	5.64E-03	1.79E-03	1.00E-02	5.70E-03	pCi/m3
9TP(3316190002) - AP	8-Aug-13	BETA	3.05E-02	4.97E-03	1.87E-03	1.00E-02	5.00E-03	pCi/m3

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9TP(332040002) - AP	15-Aug-13	BETA	3.78E-02	5.38E-03	1.89E-03	1.00E-02	5.43E-03	pCi/m3
9TP(332587002) - AP	22-Aug-13	BETA	5.86E-02	6.80E-03	1.92E-03	1.00E-02	6.91E-03	pCi/m3
9TP(332969002) - AP	30-Aug-13	BETA	4.76E-02	5.66E-03	1.65E-03	1.00E-02	5.75E-03	pCi/m3
9TP(333292002) - AP	6-Sep-13	BETA	4.33E-02	6.27E-03	2.20E-03	1.00E-02	6.33E-03	pCi/m3
9TP(333885002) - AP	12-Sep-13	BETA	5.66E-02	6.58E-03	1.92E-03	1.00E-02	6.68E-03	pCi/m3
9TP(334263002) - AP	19-Sep-13	BETA	3.03E-02	4.90E-03	2.06E-03	1.00E-02	4.94E-03	pCi/m3
9TP(334594002) - AP	26-Sep-13	BETA	3.75E-02	5.40E-03	2.04E-03	1.00E-02	5.45E-03	pCi/m3
9TP(335437002) - AP	3-Oct-13	BETA	4.40E-02	5.86E-03	1.97E-03	1.00E-02	5.92E-03	pCi/m3
9TP(335881002) - AP	11-Oct-13	BETA	4.95E-02	5.27E-03	1.53E-03	1.00E-02	5.37E-03	pCi/m3
9TP(336456002) - AP	18-Oct-13	BETA	3.06E-02	4.80E-03	1.76E-03	1.00E-02	4.84E-03	pCi/m3
9TP(336503002) - AP	24-Oct-13	BETA	2.41E-02	3.95E-03	1.52E-03	1.00E-02	3.98E-03	pCi/m3
9TP(337170002) - AP	31-Oct-13	BETA	3.77E-02	4.83E-03	1.61E-03	1.00E-02	4.89E-03	pCi/m3
9TP(337719002) - AP	8-Nov-13	BETA	3.88E-02	4.68E-03	1.48E-03	1.00E-02	4.75E-03	pCi/m3
9TP(338180002) - AP	15-Nov-13	BETA	4.30E-02	5.97E-03	2.04E-03	1.00E-02	6.03E-03	pCi/m3
9TP(338558002) - AP	21-Nov-13	BETA	3.01E-02	4.41E-03	1.48E-03	1.00E-02	4.45E-03	pCi/m3
9TP(338706002) - AP	28-Nov-13	BETA	4.57E-02	5.35E-03	1.46E-03	1.00E-02	5.43E-03	pCi/m3
9TP(339271002) - AP	5-Dec-13	BETA	5.25E-02	5.60E-03	1.47E-03	1.00E-02	5.70E-03	pCi/m3
9TP(339885002) - AP	12-Dec-13	BETA	5.47E-02	5.71E-03	1.44E-03	1.00E-02	5.82E-03	pCi/m3
9TP(340557002) - AP	19-Dec-13	BETA	3.61E-02	4.76E-03	1.50E-03	1.00E-02	4.81E-03	pCi/m3
9TP(340558002) - AP	26-Dec-13	BETA	4.67E-02	5.35E-03	1.48E-03	1.00E-02	5.43E-03	pCi/m3
9TP(323975002) - AP	8-Feb-13	Beryllium-7	1.00E-01	1.41E-02	7.33E-03		1.67E-02	pCi/m3
9TP(329805002) - AP	10-May-13	Beryllium-7	1.11E-01	1.82E-02	1.01E-02		2.06E-02	pCi/m3
9TP(335792002) - AP	8-Aug-13	Beryllium-7	1.17E-01	1.54E-02	8.90E-03		1.85E-02	pCi/m3
9TP(341183002) - AP	11-Nov-13	Beryllium-7	1.03E-01	1.49E-02	9.86E-03		1.84E-02	pCi/m3
9TP(323975002) - AP	8-Feb-13	Cesium-134	-6.50E-05	2.22E-04	3.56E-04	5.00E-02	2.24E-04	pCi/m3
9TP(329805002) - AP	10-May-13	Cesium-134	3.99E-04	3.55E-04	7.02E-04	5.00E-02	4.01E-04	pCi/m3
9TP(335792002) - AP	8-Aug-13	Cesium-134	-1.20E-04	3.27E-04	5.21E-04	5.00E-02	3.32E-04	pCi/m3
9TP(341183002) - AP	11-Nov-13	Cesium-134	4.23E-04	3.49E-04	6.71E-04	5.00E-02	4.01E-04	pCi/m3
9TP(323975002) - AP	8-Feb-13	Cesium-137	7.65E-05	2.69E-04	4.09E-04	6.00E-02	2.71E-04	pCi/m3
9TP(329805002) - AP	10-May-13	Cesium-137	2.92E-04	2.90E-04	5.67E-04	6.00E-02	3.19E-04	pCi/m3
9TP(335792002) - AP	8-Aug-13	Cesium-137	1.07E-06	3.07E-04	5.24E-04	6.00E-02	3.07E-04	pCi/m3
9TP(341183002) - AP	11-Nov-13	Cesium-137	-1.95E-05	3.40E-04	5.74E-04	6.00E-02	3.40E-04	pCi/m3

Apples
VG

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Apples(336212001) - VG	21-Oct-13	Cesium-134	1.41E-01	5.66E+00	9.30E+00	6.00E+01	5.67E+00	pCi/kg
Apples(336212001) - VG	21-Oct-13	Cesium-137	-1.37E+00	7.05E+00	8.82E+00	8.00E+01	7.07E+00	pCi/kg
Apples(336212001) - VG	21-Oct-13	Iodine-131	-7.53E+00	6.92E+00	1.13E+01	6.00E+01	7.73E+00	pCi/kg
Apples(336212001) - VG	21-Oct-13	Potassium-40	1.20E+03	1.35E+02	7.46E+01		1.71E+02	pCi/kg

Blueberries
VG

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Blueberries(329933001) - VG	16-Jul-13	Cesium-134	7.91E-01	2.66E+00	4.62E+00	6.00E+01	2.68E+00	pCi/kg

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Blueberries(329933001) - VG	16-Jul-13	Cesium-137	1.59E+00	3.44E+00	4.30E+00	8.00E+01	3.52E+00	pCi/kg
Blueberries(329933001) - VG	16-Jul-13	Iodine-131	-1.95E+00	4.29E+00	7.23E+00	6.00E+01	4.38E+00	pCi/kg
Blueberries(329933001) - VG	16-Jul-13	Potassium-40	7.15E+02	7.52E+01	3.72E+01		9.77E+01	pCi/kg

Broadleaf Vegetation BV1
VG

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Broadleaf Vegetation BV1(329588002) - VG	30-May-13	Beryllium-7	3.90E+02	7.41E+01	6.67E+01		8.05E+01	pCi/kg
Broadleaf Vegetation BV1(329588005) - VG	25-Jun-13	Beryllium-7	2.78E+03	1.39E+02	9.36E+01		2.63E+02	pCi/kg
Broadleaf Vegetation BV1(331850002) - VG	29-Jul-13	Beryllium-7	2.33E+03	1.74E+02	1.12E+02		2.62E+02	pCi/kg
Broadleaf Vegetation BV1(333703002) - VG	30-Aug-13	Beryllium-7	1.88E+03	1.10E+02	7.08E+01		1.89E+02	pCi/kg
Broadleaf Vegetation BV1(335498002) - VG	30-Sep-13	Beryllium-7	1.99E+03	1.63E+02	1.09E+02		2.46E+02	pCi/kg
Broadleaf Vegetation BV1(329588002) - VG	30-May-13	Cesium-134	2.26E+00	3.14E+00	5.41E+00	6.00E+01	3.31E+00	pCi/kg
Broadleaf Vegetation BV1(329588005) - VG	25-Jun-13	Cesium-134	3.60E-01	7.41E+00	1.10E+01	6.00E+01	7.41E+00	pCi/kg
Broadleaf Vegetation BV1(331850002) - VG	29-Jul-13	Cesium-134	-4.31E+00	1.01E+01	1.33E+01	6.00E+01	1.03E+01	pCi/kg
Broadleaf Vegetation BV1(333703002) - VG	30-Aug-13	Cesium-134	7.93E+00	4.25E+00	7.98E+00	6.00E+01	5.62E+00	pCi/kg
Broadleaf Vegetation BV1(335498002) - VG	30-Sep-13	Cesium-134	4.65E+00	1.24E+01	1.28E+01	6.00E+01	1.26E+01	pCi/kg
Broadleaf Vegetation BV1(329588002) - VG	30-May-13	Cesium-137	4.61E+00	4.38E+00	4.61E+00	8.00E+01	4.43E+00	pCi/kg
Broadleaf Vegetation BV1(329588005) - VG	25-Jun-13	Cesium-137	4.98E+01	9.92E+00	9.12E+00	8.00E+01	1.07E+01	pCi/kg
Broadleaf Vegetation BV1(331850002) - VG	29-Jul-13	Cesium-137	4.84E+01	1.16E+01	1.12E+01	8.00E+01	1.23E+01	pCi/kg
Broadleaf Vegetation BV1(333703002) - VG	30-Aug-13	Cesium-137	4.97E+01	7.74E+00	6.71E+00	8.00E+01	8.69E+00	pCi/kg
Broadleaf Vegetation BV1(335498002) - VG	30-Sep-13	Cesium-137	4.33E+01	1.16E+01	1.12E+01	8.00E+01	1.21E+01	pCi/kg
Broadleaf Vegetation BV1(329588002) - VG	30-May-13	Iodine-131	6.59E+01	1.71E+02	2.86E+02	6.00E+01	1.73E+02	pCi/kg
Broadleaf Vegetation BV1(329588005) - VG	25-Jun-13	Iodine-131	1.90E+01	3.59E+01	6.24E+01	6.00E+01	3.70E+01	pCi/kg
Broadleaf Vegetation BV1(331850002) - VG	29-Jul-13	Iodine-131	3.49E+01	4.96E+01	8.73E+01	6.00E+01	5.21E+01	pCi/kg
Broadleaf Vegetation BV1(333703002) - VG	30-Aug-13	Iodine-131	-9.72E+00	2.38E+01	4.01E+01	6.00E+01	2.42E+01	pCi/kg
Broadleaf Vegetation BV1(335498002) - VG	30-Sep-13	Iodine-131	-1.84E+01	2.55E+01	4.16E+01	6.00E+01	2.69E+01	pCi/kg
Broadleaf Vegetation BV1(329588002) - VG	30-May-13	Potassium-40	2.81E+03	1.31E+02	4.39E+01		2.80E+02	pCi/kg
Broadleaf Vegetation BV1(329588005) - VG	25-Jun-13	Potassium-40	1.79E+03	1.63E+02	7.74E+01		2.26E+02	pCi/kg
Broadleaf Vegetation BV1(331850002) - VG	29-Jul-13	Potassium-40	2.03E+03	2.29E+02	1.21E+02		2.99E+02	pCi/kg
Broadleaf Vegetation BV1(333703002) - VG	30-Aug-13	Potassium-40	2.46E+03	1.64E+02	6.94E+01		2.71E+02	pCi/kg
Broadleaf Vegetation BV1(335498002) - VG	30-Sep-13	Potassium-40	1.80E+03	2.09E+02	1.17E+02		2.69E+02	pCi/kg

Broadleaf Vegetation BV2
VG

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Broadleaf Vegetation BV2(329588003) - VG	30-May-13	Beryllium-7	1.18E+03	1.55E+02	1.16E+02		1.83E+02	pCi/kg
Broadleaf Vegetation BV2(329588006) - VG	25-Jun-13	Beryllium-7	9.42E+02	7.80E+01	6.60E+01		1.10E+02	pCi/kg
Broadleaf Vegetation BV2(331850003) - VG	29-Jul-13	Beryllium-7	7.85E+02	1.20E+02	1.16E+02		1.38E+02	pCi/kg
Broadleaf Vegetation BV2(333703003) - VG	30-Aug-13	Beryllium-7	1.02E+03	1.34E+02	9.21E+01		1.59E+02	pCi/kg
Broadleaf Vegetation BV2(335498003) - VG	30-Sep-13	Beryllium-7	1.66E+03	1.55E+02	1.06E+02		2.10E+02	pCi/kg
Broadleaf Vegetation BV2(329588003) - VG	30-May-13	Cesium-134	5.24E+00	8.80E+00	9.30E+00	6.00E+01	9.13E+00	pCi/kg
Broadleaf Vegetation BV2(329588006) - VG	25-Jun-13	Cesium-134	1.79E+00	4.43E+00	7.71E+00	6.00E+01	4.51E+00	pCi/kg
Broadleaf Vegetation BV2(331850003) - VG	29-Jul-13	Cesium-134	4.33E-01	6.71E+00	1.15E+01	6.00E+01	6.72E+00	pCi/kg
Broadleaf Vegetation BV2(333703003) - VG	30-Aug-13	Cesium-134	1.13E+01	1.15E+01	1.13E+01	6.00E+01	1.32E+01	pCi/kg

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Broadleaf Vegetation BV2(335498003) - VG	30-Sep-13	Cesium-134	1.07E+01	9.20E+00	1.48E+01	6.00E+01	1.04E+01	pCi/kg
Broadleaf Vegetation BV2(329588003) - VG	30-May-13	Cesium-137	5.16E+01	1.32E+01	8.33E+00	8.00E+01	1.38E+01	pCi/kg
Broadleaf Vegetation BV2(329588006) - VG	25-Jun-13	Cesium-137	2.58E+00	4.46E+00	7.57E+00	8.00E+01	4.61E+00	pCi/kg
Broadleaf Vegetation BV2(331850003) - VG	29-Jul-13	Cesium-137	-1.11E+01	1.23E+01	1.08E+01	8.00E+01	1.33E+01	pCi/kg
Broadleaf Vegetation BV2(333703003) - VG	30-Aug-13	Cesium-137	8.15E+00	1.14E+01	9.22E+00	8.00E+01	1.14E+01	pCi/kg
Broadleaf Vegetation BV2(335498003) - VG	30-Sep-13	Cesium-137	9.29E+00	1.47E+01	1.30E+01	8.00E+01	1.47E+01	pCi/kg
Broadleaf Vegetation BV2(329588003) - VG	30-May-13	Iodine-131	3.44E+02	3.37E+02	5.22E+02	6.00E+01	3.72E+02	pCi/kg
Broadleaf Vegetation BV2(329588006) - VG	25-Jun-13	Iodine-131	-1.18E+01	2.35E+01	3.77E+01	6.00E+01	2.41E+01	pCi/kg
Broadleaf Vegetation BV2(331850003) - VG	29-Jul-13	Iodine-131	-5.46E+01	7.04E+01	1.12E+02	6.00E+01	7.47E+01	pCi/kg
Broadleaf Vegetation BV2(333703003) - VG	30-Aug-13	Iodine-131	1.77E+01	3.40E+01	5.81E+01	6.00E+01	3.49E+01	pCi/kg
Broadleaf Vegetation BV2(335498003) - VG	30-Sep-13	Iodine-131	-1.19E+00	2.75E+01	4.03E+01	6.00E+01	2.75E+01	pCi/kg
Broadleaf Vegetation BV2(329588003) - VG	30-May-13	Potassium-40	1.76E+03	1.79E+02	8.24E+01		2.37E+02	pCi/kg
Broadleaf Vegetation BV2(329588006) - VG	25-Jun-13	Potassium-40	2.34E+03	1.55E+02	6.95E+01		2.64E+02	pCi/kg
Broadleaf Vegetation BV2(331850003) - VG	29-Jul-13	Potassium-40	3.51E+03	2.34E+02	9.84E+01		3.99E+02	pCi/kg
Broadleaf Vegetation BV2(333703003) - VG	30-Aug-13	Potassium-40	3.73E+03	2.13E+02	8.07E+01		3.95E+02	pCi/kg
Broadleaf Vegetation BV2(335498003) - VG	30-Sep-13	Potassium-40	3.22E+03	2.58E+02	1.04E+02		3.81E+02	pCi/kg

Broadleaf Vegetation Control BVC1
VG

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Broadleaf Vegetation Control BVC1(329588001) - VG	30-May-13	Beryllium-7	1.07E+03	6.73E+01	4.71E+01		1.10E+02	pCi/kg
Broadleaf Vegetation Control BVC1(329588004) - VG	25-Jun-13	Beryllium-7	1.16E+03	7.29E+01	5.35E+01		1.19E+02	pCi/kg
Broadleaf Vegetation Control BVC1(331850001) - VG	29-Jul-13	Beryllium-7	1.59E+03	1.08E+02	7.17E+01		1.68E+02	pCi/kg
Broadleaf Vegetation Control BVC1(333703001) - VG	30-Aug-13	Beryllium-7	3.35E+03	1.46E+02	8.75E+01		3.19E+02	pCi/kg
Broadleaf Vegetation Control BVC1(335498001) - VG	30-Sep-13	Beryllium-7	1.83E+03	1.02E+02	6.51E+01		1.81E+02	pCi/kg
Broadleaf Vegetation Control BVC1(329588001) - VG	30-May-13	Cesium-134	-2.39E+00	3.47E+00	4.05E+00	6.00E+01	3.64E+00	pCi/kg
Broadleaf Vegetation Control BVC1(329588004) - VG	25-Jun-13	Cesium-134	-8.01E-01	3.48E+00	5.70E+00	6.00E+01	3.50E+00	pCi/kg
Broadleaf Vegetation Control BVC1(331850001) - VG	29-Jul-13	Cesium-134	1.77E-01	4.40E+00	7.50E+00	6.00E+01	4.40E+00	pCi/kg
Broadleaf Vegetation Control BVC1(333703001) - VG	30-Aug-13	Cesium-134	7.69E+00	6.18E+00	9.85E+00	6.00E+01	7.13E+00	pCi/kg
Broadleaf Vegetation Control BVC1(335498001) - VG	30-Sep-13	Cesium-134	-4.72E+00	6.30E+00	7.29E+00	6.00E+01	6.67E+00	pCi/kg
Broadleaf Vegetation Control BVC1(329588001) - VG	30-May-13	Cesium-137	5.88E-01	4.06E+00	3.50E+00	8.00E+01	4.06E+00	pCi/kg
Broadleaf Vegetation Control BVC1(329588004) - VG	25-Jun-13	Cesium-137	8.81E-01	5.66E+00	5.44E+00	8.00E+01	5.67E+00	pCi/kg
Broadleaf Vegetation Control BVC1(331850001) - VG	29-Jul-13	Cesium-137	2.84E+00	4.94E+00	7.18E+00	8.00E+01	4.95E+00	pCi/kg
Broadleaf Vegetation Control BVC1(333703001) - VG	30-Aug-13	Cesium-137	-1.12E+00	7.48E+00	9.29E+00	8.00E+01	7.49E+00	pCi/kg
Broadleaf Vegetation Control BVC1(335498001) - VG	30-Sep-13	Cesium-137	4.55E-01	3.86E+00	6.58E+00	8.00E+01	3.86E+00	pCi/kg
Broadleaf Vegetation Control BVC1(329588001) - VG	30-May-13	Iodine-131	-3.38E+01	1.22E+02	2.03E+02	6.00E+01	1.23E+02	pCi/kg
Broadleaf Vegetation Control BVC1(329588004) - VG	25-Jun-13	Iodine-131	-1.90E+01	1.86E+01	2.93E+01	6.00E+01	2.05E+01	pCi/kg
Broadleaf Vegetation Control BVC1(331850001) - VG	29-Jul-13	Iodine-131	-1.93E+01	3.23E+01	5.38E+01	6.00E+01	3.35E+01	pCi/kg
Broadleaf Vegetation Control BVC1(333703001) - VG	30-Aug-13	Iodine-131	5.26E+00	3.18E+01	5.23E+01	6.00E+01	3.19E+01	pCi/kg
Broadleaf Vegetation Control BVC1(335498001) - VG	30-Sep-13	Iodine-131	-3.84E+00	1.43E+01	2.34E+01	6.00E+01	1.45E+01	pCi/kg
Broadleaf Vegetation Control BVC1(329588001) - VG	30-May-13	Potassium-40	3.06E+03	1.14E+02	3.42E+01		2.98E+02	pCi/kg
Broadleaf Vegetation Control BVC1(329588004) - VG	25-Jun-13	Potassium-40	3.53E+03	1.54E+02	5.05E+01		3.64E+02	pCi/kg
Broadleaf Vegetation Control BVC1(331850001) - VG	29-Jul-13	Potassium-40	4.44E+03	1.91E+02	6.49E+01		4.56E+02	pCi/kg
Broadleaf Vegetation Control BVC1(333703001) - VG	30-Aug-13	Potassium-40	2.86E+03	2.01E+02	8.26E+01		3.21E+02	pCi/kg
Broadleaf Vegetation Control BVC1(335498001) - VG	30-Sep-13	Potassium-40	2.67E+03	1.66E+02	5.93E+01		2.88E+02	pCi/kg

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Domestic Water - DW
DW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Domestic Water - DW(320029002) - DW	15-Jan-13	BETA	2.28E+00	1.91E+00	2.58E+00	4.00E+00	1.94E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	BETA	2.07E+00	2.15E+00	3.39E+00	4.00E+00	2.18E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	BETA	6.00E-01	1.63E+00	2.55E+00	4.00E+00	1.63E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	BETA	2.83E+00	2.36E+00	3.61E+00	4.00E+00	2.41E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	BETA	-4.63E-01	1.63E+00	2.89E+00	4.00E+00	1.63E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	BETA	2.51E+00	2.04E+00	2.80E+00	4.00E+00	2.08E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	BETA	-1.52E+00	1.42E+00	2.84E+00	4.00E+00	1.42E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	BETA	2.39E+00	1.92E+00	2.78E+00	4.00E+00	1.95E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	BETA	-2.18E-01	1.74E+00	2.93E+00	4.00E+00	1.74E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	BETA	1.08E+00	1.75E+00	2.62E+00	4.00E+00	1.76E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	BETA	4.64E-01	1.78E+00	2.81E+00	4.00E+00	1.78E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	BETA	1.71E+00	2.07E+00	3.17E+00	4.00E+00	2.08E+00	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Barium-140	-4.39E-01	4.61E+00	7.76E+00	1.50E+01	4.61E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Barium-140	-1.07E+00	5.10E+00	8.50E+00	1.50E+01	5.12E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Barium-140	1.24E+00	5.29E+00	9.15E+00	1.50E+01	5.32E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Barium-140	-1.09E+00	4.16E+00	6.92E+00	1.50E+01	4.19E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Barium-140	5.03E+00	5.95E+00	9.24E+00	1.50E+01	6.38E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Barium-140	-3.48E+00	7.84E+00	1.28E+01	1.50E+01	8.00E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Barium-140	5.38E+00	1.00E+01	1.70E+01	1.50E+01	1.03E+01	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Barium-140	3.38E+00	7.41E+00	1.29E+01	1.50E+01	7.57E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Barium-140	-6.01E+00	6.85E+00	1.09E+01	1.50E+01	7.38E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Barium-140	1.60E+00	7.24E+00	1.24E+01	1.50E+01	7.28E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Barium-140	-2.04E+00	3.70E+00	5.93E+00	1.50E+01	3.82E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Barium-140	-6.23E+00	1.04E+01	7.80E+00	1.50E+01	1.07E+01	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Cesium-134	-1.19E-01	1.06E+00	1.79E+00	1.50E+01	1.06E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Cesium-134	7.91E-01	1.38E+00	2.38E+00	1.50E+01	1.43E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Cesium-134	1.24E+00	1.43E+00	2.30E+00	1.50E+01	1.54E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Cesium-134	2.40E-01	1.19E+00	2.06E+00	1.50E+01	1.19E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Cesium-134	7.53E-01	1.19E+00	2.11E+00	1.50E+01	1.24E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Cesium-134	4.31E-01	1.20E+00	1.82E+00	1.50E+01	1.21E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Cesium-134	8.15E-01	1.70E+00	1.88E+00	1.50E+01	1.74E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Cesium-134	1.64E+00	1.23E+00	1.64E+00	1.50E+01	1.47E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Cesium-134	-5.39E-01	1.10E+00	1.76E+00	1.50E+01	1.13E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Cesium-134	7.68E-02	1.04E+00	1.79E+00	1.50E+01	1.04E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Cesium-134	1.33E+00	1.07E+00	1.65E+00	1.50E+01	1.23E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Cesium-134	-5.99E-01	8.94E-01	1.47E+00	1.50E+01	9.36E-01	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Cesium-137	9.15E-01	1.51E+00	1.63E+00	1.80E+01	1.51E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Cesium-137	-1.26E+00	2.06E+00	2.16E+00	1.80E+01	2.13E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Cesium-137	-8.48E-01	1.56E+00	2.11E+00	1.80E+01	1.61E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Cesium-137	2.46E-02	1.16E+00	1.92E+00	1.80E+01	1.16E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Cesium-137	4.84E-01	1.11E+00	1.68E+00	1.80E+01	1.11E+00	pCi/L

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Domestic Water - DW(329516003) - DW	15-Jun-13	Cesium-137	-1.03E+00	1.64E+00	1.75E+00	1.80E+01	1.71E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Cesium-137	1.39E+00	2.30E+00	1.68E+00	1.80E+01	2.30E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Cesium-137	9.04E-01	8.70E-01	1.50E+00	1.80E+01	9.64E-01	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Cesium-137	-3.95E-02	1.11E+00	1.87E+00	1.80E+01	1.11E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Cesium-137	-1.31E-01	9.88E-01	1.63E+00	1.80E+01	9.90E-01	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Cesium-137	3.09E-01	9.72E-01	1.69E+00	1.80E+01	9.82E-01	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Cesium-137	2.68E-01	8.52E-01	1.42E+00	1.80E+01	8.61E-01	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Cobalt-58	4.00E-02	1.11E+00	1.89E+00	1.50E+01	1.11E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Cobalt-58	-4.56E-01	1.49E+00	2.43E+00	1.50E+01	1.51E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Cobalt-58	-5.00E-01	1.45E+00	2.32E+00	1.50E+01	1.47E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Cobalt-58	-2.72E-01	1.28E+00	2.17E+00	1.50E+01	1.29E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Cobalt-58	8.59E-02	1.32E+00	1.96E+00	1.50E+01	1.32E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Cobalt-58	-1.04E-01	1.49E+00	2.20E+00	1.50E+01	1.49E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Cobalt-58	-8.51E-01	1.41E+00	2.25E+00	1.50E+01	1.46E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Cobalt-58	1.19E+00	1.12E+00	2.02E+00	1.50E+01	1.25E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Cobalt-58	4.98E-01	1.24E+00	2.11E+00	1.50E+01	1.26E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Cobalt-58	3.07E-01	1.20E+00	2.08E+00	1.50E+01	1.21E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Cobalt-58	-8.21E-01	1.06E+00	1.71E+00	1.50E+01	1.13E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Cobalt-58	3.04E-01	1.04E+00	1.80E+00	1.50E+01	1.05E+00	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Cobalt-60	1.17E+00	1.19E+00	2.12E+00	1.50E+01	1.31E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Cobalt-60	1.02E-01	1.27E+00	2.12E+00	1.50E+01	1.27E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Cobalt-60	6.88E-03	1.45E+00	2.06E+00	1.50E+01	1.45E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Cobalt-60	1.64E+00	1.25E+00	2.17E+00	1.50E+01	1.46E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Cobalt-60	-2.62E-01	1.13E+00	1.91E+00	1.50E+01	1.14E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Cobalt-60	4.19E-01	1.06E+00	1.80E+00	1.50E+01	1.07E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Cobalt-60	-2.86E+00	2.37E+00	2.24E+00	1.50E+01	2.71E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Cobalt-60	-4.24E-01	8.64E-01	1.42E+00	1.50E+01	8.85E-01	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Cobalt-60	8.87E-01	1.32E+00	2.02E+00	1.50E+01	1.38E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Cobalt-60	1.34E-02	8.93E-01	1.52E+00	1.50E+01	8.93E-01	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Cobalt-60	2.81E-01	9.63E-01	1.67E+00	1.50E+01	9.72E-01	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Cobalt-60	-9.79E-01	1.87E+00	1.52E+00	1.50E+01	1.92E+00	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Iron-59	2.20E+00	2.52E+00	4.07E+00	3.00E+01	2.73E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Iron-59	9.12E-01	3.07E+00	5.30E+00	3.00E+01	3.10E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Iron-59	-4.88E-02	3.26E+00	5.48E+00	3.00E+01	3.26E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Iron-59	1.61E+00	2.73E+00	4.79E+00	3.00E+01	2.83E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Iron-59	4.36E-01	3.20E+00	5.38E+00	3.00E+01	3.21E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Iron-59	7.89E-02	3.40E+00	5.71E+00	3.00E+01	3.40E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Iron-59	4.18E+00	3.50E+00	6.28E+00	3.00E+01	4.02E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Iron-59	-1.09E+00	2.69E+00	4.34E+00	3.00E+01	2.74E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Iron-59	-8.94E-02	3.01E+00	5.08E+00	3.00E+01	3.01E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Iron-59	-2.00E+00	2.83E+00	4.49E+00	3.00E+01	2.98E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Iron-59	-5.69E-01	2.49E+00	4.04E+00	3.00E+01	2.50E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Iron-59	9.98E-01	2.55E+00	4.35E+00	3.00E+01	2.59E+00	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Lanthanum-140	-4.39E-01	4.61E+00	7.76E+00	1.50E+01	4.61E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Lanthanum-140	-1.07E+00	5.10E+00	8.50E+00	1.50E+01	5.12E+00	pCi/L

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Domestic Water - DW(323176002) - DW	15-Mar-13	Lanthanum-140	1.24E+00	5.29E+00	9.15E+00	1.50E+01	5.32E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Lanthanum-140	-1.09E+00	4.16E+00	6.92E+00	1.50E+01	4.19E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Lanthanum-140	5.03E+00	5.95E+00	9.24E+00	1.50E+01	6.38E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Lanthanum-140	-3.48E+00	7.84E+00	1.28E+01	1.50E+01	8.00E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Lanthanum-140	5.38E+00	1.00E+01	1.70E+01	1.50E+01	1.03E+01	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Lanthanum-140	3.38E+00	7.41E+00	1.29E+01	1.50E+01	7.57E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Lanthanum-140	-6.01E+00	6.85E+00	1.09E+01	1.50E+01	7.38E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Lanthanum-140	1.60E+00	7.24E+00	1.24E+01	1.50E+01	7.28E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Lanthanum-140	-2.04E+00	3.70E+00	5.93E+00	1.50E+01	3.82E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Lanthanum-140	-6.23E+00	1.04E+01	7.80E+00	1.50E+01	1.07E+01	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Manganese-54	-1.48E+00	9.47E-01	1.42E+00	1.50E+01	1.17E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Manganese-54	3.92E-01	1.23E+00	2.07E+00	1.50E+01	1.24E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Manganese-54	1.55E-01	1.31E+00	2.17E+00	1.50E+01	1.31E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Manganese-54	6.05E-01	1.08E+00	1.91E+00	1.50E+01	1.11E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Manganese-54	-6.00E-01	1.44E+00	1.85E+00	1.50E+01	1.47E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Manganese-54	-5.18E-01	9.99E-01	1.66E+00	1.50E+01	1.03E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Manganese-54	2.06E-01	1.25E+00	1.80E+00	1.50E+01	1.25E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Manganese-54	1.07E+00	1.38E+00	1.53E+00	1.50E+01	1.47E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Manganese-54	1.88E-01	1.04E+00	1.73E+00	1.50E+01	1.04E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Manganese-54	1.23E-01	1.08E+00	1.66E+00	1.50E+01	1.08E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Manganese-54	-3.96E-01	9.23E-01	1.51E+00	1.50E+01	9.41E-01	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Manganese-54	-1.29E-01	8.88E-01	1.50E+00	1.50E+01	8.90E-01	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Niobium-95	1.79E+00	1.54E+00	1.79E+00	1.50E+01	1.56E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Niobium-95	1.19E+00	1.54E+00	2.68E+00	1.50E+01	1.63E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Niobium-95	-4.24E-01	1.43E+00	2.31E+00	1.50E+01	1.44E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Niobium-95	2.11E+00	1.76E+00	2.17E+00	1.50E+01	1.77E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Niobium-95	1.90E+00	1.64E+00	2.33E+00	1.50E+01	1.65E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Niobium-95	2.95E-01	1.42E+00	2.36E+00	1.50E+01	1.43E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Niobium-95	1.88E+00	2.34E+00	2.26E+00	1.50E+01	2.35E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Niobium-95	-5.98E-01	1.09E+00	1.80E+00	1.50E+01	1.13E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Niobium-95	8.57E-02	1.35E+00	2.25E+00	1.50E+01	1.35E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Niobium-95	7.83E-01	1.19E+00	2.11E+00	1.50E+01	1.25E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Niobium-95	-1.83E+00	1.87E+00	1.91E+00	1.50E+01	2.05E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Niobium-95	7.43E-01	1.21E+00	1.89E+00	1.50E+01	1.26E+00	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Tritium	1.07E+02	3.22E+02	5.21E+02	2.00E+03	3.23E+02	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Tritium	3.03E+02	3.11E+02	4.66E+02	2.00E+03	3.17E+02	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Tritium	-7.10E+01	1.71E+02	2.97E+02	2.00E+03	1.71E+02	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Tritium	1.67E+02	2.80E+02	4.34E+02	2.00E+03	2.82E+02	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Tritium	1.09E+02	2.83E+02	4.54E+02	2.00E+03	2.84E+02	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Tritium	7.40E+01	3.07E+02	5.01E+02	2.00E+03	3.07E+02	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Tritium	2.51E+02	3.27E+02	5.10E+02	2.00E+03	3.30E+02	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Tritium	1.33E+02	2.80E+02	4.46E+02	2.00E+03	2.81E+02	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Tritium	-1.22E+01	2.97E+02	5.00E+02	2.00E+03	2.97E+02	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Tritium	-1.34E+02	3.18E+02	5.56E+02	2.00E+03	3.18E+02	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Tritium	2.24E+01	2.40E+02	4.00E+02	2.00E+03	2.40E+02	pCi/L

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Domestic Water - DW(341025002) - DW	15-Dec-13	Tritium	-4.71E+01	3.27E+02	5.57E+02	2.00E+03	3.27E+02	pCi/L
Domestic Water - DW(320029002) - DW	15-Jan-13	Zinc-65	-2.49E+00	2.13E+00	3.16E+00	3.00E+01	2.42E+00	pCi/L
Domestic Water - DW(321563002) - DW	14-Feb-13	Zinc-65	-2.90E-01	3.00E+00	4.31E+00	3.00E+01	3.00E+00	pCi/L
Domestic Water - DW(323176002) - DW	15-Mar-13	Zinc-65	-2.27E+00	2.84E+00	4.48E+00	3.00E+01	3.03E+00	pCi/L
Domestic Water - DW(325263002) - DW	15-Apr-13	Zinc-65	-2.74E+00	2.34E+00	3.57E+00	3.00E+01	2.66E+00	pCi/L
Domestic Water - DW(327460002) - DW	15-May-13	Zinc-65	4.62E-01	2.33E+00	3.93E+00	3.00E+01	2.34E+00	pCi/L
Domestic Water - DW(329516003) - DW	15-Jun-13	Zinc-65	1.65E+00	2.28E+00	4.00E+00	3.00E+01	2.41E+00	pCi/L
Domestic Water - DW(331850007) - DW	15-Jul-13	Zinc-65	-4.42E+00	2.64E+00	4.04E+00	3.00E+01	3.36E+00	pCi/L
Domestic Water - DW(333703007) - DW	15-Aug-13	Zinc-65	4.95E-01	2.16E+00	3.16E+00	3.00E+01	2.17E+00	pCi/L
Domestic Water - DW(335498005) - DW	15-Sep-13	Zinc-65	-1.49E+00	2.37E+00	3.84E+00	3.00E+01	2.47E+00	pCi/L
Domestic Water - DW(337640002) - DW	15-Oct-13	Zinc-65	-6.43E-01	2.05E+00	3.34E+00	3.00E+01	2.07E+00	pCi/L
Domestic Water - DW(338704002) - DW	15-Nov-13	Zinc-65	1.37E+00	2.08E+00	3.17E+00	3.00E+01	2.18E+00	pCi/L
Domestic Water - DW(341025002) - DW	15-Dec-13	Zinc-65	2.92E+00	2.36E+00	2.92E+00	3.00E+01	2.40E+00	pCi/L

Fish Palisades Bass
FH

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Fish Palisades Bass(336861001) - FH	25-Sep-13	Cesium-134	3.85E-01	2.18E+00	3.21E+00	1.30E+02	2.19E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Cesium-137	5.48E+00	3.72E+00	3.02E+00	1.50E+02	3.74E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Cobalt-58	7.90E-01	2.39E+00	3.85E+00	1.30E+02	2.42E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Cobalt-60	8.24E-01	1.87E+00	3.25E+00	1.30E+02	1.91E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Iodine-131	-1.36E+01	5.73E+01	9.41E+01	6.00E+01	5.77E+01	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Iron-59	5.85E+00	7.72E+00	1.16E+01	2.60E+02	8.22E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Manganese-54	-1.06E+00	1.79E+00	2.92E+00	1.30E+02	1.86E+00	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Potassium-40	2.46E+03	9.07E+01	2.21E+01	5.00E+02	2.39E+02	pCi/kg
Fish Palisades Bass(336861001) - FH	25-Sep-13	Zinc-65	1.10E+00	5.16E+00	7.41E+00	2.60E+02	5.19E+00	pCi/kg

Fish Palisades Carp
FH

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Fish Palisades Carp(329933002) - FH	28-Jun-13	Cesium-134	6.54E-01	2.61E+00	4.21E+00	1.30E+02	2.63E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Cesium-134	1.48E-01	2.12E+00	3.64E+00	1.30E+02	2.12E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Cesium-137	8.58E+00	3.73E+00	3.40E+00	1.50E+02	3.79E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Cesium-137	2.04E+00	3.32E+00	3.41E+00	1.50E+02	3.32E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Cobalt-58	1.60E-01	2.84E+00	4.52E+00	1.30E+02	2.84E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Cobalt-58	6.65E-01	2.72E+00	4.70E+00	1.30E+02	2.74E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Cobalt-60	-6.90E-01	2.65E+00	3.68E+00	1.30E+02	2.67E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Cobalt-60	1.45E+00	2.10E+00	3.72E+00	1.30E+02	2.20E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Iodine-131	-1.28E+01	1.61E+01	2.69E+01	6.00E+01	1.72E+01	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Iodine-131	7.02E+01	7.24E+01	1.09E+02	6.00E+01	7.93E+01	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Iron-59	1.18E-01	8.22E+00	1.07E+01	2.60E+02	8.22E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Iron-59	-2.82E+00	7.90E+00	1.30E+01	2.60E+02	8.01E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Manganese-54	-7.36E-01	2.29E+00	3.86E+00	1.30E+02	2.31E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Manganese-54	-2.10E-01	2.03E+00	3.45E+00	1.30E+02	2.03E+00	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Potassium-40	2.88E+03	9.83E+01	3.08E+01		2.69E+02	pCi/kg

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Fish Palisades Carp(336861003) - FH	25-Sep-13	Potassium-40	2.45E+03	9.47E+01	2.68E+01	5.00E+02	2.44E+02	pCi/kg
Fish Palisades Carp(329933002) - FH	28-Jun-13	Zinc-65	-3.87E-01	5.29E+00	8.86E+00	2.60E+02	5.29E+00	pCi/kg
Fish Palisades Carp(336861003) - FH	25-Sep-13	Zinc-65	-3.03E+00	5.46E+00	8.87E+00	2.60E+02	5.65E+00	pCi/kg

Fish Palisades Catfish

FH

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Cesium-134	1.11E-01	2.40E+00	3.98E+00	1.30E+02	2.40E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Cesium-137	1.23E+01	3.79E+00	3.62E+00	1.50E+02	3.92E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Cobalt-58	1.33E+00	3.35E+00	4.93E+00	1.30E+02	3.41E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Cobalt-60	-5.27E-01	2.50E+00	4.10E+00	1.30E+02	2.51E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Iodine-131	5.37E+01	7.82E+01	1.33E+02	6.00E+01	8.20E+01	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Iron-59	1.68E+00	8.71E+00	1.49E+01	2.60E+02	8.75E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Manganese-54	2.69E-01	2.37E+00	3.94E+00	1.30E+02	2.38E+00	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Potassium-40	2.38E+03	1.01E+02	3.41E+01	5.00E+02	2.32E+02	pCi/kg
Fish Palisades Catfish(336861002) - FH	25-Sep-13	Zinc-65	-3.65E+00	5.98E+00	9.79E+00	2.60E+02	6.23E+00	pCi/kg

Fish Palisades Suckers

FH

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Cesium-134	6.68E-01	1.72E+00	2.70E+00	1.30E+02	1.75E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Cesium-137	6.66E+00	2.44E+00	2.66E+00	1.50E+02	2.50E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Cobalt-58	7.50E-01	3.11E+00	2.76E+00	1.30E+02	3.11E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Cobalt-60	4.87E-01	2.45E+00	3.13E+00	1.30E+02	2.46E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Iodine-131	7.97E+00	1.13E+01	1.91E+01	6.00E+01	1.18E+01	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Iron-59	-2.05E+00	5.22E+00	8.41E+00	2.60E+02	5.32E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Manganese-54	-5.35E-01	1.57E+00	2.57E+00	1.30E+02	1.59E+00	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Potassium-40	2.70E+03	8.50E+01	2.26E+01		2.53E+02	pCi/kg
Fish Palisades Suckers(329933003) - FH	28-Jun-13	Zinc-65	-3.66E+00	4.38E+00	6.87E+00	2.60E+02	4.72E+00	pCi/kg

Lake In - LKIN

SW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Lake In - LKIN(320029001) - SW	15-Jan-13	BETA	8.15E-01	1.46E+00	2.17E+00	4.00E+00	1.47E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	BETA	-1.49E+00	1.98E+00	3.49E+00	4.00E+00	1.98E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	BETA	2.70E-01	1.63E+00	2.65E+00	4.00E+00	1.63E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	BETA	2.52E+00	2.34E+00	3.39E+00	4.00E+00	2.37E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	BETA	1.64E+00	2.10E+00	3.04E+00	4.00E+00	2.12E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	BETA	1.36E+00	1.94E+00	2.89E+00	4.00E+00	1.96E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	BETA	-9.27E-01	1.80E+00	3.23E+00	4.00E+00	1.80E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	BETA	8.20E-01	1.95E+00	3.14E+00	4.00E+00	1.95E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	BETA	7.08E-01	1.92E+00	2.90E+00	4.00E+00	1.92E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	BETA	2.43E+00	1.80E+00	2.26E+00	4.00E+00	1.85E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	BETA	5.36E-01	1.80E+00	2.84E+00	4.00E+00	1.80E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	BETA	2.10E+00	2.14E+00	3.23E+00	4.00E+00	2.16E+00	pCi/L

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Lake In - LKIN(320029001) - SW	15-Jan-13	Barium-140	2.57E+00	4.22E+00	7.55E+00	1.50E+01	4.38E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Barium-140	2.06E+00	3.99E+00	6.98E+00	1.50E+01	4.10E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Barium-140	4.61E-01	4.95E+00	8.47E+00	1.50E+01	4.95E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Barium-140	-8.62E-01	5.20E+00	8.68E+00	1.50E+01	5.22E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Barium-140	7.37E-01	7.04E+00	1.20E+01	1.50E+01	7.05E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Barium-140	-1.94E+00	8.42E+00	1.20E+01	1.50E+01	8.46E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Barium-140	4.86E+00	7.08E+00	1.25E+01	1.50E+01	7.42E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Barium-140	5.79E-01	7.71E+00	1.29E+01	1.50E+01	7.71E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Barium-140	1.01E+00	6.10E+00	1.04E+01	1.50E+01	6.12E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Barium-140	1.09E+01	7.72E+00	1.45E+01	1.50E+01	9.19E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Barium-140	1.96E-01	5.07E+00	8.49E+00	1.50E+01	5.08E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Barium-140	-1.31E+00	6.33E+00	1.05E+01	1.50E+01	6.36E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Cesium-134	-2.72E-01	1.00E+00	1.68E+00	1.50E+01	1.01E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Cesium-134	-3.15E-01	1.06E+00	1.75E+00	1.50E+01	1.07E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Cesium-134	-2.65E-02	2.15E+00	2.24E+00	1.50E+01	2.15E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Cesium-134	-2.08E-01	1.40E+00	2.29E+00	1.50E+01	1.40E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Cesium-134	-5.52E-01	1.31E+00	2.11E+00	1.50E+01	1.33E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Cesium-134	3.06E-01	1.12E+00	1.81E+00	1.50E+01	1.13E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Cesium-134	1.57E+00	8.44E-01	1.57E+00	1.50E+01	1.12E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Cesium-134	-4.04E-01	9.41E-01	1.55E+00	1.50E+01	9.59E-01	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Cesium-134	2.73E-01	1.02E+00	1.60E+00	1.50E+01	1.02E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Cesium-134	9.10E-01	1.10E+00	1.91E+00	1.50E+01	1.18E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Cesium-134	1.00E+00	1.02E+00	1.77E+00	1.50E+01	1.12E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Cesium-134	2.83E-01	1.10E+00	1.91E+00	1.50E+01	1.11E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Cesium-137	-8.13E-01	1.45E+00	1.63E+00	1.80E+01	1.50E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Cesium-137	1.63E+00	1.98E+00	1.63E+00	1.80E+01	1.98E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Cesium-137	3.42E-01	1.32E+00	1.98E+00	1.80E+01	1.33E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Cesium-137	1.26E+00	1.44E+00	2.13E+00	1.80E+01	1.44E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Cesium-137	-1.87E+00	2.05E+00	2.47E+00	1.80E+01	2.22E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Cesium-137	-2.68E+00	1.81E+00	1.64E+00	1.80E+01	2.19E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Cesium-137	1.13E-01	8.21E-01	1.40E+00	1.80E+01	8.22E-01	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Cesium-137	-4.61E-01	1.56E+00	1.89E+00	1.80E+01	1.57E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Cesium-137	-3.03E-01	9.00E-01	1.52E+00	1.80E+01	9.11E-01	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Cesium-137	1.72E-01	1.74E+00	1.82E+00	1.80E+01	1.75E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Cesium-137	-2.41E+00	2.27E+00	1.58E+00	1.80E+01	2.52E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Cesium-137	-4.76E-01	1.04E+00	1.69E+00	1.80E+01	1.07E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Cobalt-58	2.67E-01	1.06E+00	1.84E+00	1.50E+01	1.07E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Cobalt-58	2.60E-01	1.28E+00	1.91E+00	1.50E+01	1.29E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Cobalt-58	9.15E-01	1.36E+00	2.10E+00	1.50E+01	1.42E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Cobalt-58	1.18E+00	1.41E+00	2.46E+00	1.50E+01	1.51E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Cobalt-58	7.14E-01	1.53E+00	2.60E+00	1.50E+01	1.56E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Cobalt-58	2.92E-01	1.16E+00	1.97E+00	1.50E+01	1.17E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Cobalt-58	2.39E-01	1.22E+00	1.80E+00	1.50E+01	1.22E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Cobalt-58	1.42E-01	1.08E+00	1.83E+00	1.50E+01	1.08E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Cobalt-58	-7.95E-02	1.34E+00	1.72E+00	1.50E+01	1.35E+00	pCi/L

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Lake In - LKIN(337640001) - SW	15-Oct-13	Cobalt-58	1.34E+00	9.80E-01	2.28E+00	1.50E+01	9.88E-01	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Cobalt-58	-3.25E-01	1.11E+00	1.79E+00	1.50E+01	1.12E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Cobalt-58	-3.56E-01	1.64E+00	2.12E+00	1.50E+01	1.65E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Cobalt-60	7.68E-01	9.64E-01	1.70E+00	1.50E+01	1.03E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Cobalt-60	-2.80E-01	1.05E+00	1.74E+00	1.50E+01	1.06E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Cobalt-60	-6.56E-01	1.24E+00	1.60E+00	1.50E+01	1.28E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Cobalt-60	4.77E-01	1.32E+00	2.26E+00	1.50E+01	1.34E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Cobalt-60	2.71E-01	1.33E+00	1.94E+00	1.50E+01	1.33E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Cobalt-60	7.92E-01	1.02E+00	1.78E+00	1.50E+01	1.08E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Cobalt-60	6.35E-01	8.08E-01	1.45E+00	1.50E+01	8.59E-01	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Cobalt-60	-3.26E-01	9.79E-01	1.37E+00	1.50E+01	9.91E-01	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Cobalt-60	-1.10E-01	9.98E-01	1.69E+00	1.50E+01	9.99E-01	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Cobalt-60	-1.86E-01	1.18E+00	1.65E+00	1.50E+01	1.19E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Cobalt-60	-4.10E-02	9.85E-01	1.65E+00	1.50E+01	9.85E-01	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Cobalt-60	6.83E-01	1.05E+00	1.82E+00	1.50E+01	1.09E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Iron-59	2.95E-01	2.34E+00	3.95E+00	3.00E+01	2.35E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Iron-59	1.51E-01	2.58E+00	4.26E+00	3.00E+01	2.58E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Iron-59	-3.60E-01	3.01E+00	5.04E+00	3.00E+01	3.02E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Iron-59	-5.52E-01	3.14E+00	5.20E+00	3.00E+01	3.15E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Iron-59	6.24E-01	3.44E+00	5.89E+00	3.00E+01	3.46E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Iron-59	-2.42E+00	2.81E+00	4.46E+00	3.00E+01	3.03E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Iron-59	-1.85E-01	2.58E+00	4.14E+00	3.00E+01	2.61E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Iron-59	1.20E+00	3.14E+00	4.61E+00	3.00E+01	3.19E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Iron-59	-1.51E-01	2.79E+00	4.60E+00	3.00E+01	2.79E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Iron-59	1.43E+00	3.08E+00	5.37E+00	3.00E+01	3.16E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Iron-59	-7.98E-01	2.85E+00	4.06E+00	3.00E+01	2.88E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Iron-59	-3.36E-01	3.33E+00	4.73E+00	3.00E+01	3.33E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Lanthanum-140	2.57E+00	4.22E+00	7.55E+00	1.50E+01	4.38E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Lanthanum-140	2.06E+00	3.99E+00	6.98E+00	1.50E+01	4.10E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Lanthanum-140	4.61E-01	4.95E+00	8.47E+00	1.50E+01	4.95E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Lanthanum-140	-8.62E-01	5.20E+00	8.68E+00	1.50E+01	5.22E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Lanthanum-140	7.37E-01	7.04E+00	1.20E+01	1.50E+01	7.05E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Lanthanum-140	-1.94E+00	8.42E+00	1.20E+01	1.50E+01	8.46E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Lanthanum-140	4.86E+00	7.08E+00	1.25E+01	1.50E+01	7.42E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Lanthanum-140	5.79E-01	7.71E+00	1.29E+01	1.50E+01	7.71E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Lanthanum-140	1.01E+00	6.10E+00	1.04E+01	1.50E+01	6.12E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Lanthanum-140	1.09E+01	7.72E+00	1.45E+01	1.50E+01	9.19E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Lanthanum-140	1.96E-01	5.07E+00	8.49E+00	1.50E+01	5.08E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Lanthanum-140	-1.31E+00	6.33E+00	1.05E+01	1.50E+01	6.36E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Manganese-54	7.62E-01	9.49E-01	1.69E+00	1.50E+01	1.01E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Manganese-54	-1.23E-01	1.16E+00	1.76E+00	1.50E+01	1.16E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Manganese-54	2.33E-01	1.15E+00	1.93E+00	1.50E+01	1.16E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Manganese-54	-1.10E+00	1.44E+00	1.88E+00	1.50E+01	1.53E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Manganese-54	-2.89E-03	1.30E+00	2.14E+00	1.50E+01	1.30E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Manganese-54	5.14E-01	9.55E-01	1.68E+00	1.50E+01	9.84E-01	pCi/L

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Lake In - LKIN(331850006) - SW	15-Jul-13	Manganese-54	4.77E-01	8.23E-01	1.42E+00	1.50E+01	8.52E-01	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Manganese-54	-2.17E-01	9.10E-01	1.47E+00	1.50E+01	9.16E-01	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Manganese-54	-3.29E-01	9.65E-01	1.60E+00	1.50E+01	9.77E-01	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Manganese-54	-6.39E-01	1.02E+00	1.62E+00	1.50E+01	1.06E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Manganese-54	-6.23E-01	9.90E-01	1.57E+00	1.50E+01	1.03E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Manganese-54	5.75E-01	1.00E+00	1.76E+00	1.50E+01	1.04E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Niobium-95	3.94E-01	1.12E+00	1.95E+00	1.50E+01	1.13E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Niobium-95	-1.12E+00	1.98E+00	2.06E+00	1.50E+01	2.05E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Niobium-95	3.16E-01	1.23E+00	2.09E+00	1.50E+01	1.24E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Niobium-95	1.24E+00	1.48E+00	2.58E+00	1.50E+01	1.59E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Niobium-95	-8.77E-01	2.34E+00	2.69E+00	1.50E+01	2.37E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Niobium-95	8.89E-01	1.28E+00	2.18E+00	1.50E+01	1.35E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Niobium-95	1.20E+00	1.18E+00	2.08E+00	1.50E+01	1.30E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Niobium-95	4.69E-01	1.14E+00	1.92E+00	1.50E+01	1.16E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Niobium-95	1.33E+00	1.18E+00	2.14E+00	1.50E+01	1.33E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Niobium-95	-3.12E-01	1.32E+00	2.16E+00	1.50E+01	1.33E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Niobium-95	1.49E+00	1.21E+00	2.12E+00	1.50E+01	1.38E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Niobium-95	9.17E-01	1.93E+00	2.21E+00	1.50E+01	1.94E+00	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Tritium	-1.23E+02	3.36E+02	5.87E+02	2.00E+03	3.36E+02	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Tritium	-7.16E+01	2.68E+02	4.64E+02	2.00E+03	2.68E+02	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Tritium	1.67E+02	1.86E+02	2.92E+02	2.00E+03	1.89E+02	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Tritium	3.48E+02	2.98E+02	4.28E+02	2.00E+03	3.05E+02	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Tritium	1.03E+02	2.69E+02	4.31E+02	2.00E+03	2.70E+02	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Tritium	9.38E+01	3.13E+02	5.08E+02	2.00E+03	3.13E+02	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Tritium	0.00E+00	3.10E+02	5.20E+02	2.00E+03	3.10E+02	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Tritium	-7.95E+01	2.49E+02	4.33E+02	2.00E+03	2.49E+02	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Tritium	1.17E+02	3.21E+02	5.21E+02	2.00E+03	3.22E+02	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Tritium	8.21E+01	3.48E+02	5.71E+02	2.00E+03	3.48E+02	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Tritium	-8.16E+01	2.28E+02	3.96E+02	2.00E+03	2.28E+02	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Tritium	-9.19E+01	3.16E+02	5.45E+02	2.00E+03	3.16E+02	pCi/L
Lake In - LKIN(320029001) - SW	15-Jan-13	Zinc-65	-5.71E-01	2.14E+00	2.99E+00	3.00E+01	2.16E+00	pCi/L
Lake In - LKIN(321563001) - SW	14-Feb-13	Zinc-65	-1.52E+00	2.15E+00	3.31E+00	3.00E+01	2.26E+00	pCi/L
Lake In - LKIN(323176001) - SW	15-Mar-13	Zinc-65	-1.26E+00	2.53E+00	4.10E+00	3.00E+01	2.60E+00	pCi/L
Lake In - LKIN(325263001) - SW	15-Apr-13	Zinc-65	-1.67E+00	2.70E+00	4.31E+00	3.00E+01	2.81E+00	pCi/L
Lake In - LKIN(327460001) - SW	15-May-13	Zinc-65	1.94E+00	4.10E+00	4.15E+00	3.00E+01	4.20E+00	pCi/L
Lake In - LKIN(329516002) - SW	15-Jun-13	Zinc-65	1.85E+00	1.08E+00	3.40E+00	3.00E+01	1.10E+00	pCi/L
Lake In - LKIN(331850006) - SW	15-Jul-13	Zinc-65	-2.76E+00	2.77E+00	2.90E+00	3.00E+01	3.06E+00	pCi/L
Lake In - LKIN(333703006) - SW	15-Aug-13	Zinc-65	5.95E-02	1.79E+00	3.09E+00	3.00E+01	1.79E+00	pCi/L
Lake In - LKIN(335498004) - SW	15-Sep-13	Zinc-65	2.30E+00	2.18E+00	3.49E+00	3.00E+01	2.43E+00	pCi/L
Lake In - LKIN(337640001) - SW	15-Oct-13	Zinc-65	2.61E+00	2.32E+00	3.74E+00	3.00E+01	2.62E+00	pCi/L
Lake In - LKIN(338704001) - SW	15-Nov-13	Zinc-65	-9.89E-01	2.19E+00	3.63E+00	3.00E+01	2.24E+00	pCi/L
Lake In - LKIN(341025001) - SW	15-Dec-13	Zinc-65	7.46E-01	2.66E+00	3.92E+00	3.00E+01	2.69E+00	pCi/L

Ludington Control
SW

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Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Ludington Control(320029003) - SW	15-Jan-13	BETA	2.00E+00	1.77E+00	2.41E+00	4.00E+00	1.80E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	BETA	3.18E+00	2.26E+00	3.47E+00	4.00E+00	2.32E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	BETA	6.59E-01	1.82E+00	2.87E+00	4.00E+00	1.82E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	BETA	1.20E+00	2.18E+00	3.29E+00	4.00E+00	2.19E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	BETA	2.30E+00	2.02E+00	2.81E+00	4.00E+00	2.06E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	BETA	3.02E+00	2.30E+00	3.20E+00	4.00E+00	2.35E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	BETA	2.33E+00	2.01E+00	2.99E+00	4.00E+00	2.04E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	BETA	2.35E+00	1.95E+00	2.85E+00	4.00E+00	1.99E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	BETA	1.47E+00	2.19E+00	3.32E+00	4.00E+00	2.21E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	BETA	6.03E-01	2.16E+00	3.49E+00	4.00E+00	2.16E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	BETA	1.23E+00	1.85E+00	2.72E+00	4.00E+00	1.87E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	BETA	-2.33E-02	1.64E+00	2.69E+00	4.00E+00	1.64E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Barium-140	-1.08E-01	4.48E+00	7.55E+00	1.50E+01	4.48E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Barium-140	1.05E-01	5.01E+00	8.55E+00	1.50E+01	5.01E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Barium-140	-4.72E+00	7.10E+00	9.36E+00	1.50E+01	7.43E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Barium-140	-3.02E-01	6.13E+00	1.03E+01	1.50E+01	6.13E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Barium-140	-1.62E+01	3.94E+01	5.39E+01	1.50E+01	4.01E+01	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Barium-140	-5.75E+00	7.89E+00	1.23E+01	1.50E+01	8.32E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Barium-140	5.97E+00	4.50E+01	6.49E+01	1.50E+01	4.50E+01	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Barium-140	9.32E+00	7.68E+00	1.27E+01	1.50E+01	8.78E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Barium-140	-4.31E-01	4.95E+00	8.18E+00	1.50E+01	4.96E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Barium-140	-5.68E+00	2.42E+01	3.37E+01	1.50E+01	2.43E+01	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Barium-140	-6.72E+00	9.45E+00	1.46E+01	1.50E+01	9.94E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Barium-140	-4.86E+00	6.08E+00	9.58E+00	1.50E+01	6.48E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Cesium-134	9.38E-01	1.04E+00	1.88E+00	1.50E+01	1.13E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Cesium-134	1.77E+00	2.34E+00	2.74E+00	1.50E+01	2.48E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Cesium-134	7.41E-01	1.04E+00	1.81E+00	1.50E+01	1.10E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Cesium-134	2.16E-01	1.25E+00	1.90E+00	1.50E+01	1.26E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Cesium-134	2.60E-01	9.60E-01	1.66E+00	1.50E+01	9.68E-01	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Cesium-134	5.58E-01	1.15E+00	2.01E+00	1.50E+01	1.18E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Cesium-134	8.58E-01	1.22E+00	1.57E+00	1.50E+01	1.28E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Cesium-134	6.14E-01	9.16E-01	1.57E+00	1.50E+01	9.59E-01	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Cesium-134	1.30E+00	1.58E+00	1.63E+00	1.50E+01	1.69E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Cesium-134	7.61E-02	1.07E+00	1.84E+00	1.50E+01	1.07E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Cesium-134	-1.69E-01	9.14E-01	1.55E+00	1.50E+01	9.17E-01	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Cesium-134	-2.84E-01	1.07E+00	1.75E+00	1.50E+01	1.08E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Cesium-137	2.55E-01	9.86E-01	1.64E+00	1.80E+01	9.93E-01	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Cesium-137	1.68E+00	1.46E+00	2.64E+00	1.80E+01	1.65E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Cesium-137	1.25E-02	9.23E-01	1.56E+00	1.80E+01	9.23E-01	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Cesium-137	1.34E+00	9.83E-01	1.77E+00	1.80E+01	1.16E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Cesium-137	-1.20E+00	1.36E+00	1.43E+00	1.80E+01	1.47E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Cesium-137	2.84E-01	1.20E+00	1.65E+00	1.80E+01	1.21E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Cesium-137	-2.22E-01	8.45E-01	1.42E+00	1.80E+01	8.51E-01	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Cesium-137	-1.11E+00	1.78E+00	1.80E+00	1.80E+01	1.85E+00	pCi/L

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Ludington Control(335498007) - SW	15-Sep-13	Cesium-137	-2.94E-01	8.29E-01	1.39E+00	1.80E+01	8.40E-01	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Cesium-137	6.70E-01	1.01E+00	1.73E+00	1.80E+01	1.06E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Cesium-137	1.88E-01	1.41E+00	1.47E+00	1.80E+01	1.41E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Cesium-137	7.35E-02	1.04E+00	1.75E+00	1.80E+01	1.04E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Cobalt-58	-3.16E-01	1.12E+00	1.87E+00	1.50E+01	1.13E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Cobalt-58	-1.60E+00	1.64E+00	2.53E+00	1.50E+01	1.80E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Cobalt-58	-8.91E-01	1.25E+00	1.98E+00	1.50E+01	1.32E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Cobalt-58	1.43E+00	3.81E+00	1.99E+00	1.50E+01	3.81E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Cobalt-58	-5.26E-01	1.46E+00	2.42E+00	1.50E+01	1.48E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Cobalt-58	5.85E-02	1.33E+00	2.26E+00	1.50E+01	1.33E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Cobalt-58	9.10E-01	1.50E+00	2.54E+00	1.50E+01	1.56E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Cobalt-58	1.57E-01	1.07E+00	1.79E+00	1.50E+01	1.08E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Cobalt-58	-7.65E-01	1.03E+00	1.66E+00	1.50E+01	1.08E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Cobalt-58	-1.22E-01	1.40E+00	2.38E+00	1.50E+01	1.40E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Cobalt-58	3.23E-03	1.09E+00	1.87E+00	1.50E+01	1.09E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Cobalt-58	-2.04E+00	1.56E+00	2.00E+00	1.50E+01	1.82E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Cobalt-60	9.38E-01	1.02E+00	1.88E+00	1.50E+01	1.11E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Cobalt-60	4.89E-01	1.49E+00	2.56E+00	1.50E+01	1.51E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Cobalt-60	5.66E-01	1.06E+00	1.84E+00	1.50E+01	1.10E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Cobalt-60	-1.69E-01	9.80E-01	1.66E+00	1.50E+01	9.83E-01	pCi/L
Ludington Control(329516005) - SW	15-May-13	Cobalt-60	6.63E-01	1.02E+00	1.60E+00	1.50E+01	1.07E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Cobalt-60	4.64E-01	1.07E+00	1.86E+00	1.50E+01	1.09E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Cobalt-60	2.71E-02	1.18E+00	1.43E+00	1.50E+01	1.18E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Cobalt-60	-6.31E-01	9.69E-01	1.55E+00	1.50E+01	1.01E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Cobalt-60	-9.02E-02	8.26E-01	1.39E+00	1.50E+01	8.27E-01	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Cobalt-60	3.58E-01	1.00E+00	1.74E+00	1.50E+01	1.01E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Cobalt-60	5.81E-01	8.91E-01	1.55E+00	1.50E+01	9.30E-01	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Cobalt-60	5.72E-01	9.93E-01	1.75E+00	1.50E+01	1.03E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Iron-59	-2.23E+00	2.53E+00	3.88E+00	3.00E+01	2.74E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Iron-59	-2.44E+00	3.92E+00	6.61E+00	3.00E+01	3.92E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Iron-59	1.82E+00	2.72E+00	4.81E+00	3.00E+01	2.85E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Iron-59	-1.25E+00	2.97E+00	4.78E+00	3.00E+01	3.03E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Iron-59	-3.04E+00	5.11E+00	6.89E+00	3.00E+01	5.31E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Iron-59	1.39E+00	3.27E+00	5.56E+00	3.00E+01	3.33E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Iron-59	1.55E+00	4.23E+00	7.39E+00	3.00E+01	4.29E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Iron-59	2.12E+00	2.51E+00	4.48E+00	3.00E+01	2.71E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Iron-59	-3.93E-01	2.27E+00	3.86E+00	3.00E+01	2.28E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Iron-59	1.60E+00	4.40E+00	6.50E+00	3.00E+01	4.46E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Iron-59	-8.36E-01	2.77E+00	4.56E+00	3.00E+01	2.79E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Iron-59	-1.27E-01	2.79E+00	4.77E+00	3.00E+01	2.79E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Lanthanum-140	-1.08E-01	4.48E+00	7.55E+00	1.50E+01	4.48E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Lanthanum-140	1.05E-01	5.01E+00	8.55E+00	1.50E+01	5.01E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Lanthanum-140	-4.72E+00	7.10E+00	9.36E+00	1.50E+01	7.43E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Lanthanum-140	-3.02E-01	6.13E+00	1.03E+01	1.50E+01	6.13E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Lanthanum-140	-1.62E+01	3.94E+01	5.39E+01	1.50E+01	4.01E+01	pCi/L

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Ludington Control(329588008) - SW	15-Jun-13	Lanthanum-140	-5.75E+00	7.89E+00	1.23E+01	1.50E+01	8.32E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Lanthanum-140	5.97E+00	4.50E+01	6.49E+01	1.50E+01	4.50E+01	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Lanthanum-140	9.32E+00	7.68E+00	1.27E+01	1.50E+01	8.78E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Lanthanum-140	-4.31E-01	4.95E+00	8.18E+00	1.50E+01	4.96E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Lanthanum-140	-5.68E+00	2.42E+01	3.37E+01	1.50E+01	2.43E+01	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Lanthanum-140	-6.72E+00	9.45E+00	1.46E+01	1.50E+01	9.94E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Lanthanum-140	-4.86E+00	6.08E+00	9.58E+00	1.50E+01	6.48E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Manganese-54	-2.36E-01	9.25E-01	1.54E+00	1.50E+01	9.31E-01	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Manganese-54	-1.17E+00	1.50E+00	2.35E+00	1.50E+01	1.59E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Manganese-54	-2.04E-01	1.02E+00	1.66E+00	1.50E+01	1.02E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Manganese-54	-5.09E-01	9.22E-01	1.51E+00	1.50E+01	9.52E-01	pCi/L
Ludington Control(329516005) - SW	15-May-13	Manganese-54	-3.32E-01	9.65E-01	1.61E+00	1.50E+01	9.77E-01	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Manganese-54	-6.24E-01	1.02E+00	1.67E+00	1.50E+01	1.06E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Manganese-54	-3.30E-01	8.96E-01	1.47E+00	1.50E+01	9.08E-01	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Manganese-54	1.55E-01	1.04E+00	1.50E+00	1.50E+01	1.05E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Manganese-54	-4.36E-01	8.37E-01	1.37E+00	1.50E+01	8.61E-01	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Manganese-54	-1.30E-01	1.08E+00	1.58E+00	1.50E+01	1.09E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Manganese-54	4.34E-01	8.68E-01	1.52E+00	1.50E+01	8.91E-01	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Manganese-54	5.99E-01	1.07E+00	1.82E+00	1.50E+01	1.10E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Niobium-95	1.28E+00	1.19E+00	2.17E+00	1.50E+01	1.33E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Niobium-95	3.42E-01	1.71E+00	2.89E+00	1.50E+01	1.72E+00	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Niobium-95	1.29E-01	1.20E+00	2.01E+00	1.50E+01	1.20E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Niobium-95	2.43E-01	1.64E+00	2.01E+00	1.50E+01	1.64E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Niobium-95	-8.13E-01	2.72E+00	2.63E+00	1.50E+01	2.75E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Niobium-95	2.53E-01	1.38E+00	2.38E+00	1.50E+01	1.38E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Niobium-95	9.30E-01	2.44E+00	2.95E+00	1.50E+01	2.47E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Niobium-95	2.14E+00	1.31E+00	2.14E+00	1.50E+01	1.75E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Niobium-95	1.45E+00	1.10E+00	1.97E+00	1.50E+01	1.29E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Niobium-95	2.67E-01	1.54E+00	2.67E+00	1.50E+01	1.55E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Niobium-95	-5.47E-01	1.22E+00	2.05E+00	1.50E+01	1.24E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Niobium-95	-5.34E-01	1.32E+00	2.15E+00	1.50E+01	1.34E+00	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Tritium	-5.58E+01	3.10E+02	5.31E+02	2.00E+03	3.10E+02	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Tritium	7.02E+01	2.79E+02	4.55E+02	2.00E+03	2.80E+02	pCi/L
Ludington Control(323820001) - SW	15-Mar-13	Tritium	2.73E+01	2.88E+02	4.78E+02	2.00E+03	2.88E+02	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Tritium	0.00E+00	3.13E+02	5.26E+02	2.00E+03	3.13E+02	pCi/L
Ludington Control(329516005) - SW	15-May-13	Tritium	1.27E+02	3.13E+02	5.02E+02	2.00E+03	3.14E+02	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Tritium	1.52E+01	2.58E+02	4.31E+02	2.00E+03	2.58E+02	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Tritium	-3.50E+01	2.54E+02	4.33E+02	2.00E+03	2.54E+02	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Tritium	9.81E+01	2.68E+02	4.33E+02	2.00E+03	2.69E+02	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Tritium	-1.21E+01	2.98E+02	5.01E+02	2.00E+03	2.98E+02	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Tritium	1.56E+02	2.52E+02	3.98E+02	2.00E+03	2.54E+02	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Tritium	2.29E+02	2.46E+02	3.69E+02	2.00E+03	2.50E+02	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Tritium	1.41E+01	3.33E+02	5.56E+02	2.00E+03	3.33E+02	pCi/L
Ludington Control(320029003) - SW	15-Jan-13	Zinc-65	2.31E+00	2.38E+00	3.81E+00	3.00E+01	2.61E+00	pCi/L
Ludington Control(321563004) - SW	14-Feb-13	Zinc-65	1.78E+00	3.05E+00	4.76E+00	3.00E+01	3.16E+00	pCi/L

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Ludington Control(323820001) - SW	15-Mar-13	Zinc-65	-2.02E+00	2.62E+00	3.70E+00	3.00E+01	2.79E+00	pCi/L
Ludington Control(325771001) - SW	15-Apr-13	Zinc-65	-1.35E+00	2.17E+00	3.42E+00	3.00E+01	2.26E+00	pCi/L
Ludington Control(329516005) - SW	15-May-13	Zinc-65	-2.07E-01	1.95E+00	3.20E+00	3.00E+01	1.95E+00	pCi/L
Ludington Control(329588008) - SW	15-Jun-13	Zinc-65	-1.18E+00	2.24E+00	3.57E+00	3.00E+01	2.31E+00	pCi/L
Ludington Control(333703009) - SW	15-Jul-13	Zinc-65	8.02E-01	2.11E+00	3.22E+00	3.00E+01	2.14E+00	pCi/L
Ludington Control(333703010) - SW	15-Aug-13	Zinc-65	-1.11E+00	1.84E+00	2.99E+00	3.00E+01	1.91E+00	pCi/L
Ludington Control(335498007) - SW	15-Sep-13	Zinc-65	1.44E+00	1.96E+00	3.06E+00	3.00E+01	2.07E+00	pCi/L
Ludington Control(338704004) - SW	15-Oct-13	Zinc-65	-4.87E-02	2.51E+00	3.57E+00	3.00E+01	2.51E+00	pCi/L
Ludington Control(339883001) - SW	15-Nov-13	Zinc-65	-2.23E-01	2.20E+00	3.17E+00	3.00E+01	2.20E+00	pCi/L
Ludington Control(341025004) - SW	15-Dec-13	Zinc-65	-9.50E-01	2.05E+00	3.41E+00	3.00E+01	2.10E+00	pCi/L

Palisades Park - Commercial Well

DW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Palisades Park - Commercial Well(325624001) - DW	8-May-13	BETA	4.79E-01	2.17E+00	3.55E+00	4.00E+00	2.17E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	BETA	1.98E+00	2.38E+00	3.63E+00	4.00E+00	2.40E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	BETA	1.90E+00	1.61E+00	2.05E+00	4.00E+00	1.65E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	BETA	1.59E+00	1.99E+00	3.05E+00	4.00E+00	2.00E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	BETA	3.18E+00	2.79E+00	3.88E+00	4.00E+00	2.86E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Barium-140	9.33E-01	1.57E+00	2.80E+00	1.50E+01	1.63E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Barium-140	2.58E+00	6.36E+00	1.11E+01	1.50E+01	6.46E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Barium-140	-5.52E+00	7.07E+00	1.13E+01	1.50E+01	7.51E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Barium-140	-1.90E+01	1.70E+01	2.59E+01	1.50E+01	1.91E+01	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Barium-140	2.28E+00	3.10E+00	4.88E+00	1.50E+01	3.27E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Cesium-134	-4.41E-01	1.04E+00	1.72E+00	1.50E+01	1.05E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Cesium-134	8.52E-01	1.61E+00	2.71E+00	1.50E+01	1.66E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Cesium-134	-5.34E+00	3.42E+00	3.64E+00	1.50E+01	4.22E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Cesium-134	1.19E+00	2.26E+00	3.50E+00	1.50E+01	2.33E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Cesium-134	-1.81E-01	1.09E+00	1.81E+00	1.50E+01	1.09E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Cesium-137	6.01E-01	8.45E-01	1.58E+00	1.80E+01	8.47E-01	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Cesium-137	1.59E-01	1.58E+00	2.61E+00	1.80E+01	1.58E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Cesium-137	1.63E-01	2.08E+00	3.46E+00	1.80E+01	2.08E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Cesium-137	-2.28E+00	2.95E+00	3.42E+00	1.80E+01	3.13E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Cesium-137	-7.12E-01	1.03E+00	1.65E+00	1.80E+01	1.08E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Cobalt-58	2.58E-01	9.07E-01	1.58E+00	1.50E+01	9.14E-01	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Cobalt-58	6.43E-01	1.92E+00	2.99E+00	1.50E+01	1.94E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Cobalt-58	8.52E-01	2.40E+00	4.18E+00	1.50E+01	2.44E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Cobalt-58	1.74E-01	2.44E+00	4.11E+00	1.50E+01	2.44E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Cobalt-58	9.94E-02	1.11E+00	1.82E+00	1.50E+01	1.11E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Cobalt-60	1.50E-01	9.88E-01	1.72E+00	1.50E+01	9.91E-01	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Cobalt-60	2.26E+00	2.01E+00	2.93E+00	1.50E+01	2.26E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Cobalt-60	1.50E+00	1.88E+00	3.31E+00	1.50E+01	2.00E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Cobalt-60	-6.04E-01	2.10E+00	3.37E+00	1.50E+01	2.11E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Cobalt-60	-3.57E-01	1.12E+00	1.80E+00	1.50E+01	1.13E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Iron-59	-2.77E-01	1.92E+00	3.16E+00	3.00E+01	1.93E+00	pCi/L

**REMP Year End Report for PALI for 2013
Palisades REMP**

Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Iron-59	6.38E-01	4.27E+00	7.08E+00	3.00E+01	4.28E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Iron-59	1.74E+00	4.63E+00	7.98E+00	3.00E+01	4.71E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Iron-59	4.45E+00	5.84E+00	1.03E+01	3.00E+01	6.22E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Iron-59	5.34E-01	2.54E+00	4.30E+00	3.00E+01	2.55E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Lanthanum-140	9.33E-01	1.57E+00	2.80E+00	1.50E+01	1.63E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Lanthanum-140	2.58E+00	6.36E+00	1.11E+01	1.50E+01	6.46E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Lanthanum-140	-5.52E+00	7.07E+00	1.13E+01	1.50E+01	7.51E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Lanthanum-140	-1.90E+01	1.70E+01	2.59E+01	1.50E+01	1.91E+01	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Lanthanum-140	2.28E+00	3.10E+00	4.88E+00	1.50E+01	3.27E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Manganese-54	-9.56E-02	9.22E-01	1.56E+00	1.50E+01	9.23E-01	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Manganese-54	6.37E-02	1.52E+00	2.55E+00	1.50E+01	1.52E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Manganese-54	-1.55E-01	2.29E+00	3.62E+00	1.50E+01	2.29E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Manganese-54	3.31E+00	2.00E+00	3.72E+00	1.50E+01	2.53E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Manganese-54	5.53E-01	9.88E-01	1.74E+00	1.50E+01	1.02E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Niobium-95	-8.65E-01	1.54E+00	1.84E+00	1.50E+01	1.59E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Niobium-95	-1.75E+00	2.68E+00	2.89E+00	1.50E+01	2.80E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Niobium-95	-1.58E+00	2.73E+00	3.91E+00	1.50E+01	2.83E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Niobium-95	8.68E-01	4.69E+00	4.95E+00	1.50E+01	4.71E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Niobium-95	1.80E+00	1.67E+00	1.80E+00	1.50E+01	1.68E+00	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Tritium	-1.46E+02	3.07E+02	5.41E+02	2.00E+03	3.07E+02	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Tritium	2.59E+02	2.86E+02	4.29E+02	2.00E+03	2.91E+02	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Tritium	-1.55E+01	3.01E+02	5.08E+02	2.00E+03	3.01E+02	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Tritium	1.75E+02	2.78E+02	4.36E+02	2.00E+03	2.80E+02	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Tritium	1.37E+02	3.33E+02	5.39E+02	2.00E+03	3.34E+02	pCi/L
Palisades Park - Commercial Well(325624001) - DW	8-May-13	Zinc-65	2.00E+00	2.09E+00	3.36E+00	3.00E+01	2.29E+00	pCi/L
Palisades Park - Commercial Well(329588009) - DW	25-Jun-13	Zinc-65	-4.04E-01	3.30E+00	5.37E+00	3.00E+01	3.31E+00	pCi/L
Palisades Park - Commercial Well(331850004) - DW	29-Jul-13	Zinc-65	-2.29E+00	3.93E+00	6.37E+00	3.00E+01	4.08E+00	pCi/L
Palisades Park - Commercial Well(333703004) - DW	16-Aug-13	Zinc-65	2.11E+00	4.42E+00	7.78E+00	3.00E+01	4.43E+00	pCi/L
Palisades Park - Commercial Well(335498008) - DW	30-Sep-13	Zinc-65	2.74E+00	2.22E+00	3.59E+00	3.00E+01	2.56E+00	pCi/L

Palisades Park - Community Well
DW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Palisades Park - Community Well(325624002) - DW	8-May-13	BETA	-7.00E-01	1.72E+00	3.08E+00	4.00E+00	1.71E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	BETA	1.39E+00	2.26E+00	3.53E+00	4.00E+00	2.27E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	BETA	5.40E-01	1.68E+00	2.63E+00	4.00E+00	1.68E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	BETA	3.15E+00	2.02E+00	2.86E+00	4.00E+00	2.09E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	BETA	-2.82E-01	1.72E+00	2.95E+00	4.00E+00	1.72E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Barium-140	5.83E-01	2.16E+00	3.72E+00	1.50E+01	2.18E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Barium-140	2.50E+00	1.10E+01	1.65E+01	1.50E+01	1.11E+01	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Barium-140	1.90E+00	5.72E+00	9.88E+00	1.50E+01	5.78E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Barium-140	1.66E+01	1.30E+01	2.43E+01	1.50E+01	1.50E+01	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Barium-140	-1.23E+00	2.66E+00	4.37E+00	1.50E+01	2.72E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Cesium-134	7.92E-01	1.48E+00	2.60E+00	1.50E+01	1.53E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Cesium-134	1.37E+00	2.41E+00	3.61E+00	1.50E+01	2.50E+00	pCi/L

REMP Year End Report for PALI for 2013
Palisades REMP

Palisades Park - Community Well(331850005) - DW	29-Jul-13	Cesium-134	-5.35E-02	1.45E+00	2.42E+00	1.50E+01	1.45E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Cesium-134	4.22E-01	1.78E+00	3.00E+00	1.50E+01	1.79E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Cesium-134	9.12E-01	9.93E-01	1.73E+00	1.50E+01	1.08E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Cesium-137	-6.92E-01	1.35E+00	2.20E+00	1.80E+01	1.38E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Cesium-137	9.58E-01	2.13E+00	3.66E+00	1.80E+01	2.17E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Cesium-137	7.66E-01	2.02E+00	2.77E+00	1.80E+01	2.05E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Cesium-137	-1.17E+00	1.94E+00	2.63E+00	1.80E+01	2.02E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Cesium-137	2.06E-01	2.22E+00	1.51E+00	1.80E+01	2.22E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Cobalt-58	2.01E-01	1.36E+00	2.31E+00	1.50E+01	1.36E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Cobalt-58	-1.63E+00	2.45E+00	3.62E+00	1.50E+01	2.57E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Cobalt-58	4.70E-01	1.62E+00	2.76E+00	1.50E+01	1.63E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Cobalt-58	2.23E-01	2.03E+00	3.49E+00	1.50E+01	2.04E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Cobalt-58	4.72E-01	8.62E-01	1.68E+00	1.50E+01	8.63E-01	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Cobalt-60	-1.23E-01	1.70E+00	2.84E+00	1.50E+01	1.70E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Cobalt-60	3.14E-01	2.16E+00	3.64E+00	1.50E+01	2.17E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Cobalt-60	-3.80E+00	3.30E+00	2.44E+00	1.50E+01	3.73E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Cobalt-60	2.39E-01	1.69E+00	2.91E+00	1.50E+01	1.69E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Cobalt-60	3.63E-01	8.91E-01	1.54E+00	1.50E+01	9.07E-01	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Iron-59	-1.36E+00	2.89E+00	4.73E+00	3.00E+01	2.96E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Iron-59	4.67E+00	5.10E+00	9.17E+00	3.00E+01	5.57E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Iron-59	1.43E+00	3.78E+00	6.38E+00	3.00E+01	3.84E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Iron-59	-4.36E+00	4.96E+00	7.67E+00	3.00E+01	5.39E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Iron-59	6.09E-01	1.97E+00	3.41E+00	3.00E+01	1.99E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Lanthanum-140	5.83E-01	2.16E+00	3.72E+00	1.50E+01	2.18E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Lanthanum-140	2.50E+00	1.10E+01	1.65E+01	1.50E+01	1.11E+01	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Lanthanum-140	1.90E+00	5.72E+00	9.88E+00	1.50E+01	5.78E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Lanthanum-140	1.66E+01	1.30E+01	2.43E+01	1.50E+01	1.50E+01	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Lanthanum-140	-1.23E+00	2.66E+00	4.37E+00	1.50E+01	2.72E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Manganese-54	-4.37E-01	1.43E+00	2.32E+00	1.50E+01	1.44E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Manganese-54	1.55E-01	2.06E+00	3.41E+00	1.50E+01	2.06E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Manganese-54	6.59E-01	1.44E+00	2.48E+00	1.50E+01	1.47E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Manganese-54	2.06E+00	2.77E+00	2.29E+00	1.50E+01	2.78E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Manganese-54	-1.11E-01	9.26E-01	1.52E+00	1.50E+01	9.27E-01	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Niobium-95	7.42E-01	1.60E+00	2.46E+00	1.50E+01	1.64E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Niobium-95	2.68E+00	2.38E+00	4.22E+00	1.50E+01	2.69E+00	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Niobium-95	-8.94E-01	2.85E+00	3.06E+00	1.50E+01	2.88E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Niobium-95	1.37E+00	3.37E+00	3.56E+00	1.50E+01	3.37E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Niobium-95	1.05E+00	1.01E+00	1.78E+00	1.50E+01	1.12E+00	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Tritium	-2.50E+02	2.90E+02	5.32E+02	2.00E+03	2.90E+02	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Tritium	1.65E+02	2.89E+02	4.52E+02	2.00E+03	2.91E+02	pCi/L
Palisades Park - Community Well(331850005) - DW	29-Jul-13	Tritium	2.89E+01	3.07E+02	5.11E+02	2.00E+03	3.07E+02	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Tritium	9.95E+01	2.73E+02	4.40E+02	2.00E+03	2.74E+02	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Tritium	3.21E+01	3.37E+02	5.61E+02	2.00E+03	3.37E+02	pCi/L
Palisades Park - Community Well(325624002) - DW	8-May-13	Zinc-65	-5.90E-01	3.40E+00	4.89E+00	3.00E+01	3.41E+00	pCi/L
Palisades Park - Community Well(329588010) - DW	25-Jun-13	Zinc-65	-2.35E+00	4.86E+00	6.68E+00	3.00E+01	4.98E+00	pCi/L

**REMP Year End Report for PALI for 2013
Palisades REMP**

Palisades Park - Community Well(331850005) - DW	29-Jul-13	Zinc-65	5.25E+00	4.52E+00	5.25E+00	3.00E+01	4.75E+00	pCi/L
Palisades Park - Community Well(333703005) - DW	16-Aug-13	Zinc-65	-2.92E+00	3.64E+00	5.67E+00	3.00E+01	3.90E+00	pCi/L
Palisades Park - Community Well(335498009) - DW	30-Sep-13	Zinc-65	2.21E-02	1.89E+00	3.20E+00	3.00E+01	1.89E+00	pCi/L

Sediment - SED
SD

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Sediment - SED(329588007) - SD	25-Jun-13	Cesium-134	-1.06E-01	1.85E+01	3.28E+01	1.50E+02	1.85E+01	pCi/kg
Sediment - SED(335498010) - SD	30-Sep-13	Cesium-134	7.38E+00	2.18E+01	3.97E+01	1.50E+02	2.21E+01	pCi/kg
Sediment - SED(329588007) - SD	25-Jun-13	Cesium-137	6.16E+00	2.14E+01	3.34E+01	1.80E+02	2.16E+01	pCi/kg
Sediment - SED(335498010) - SD	30-Sep-13	Cesium-137	5.04E+00	2.54E+01	2.74E+01	1.80E+02	2.54E+01	pCi/kg
Sediment - SED(335498010) - SD	30-Sep-13	Potassium-40	7.74E+03	7.63E+02	1.74E+02		1.04E+03	pCi/kg

Septic Sample
WW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
Septic Sample(329516001) - WW	29-Jun-13	Barium-140	7.52E-02	6.11E+00	1.04E+01	1.50E+01	6.11E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Barium-140	-3.54E-01	5.07E+00	8.57E+00	1.50E+01	5.07E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Barium-140	1.27E+00	4.95E+00	8.43E+00	1.50E+01	4.99E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Cesium-134	1.84E-01	2.20E+00	3.79E+00	1.50E+01	2.20E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Cesium-134	1.04E+00	1.71E+00	3.02E+00	1.50E+01	1.78E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Cesium-134	-8.98E-01	1.93E+00	3.09E+00	1.50E+01	1.98E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Cesium-137	-4.12E-01	2.13E+00	3.51E+00	1.80E+01	2.14E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Cesium-137	1.40E+00	1.62E+00	2.90E+00	1.80E+01	1.74E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Cesium-137	1.13E-01	2.13E+00	3.07E+00	1.80E+01	2.14E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Cobalt-58	2.22E+00	2.28E+00	4.07E+00	1.50E+01	2.50E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Cobalt-58	-1.99E+00	2.04E+00	2.74E+00	1.50E+01	2.24E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Cobalt-58	-1.47E+00	2.01E+00	3.17E+00	1.50E+01	2.12E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Cobalt-60	1.14E+00	1.98E+00	3.42E+00	1.50E+01	2.05E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Cobalt-60	1.26E-01	1.68E+00	2.78E+00	1.50E+01	1.68E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Cobalt-60	-4.03E-01	1.92E+00	3.18E+00	1.50E+01	1.93E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Iron-59	1.26E+00	4.52E+00	7.73E+00	3.00E+01	4.56E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Iron-59	-1.92E+00	3.78E+00	6.05E+00	3.00E+01	3.89E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Iron-59	1.81E+00	3.98E+00	6.94E+00	3.00E+01	4.07E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Lanthanum-140	7.52E-02	6.11E+00	1.04E+01	1.50E+01	6.11E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Lanthanum-140	-3.54E-01	5.07E+00	8.57E+00	1.50E+01	5.07E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Lanthanum-140	1.27E+00	4.95E+00	8.43E+00	1.50E+01	4.99E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Manganese-54	5.21E-01	2.16E+00	3.74E+00	1.50E+01	2.18E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Manganese-54	-2.32E-01	1.65E+00	2.78E+00	1.50E+01	1.65E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Manganese-54	1.45E-02	1.90E+00	3.13E+00	1.50E+01	1.90E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Niobium-95	1.38E+00	2.73E+00	4.00E+00	1.50E+01	2.81E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Niobium-95	-1.03E-01	1.79E+00	3.04E+00	1.50E+01	1.79E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Niobium-95	-1.02E-01	2.42E+00	3.43E+00	1.50E+01	2.42E+00	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Tritium	7.30E+01	3.02E+02	4.94E+02	2.00E+03	3.03E+02	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Tritium	1.80E+01	3.33E+02	5.56E+02	2.00E+03	3.33E+02	pCi/L

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Septic Sample(341025005) - WW	31-Dec-13	Tritium	-7.62E+01	3.11E+02	5.34E+02	2.00E+03	3.11E+02	pCi/L
Septic Sample(329516001) - WW	29-Jun-13	Zinc-65	-2.70E+00	3.77E+00	6.04E+00	3.00E+01	3.99E+00	pCi/L
Septic Sample(335498011) - WW	30-Sep-13	Zinc-65	-1.30E-01	3.50E+00	5.80E+00	3.00E+01	3.50E+00	pCi/L
Septic Sample(341025005) - WW	31-Dec-13	Zinc-65	1.33E+00	4.24E+00	6.38E+00	3.00E+01	4.29E+00	pCi/L

South Haven Raw Water - SHR
SW

Sample Name	Date Collected	Nuclide	Result	2 Sigma Uncert	MDC	LLD	2 Sigma TPU	Units
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	BETA	1.04E+00	2.13E+00	3.33E+00	4.00E+00	2.14E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	BETA	1.33E+00	2.24E+00	3.63E+00	4.00E+00	2.25E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	BETA	2.08E+00	2.11E+00	3.00E+00	4.00E+00	2.14E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	BETA	2.46E+00	2.02E+00	2.78E+00	4.00E+00	2.06E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	BETA	1.71E+00	2.01E+00	2.86E+00	4.00E+00	2.03E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	BETA	-9.36E-02	1.98E+00	3.33E+00	4.00E+00	1.98E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	BETA	2.81E+00	2.33E+00	3.32E+00	4.00E+00	2.38E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	BETA	1.61E+00	2.02E+00	3.13E+00	4.00E+00	2.04E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	BETA	1.45E+00	1.79E+00	2.55E+00	4.00E+00	1.81E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	BETA	2.82E+00	2.00E+00	2.59E+00	4.00E+00	2.05E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	BETA	2.22E+00	2.03E+00	2.84E+00	4.00E+00	2.07E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	BETA	2.97E+00	2.33E+00	3.48E+00	4.00E+00	2.38E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Barium-140	-9.35E-01	6.54E+00	1.08E+01	1.50E+01	6.56E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Barium-140	-5.35E-01	3.72E+00	6.16E+00	1.50E+01	3.72E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Barium-140	1.54E+00	5.48E+00	8.26E+00	1.50E+01	5.52E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Barium-140	5.42E-01	5.19E+00	8.84E+00	1.50E+01	5.19E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Barium-140	-5.92E+00	6.10E+00	9.11E+00	1.50E+01	6.68E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Barium-140	-7.04E-01	6.52E+00	1.08E+01	1.50E+01	6.53E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Barium-140	-4.23E+00	8.72E+00	1.40E+01	1.50E+01	8.94E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Barium-140	1.51E+00	7.49E+00	1.14E+01	1.50E+01	7.53E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Barium-140	4.59E-01	5.62E+00	9.50E+00	1.50E+01	5.62E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Barium-140	3.43E+00	6.55E+00	9.97E+00	1.50E+01	6.74E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Barium-140	-4.99E-01	4.17E+00	5.97E+00	1.50E+01	4.17E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Barium-140	-5.45E+00	5.07E+00	7.68E+00	1.50E+01	5.65E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Cesium-134	1.80E-01	1.10E+00	1.83E+00	1.50E+01	1.10E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Cesium-134	2.20E-01	1.02E+00	1.77E+00	1.50E+01	1.03E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Cesium-134	-9.38E-01	1.18E+00	1.84E+00	1.50E+01	1.26E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Cesium-134	1.09E+00	1.28E+00	2.27E+00	1.50E+01	1.37E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Cesium-134	2.80E-01	1.24E+00	2.03E+00	1.50E+01	1.25E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Cesium-134	5.41E-01	9.23E-01	1.57E+00	1.50E+01	9.56E-01	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Cesium-134	9.84E-01	1.06E+00	1.87E+00	1.50E+01	1.15E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Cesium-134	-1.45E-01	8.90E-01	1.47E+00	1.50E+01	8.92E-01	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Cesium-134	2.74E-01	1.16E+00	1.74E+00	1.50E+01	1.17E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Cesium-134	4.73E-01	9.15E-01	1.57E+00	1.50E+01	9.41E-01	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Cesium-134	4.37E-01	1.22E+00	1.89E+00	1.50E+01	1.24E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Cesium-134	1.08E+00	1.02E+00	1.58E+00	1.50E+01	1.14E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Cesium-137	1.39E-01	9.86E-01	1.66E+00	1.80E+01	9.88E-01	pCi/L

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South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Cesium-137	4.80E-01	1.02E+00	1.73E+00	1.80E+01	1.05E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Cesium-137	9.97E-03	2.44E+00	1.78E+00	1.80E+01	2.44E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Cesium-137	1.28E+00	1.20E+00	2.12E+00	1.80E+01	1.33E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Cesium-137	-4.46E-02	1.03E+00	1.77E+00	1.80E+01	1.03E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Cesium-137	-8.48E-01	1.82E+00	1.90E+00	1.80E+01	1.86E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Cesium-137	1.18E+00	9.83E-01	1.78E+00	1.80E+01	1.12E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Cesium-137	-9.85E-01	1.54E+00	1.52E+00	1.80E+01	1.61E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Cesium-137	-1.26E+00	1.88E+00	1.63E+00	1.80E+01	1.97E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Cesium-137	-4.70E-02	8.72E-01	1.47E+00	1.80E+01	8.72E-01	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Cesium-137	3.99E-01	1.09E+00	1.87E+00	1.80E+01	1.11E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Cesium-137	-1.17E-01	1.61E+00	1.84E+00	1.80E+01	1.61E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Cobalt-58	7.35E-01	1.24E+00	2.12E+00	1.50E+01	1.29E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Cobalt-58	3.41E-01	1.10E+00	1.91E+00	1.50E+01	1.11E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Cobalt-58	6.37E-01	1.24E+00	2.12E+00	1.50E+01	1.61E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Cobalt-58	-8.67E-01	1.93E+00	2.15E+00	1.50E+01	1.97E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Cobalt-58	-3.91E-01	1.53E+00	2.19E+00	1.50E+01	1.54E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Cobalt-58	-4.74E-01	1.22E+00	1.71E+00	1.50E+01	1.24E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Cobalt-58	2.27E-01	1.20E+00	2.04E+00	1.50E+01	1.20E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Cobalt-58	7.63E-01	1.12E+00	1.93E+00	1.50E+01	1.17E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Cobalt-58	1.99E-01	1.58E+00	1.95E+00	1.50E+01	1.58E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Cobalt-58	5.17E-01	9.89E-01	1.70E+00	1.50E+01	1.02E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Cobalt-58	1.32E-01	1.16E+00	1.93E+00	1.50E+01	1.16E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Cobalt-58	-4.58E-01	1.06E+00	1.68E+00	1.50E+01	1.08E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Cobalt-60	-4.22E-01	1.15E+00	1.57E+00	1.50E+01	1.17E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Cobalt-60	-1.23E+00	9.65E-01	1.45E+00	1.50E+01	1.12E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Cobalt-60	2.68E-01	1.41E+00	2.05E+00	1.50E+01	1.42E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Cobalt-60	9.34E-03	1.30E+00	2.15E+00	1.50E+01	1.30E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Cobalt-60	7.01E-01	1.26E+00	2.25E+00	1.50E+01	1.30E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Cobalt-60	6.07E-01	9.19E-01	1.60E+00	1.50E+01	9.60E-01	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Cobalt-60	-1.55E-01	1.11E+00	1.61E+00	1.50E+01	1.12E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Cobalt-60	3.61E-01	2.00E+00	1.49E+00	1.50E+01	2.01E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Cobalt-60	-4.77E+00	3.19E+00	1.62E+00	1.50E+01	3.87E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Cobalt-60	8.31E-01	1.46E+00	1.47E+00	1.50E+01	1.50E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Cobalt-60	-3.87E-01	1.08E+00	1.75E+00	1.50E+01	1.10E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Cobalt-60	-6.26E-02	8.38E-01	1.41E+00	1.50E+01	8.39E-01	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Iron-59	1.57E+00	3.00E+00	5.23E+00	3.00E+01	3.09E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Iron-59	-5.85E-01	2.85E+00	4.18E+00	3.00E+01	2.86E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Iron-59	-1.43E-01	2.80E+00	4.70E+00	3.00E+01	2.80E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Iron-59	-5.37E-01	2.83E+00	4.66E+00	3.00E+01	2.84E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Iron-59	3.27E+00	3.27E+00	5.88E+00	3.00E+01	3.61E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Iron-59	1.70E+00	2.76E+00	4.72E+00	3.00E+01	2.88E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Iron-59	-2.47E-01	2.97E+00	4.87E+00	3.00E+01	2.97E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Iron-59	1.27E+00	2.66E+00	4.67E+00	3.00E+01	2.73E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Iron-59	-6.38E-01	3.09E+00	4.33E+00	3.00E+01	3.11E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Iron-59	4.16E+00	2.54E+00	4.71E+00	3.00E+01	3.21E+00	pCi/L

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South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Iron-59	-9.19E-01	2.50E+00	4.12E+00	3.00E+01	2.54E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Iron-59	5.45E-01	2.79E+00	4.02E+00	3.00E+01	2.80E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Lanthanum-140	-9.35E-01	6.54E+00	1.08E+01	1.50E+01	6.56E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Lanthanum-140	-5.35E-01	3.72E+00	6.16E+00	1.50E+01	3.72E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Lanthanum-140	1.54E+00	5.48E+00	8.26E+00	1.50E+01	5.52E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Lanthanum-140	5.42E-01	5.19E+00	8.84E+00	1.50E+01	5.19E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Lanthanum-140	-5.92E+00	6.10E+00	9.11E+00	1.50E+01	6.68E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Lanthanum-140	-7.04E-01	6.52E+00	1.08E+01	1.50E+01	6.53E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Lanthanum-140	-4.23E+00	8.72E+00	1.40E+01	1.50E+01	8.94E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Lanthanum-140	1.51E+00	7.49E+00	1.14E+01	1.50E+01	7.53E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Lanthanum-140	4.59E-01	5.62E+00	9.50E+00	1.50E+01	5.62E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Lanthanum-140	3.43E+00	6.55E+00	9.97E+00	1.50E+01	6.74E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Lanthanum-140	-4.99E-01	4.17E+00	5.97E+00	1.50E+01	4.17E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Lanthanum-140	-5.45E+00	5.07E+00	7.68E+00	1.50E+01	5.65E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Manganese-54	2.75E-01	1.08E+00	1.81E+00	1.50E+01	1.09E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Manganese-54	-5.93E-01	1.03E+00	1.69E+00	1.50E+01	1.07E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Manganese-54	-5.78E-01	1.14E+00	1.81E+00	1.50E+01	1.17E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Manganese-54	-3.64E-01	1.54E+00	1.96E+00	1.50E+01	1.55E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Manganese-54	8.27E-01	1.17E+00	2.07E+00	1.50E+01	1.23E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Manganese-54	-1.14E-01	8.78E-01	1.46E+00	1.50E+01	8.80E-01	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Manganese-54	6.96E-01	9.77E-01	1.71E+00	1.50E+01	1.03E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Manganese-54	-3.42E-01	8.86E-01	1.45E+00	1.50E+01	9.00E-01	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Manganese-54	-2.42E-02	9.47E-01	1.61E+00	1.50E+01	9.47E-01	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Manganese-54	-5.30E-01	8.66E-01	1.40E+00	1.50E+01	9.00E-01	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Manganese-54	-5.90E-01	1.11E+00	1.78E+00	1.50E+01	1.14E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Manganese-54	-6.86E-01	8.48E-01	1.36E+00	1.50E+01	9.05E-01	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Niobium-95	-6.38E-01	1.97E+00	2.26E+00	1.50E+01	1.99E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Niobium-95	6.32E-01	1.14E+00	2.02E+00	1.50E+01	1.18E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Niobium-95	6.91E-01	1.41E+00	2.41E+00	1.50E+01	1.45E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Niobium-95	6.53E-01	1.41E+00	2.39E+00	1.50E+01	1.44E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Niobium-95	-9.92E-01	1.24E+00	1.99E+00	1.50E+01	1.32E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Niobium-95	1.90E+00	1.45E+00	1.90E+00	1.50E+01	1.46E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Niobium-95	5.19E-01	1.35E+00	2.34E+00	1.50E+01	1.37E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Niobium-95	2.32E-01	2.28E+00	1.81E+00	1.50E+01	2.28E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Niobium-95	7.07E-01	1.22E+00	2.15E+00	1.50E+01	1.26E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Niobium-95	6.88E-01	1.30E+00	1.79E+00	1.50E+01	1.30E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Niobium-95	-1.91E-02	1.24E+00	2.06E+00	1.50E+01	1.24E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Niobium-95	1.35E+00	1.23E+00	1.95E+00	1.50E+01	1.38E+00	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Tritium	3.97E+02	3.44E+02	5.22E+02	2.00E+03	3.52E+02	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Tritium	-1.82E+01	2.78E+02	4.71E+02	2.00E+03	2.78E+02	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Tritium	1.34E+02	1.86E+02	2.96E+02	2.00E+03	1.88E+02	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Tritium	0.00E+00	2.48E+02	4.16E+02	2.00E+03	2.48E+02	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Tritium	3.51E+01	2.67E+02	4.41E+02	2.00E+03	2.67E+02	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Tritium	-1.82E+01	2.92E+02	4.93E+02	2.00E+03	2.92E+02	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Tritium	2.12E+02	3.31E+02	5.23E+02	2.00E+03	3.33E+02	pCi/L

REMP Year End Report for PALI for 2013
Palisades REMP

South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Tritium	-7.77E+01	2.45E+02	4.25E+02	2.00E+03	2.45E+02	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Tritium	-9.03E+01	2.90E+02	4.99E+02	2.00E+03	2.90E+02	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Tritium	5.29E+01	3.55E+02	5.88E+02	2.00E+03	3.55E+02	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Tritium	1.49E+02	2.54E+02	4.02E+02	2.00E+03	2.55E+02	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Tritium	-4.51E+01	3.17E+02	5.38E+02	2.00E+03	3.17E+02	pCi/L
South Haven Raw Water - SHR(320354001) - SW	15-Jan-13	Zinc-65	-2.12E+00	2.34E+00	3.73E+00	3.00E+01	2.54E+00	pCi/L
South Haven Raw Water - SHR(321563003) - SW	14-Feb-13	Zinc-65	-1.40E+00	2.12E+00	3.32E+00	3.00E+01	2.22E+00	pCi/L
South Haven Raw Water - SHR(323176003) - SW	15-Mar-13	Zinc-65	-3.12E-01	2.44E+00	4.07E+00	3.00E+01	2.44E+00	pCi/L
South Haven Raw Water - SHR(325263003) - SW	15-Apr-13	Zinc-65	1.94E+00	2.72E+00	4.25E+00	3.00E+01	2.87E+00	pCi/L
South Haven Raw Water - SHR(327460003) - SW	15-May-13	Zinc-65	-1.09E+00	2.31E+00	3.65E+00	3.00E+01	2.37E+00	pCi/L
South Haven Raw Water - SHR(329516004) - SW	15-Jun-13	Zinc-65	5.44E-03	2.09E+00	3.10E+00	3.00E+01	2.09E+00	pCi/L
South Haven Raw Water - SHR(331850008) - SW	15-Jul-13	Zinc-65	2.01E+00	3.13E+00	3.39E+00	3.00E+01	3.14E+00	pCi/L
South Haven Raw Water - SHR(333703008) - SW	15-Aug-13	Zinc-65	1.09E+00	1.96E+00	3.02E+00	3.00E+01	2.02E+00	pCi/L
South Haven Raw Water - SHR(335498006) - SW	15-Sep-13	Zinc-65	-1.30E+00	2.07E+00	3.30E+00	3.00E+01	2.16E+00	pCi/L
South Haven Raw Water - SHR(337640003) - SW	15-Oct-13	Zinc-65	2.80E+00	2.30E+00	2.80E+00	3.00E+01	2.33E+00	pCi/L
South Haven Raw Water - SHR(338704003) - SW	15-Nov-13	Zinc-65	-3.25E+00	4.58E+00	3.61E+00	3.00E+01	4.82E+00	pCi/L
South Haven Raw Water - SHR(341025003) - SW	15-Dec-13	Zinc-65	-7.73E-01	1.94E+00	2.76E+00	3.00E+01	1.97E+00	pCi/L

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

GEL Sample ID: 344201001

Client: Entergy Nuclear Operations, Palisades NPP

Client Sample ID: Fish FSH1 Control Ludington Lake Trout

Collect Date: October 02, 2013

Client Matrix: FH

Receive Date: March 07, 2014

Amount of Sample Received:

Report Date: March 12, 2014

Isotope	Run Date	Qualifier	Activity	2 Sigma Uncertainty	MDC	LLD	2 Sigma TPU	Units
Gamma Spec								
K-40	03/11/14		2.50E+03	1.71E+02	4.87E+01	5.00E+02	2.84E+02	pCi/kg
Mn-54	03/11/14	U	4.99E+00	1.28E+01	9.27E+00	1.30E+02	1.28E+01	pCi/kg
Fe-59	03/11/14	U	1.05E+02	1.11E+02	2.00E+02	2.60E+02	1.22E+02	pCi/kg
Co-58	03/11/14	U	6.00E+00	1.82E+01	3.20E+01	1.30E+02	1.84E+01	pCi/kg
Co-60	03/11/14	U	1.86E+00	4.98E+00	8.81E+00	1.30E+02	5.05E+00	pCi/kg
Zn-65	03/11/14	U	-1.07E+00	1.78E+01	2.50E+01	2.60E+02	1.78E+01	pCi/kg
I-131	03/11/14	UI	0.00E+00	3.22E+06	0.00E+00	6.00E+01	3.38E+06	pCi/kg
Cs-134	03/11/14	U	-2.21E+00	5.14E+00	8.43E+00	1.30E+02	5.24E+00	pCi/kg
Cs-137	03/11/14	M	2.00E+01	7.57E+00	6.11E+00	1.50E+02	7.78E+00	pCi/kg

Notes: 1. LLDs are a-priori values.

2. MDCs are calculated a-posteriori values.

3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.

4. Air sample volumes are received in units of ft3. GEL converts the units and reports them as m3.

Qualifiers: U Target isotope was analyzed for but not detected above the MDC and LLD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.

M Reported result is less than the LLD and greater than the MDC.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

GEL Sample ID: 344201002

Client: Entergy Nuclear Operations, Palisades NPP

Client Sample ID: Fish Control Ludington Freshwater Drum

Collect Date: October 02, 2013

Client Matrix: FH

Receive Date: March 07, 2014

Amount of Sample Received:

Report Date: March 12, 2014

Isotope	Run Date	Qualifier	Activity	2 Sigma Uncertainty	MDC	LLD	2 Sigma TPU	Units
Gamma Spec								
K-40	03/11/14		2.64E+03	1.84E+02	5.57E+01	5.00E+02	2.99E+02	pCi/kg
Mn-54	03/11/14	U	-2.47E-01	4.67E+00	7.89E+00	1.30E+02	4.67E+00	pCi/kg
Fe-59	03/11/14	U	3.62E+01	9.87E+01	1.71E+02	2.60E+02	1.00E+02	pCi/kg
Co-58	03/11/14	U	3.27E+00	2.00E+01	3.02E+01	1.30E+02	2.01E+01	pCi/kg
Co-60	03/11/14	U	1.71E+00	4.74E+00	8.45E+00	1.30E+02	4.81E+00	pCi/kg
Zn-65	03/11/14	U	9.69E-01	1.45E+01	2.42E+01	2.60E+02	1.45E+01	pCi/kg
I-131	03/11/14	UI	0.00E+00	3.21E+06	0.00E+00	6.00E+01	3.37E+06	pCi/kg
Cs-134	03/11/14	U	-3.96E-01	4.52E+00	7.64E+00	1.30E+02	4.53E+00	pCi/kg
Cs-137	03/11/14	M	4.93E+01	8.80E+00	6.13E+00	1.50E+02	9.61E+00	pCi/kg

Notes: 1. LLDs are a-priori values.

2. MDCs are calculated a-posteriori values.

3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.

4. Air sample volumes are received in units of ft3. GEL converts the units and reports them as m3.

Qualifiers: U Target isotope was analyzed for but not detected above the MDC and LLD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.

M Reported result is less than the LLD and greater than the MDC.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

GEL Sample ID: 344201003

Client: Entergy Nuclear Operations, Palisades NPP

Client Sample ID: Fish FSHI Control Ludington Sucker

Collect Date: October 02, 2013

Client Matrix: FH

Receive Date: March 07, 2014

Amount of Sample Received:

Report Date: March 12, 2014

Isotope	Run Date	Qualifier	Activity	2 Sigma Uncertainty	MDC	LLD	2 Sigma TPU	Units
Gamma Spec								
K-40	03/11/14		3.22E+03	2.09E+02	6.69E+01	5.00E+02	3.50E+02	pCi/kg
Mn-54	03/11/14	U	-2.69E+00	5.94E+00	9.53E+00	1.30E+02	6.07E+00	pCi/kg
Fe-59	03/11/14	U	-3.50E+01	1.13E+02	1.80E+02	2.60E+02	1.14E+02	pCi/kg
Co-58	03/11/14	U	1.63E+01	1.93E+01	3.53E+01	1.30E+02	2.08E+01	pCi/kg
Co-60	03/11/14	U	-1.55E+00	5.30E+00	8.69E+00	1.30E+02	5.34E+00	pCi/kg
Zn-65	03/11/14	U	-1.98E+00	1.82E+01	2.96E+01	2.60E+02	1.82E+01	pCi/kg
I-131	03/11/14	UI	0.00E+00	3.78E+06	0.00E+00	6.00E+01	3.85E+06	pCi/kg
Cs-134	03/11/14	U	4.28E+00	5.14E+00	9.41E+00	1.30E+02	5.51E+00	pCi/kg
Cs-137	03/11/14	U	2.21E+00	4.52E+00	8.05E+00	1.50E+02	4.64E+00	pCi/kg

Notes: 1. LLDs are a-priori values.

2. MDCs are calculated a-posteriori values.

3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.

4. Air sample volumes are received in units of ft³. GEL converts the units and reports them as m³.

Qualifiers: U Target isotope was analyzed for but not detected above the MDC and LLD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.

M Reported result is less than the LLD and greater than the MDC.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Environmental Laboratory Analysis Report

Company : D.C. Cook Nuclear Plant
Address : 1 Cook Place

Report Date: July 8, 2013

Bridgman, Michigan 49106
Contact: Kendall Brabandt
Project: DC Cook REMP - PO# 1543569

SDG: 327253

GEL ID	Client Description	Matrix	Collection Date	Receipt Date
327253001	OFS-N	Fish	06-JUN-13 11:13:00	08-JUN-13

Analysis Date	Nuclide	Activity Concentration		Units	TPU 1 Sigma	Measured MDC	Required MDC (LLD)	Flags
		+/- Counting Uncertainty 1 Sigma						
17-JUN-13	Be-7	-5.82E+00	+/- 8.76E+00	pCi/kg	8.86E+00	2.85E+01		U
17-JUN-13	K-40	3.13E+03	+/- 5.38E+01	pCi/kg	1.50E+02	3.10E+01		
17-JUN-13	Cr-51	8.86E+00	+/- 9.90E+00	pCi/kg	1.01E+01	3.38E+01		U
17-JUN-13	Mn-54	-1.14E+00	+/- 1.04E+00	pCi/kg	1.07E+00	3.38E+00	1.30E+02	U
17-JUN-13	Fe-59	-1.62E+00	+/- 2.80E+00	pCi/kg	2.83E+00	9.10E+00	2.60E+02	U
17-JUN-13	Co-57	4.95E-01	+/- 7.14E-01	pCi/kg	7.23E-01	2.37E+00		U
17-JUN-13	Co-58	-1.81E-01	+/- 1.06E+00	pCi/kg	1.06E+00	3.55E+00	1.30E+02	U
17-JUN-13	Co-60	-2.27E+00	+/- 1.84E+00	pCi/kg	1.91E+00	3.91E+00	1.30E+02	U
17-JUN-13	Zn-65	-1.13E+00	+/- 2.78E+00	pCi/kg	2.79E+00	9.05E+00	2.60E+02	U
17-JUN-13	Se-75	1.14E+00	+/- 1.35E+00	pCi/kg	1.38E+00	4.40E+00		U
17-JUN-13	Zr-95	-3.02E+00	+/- 2.07E+00	pCi/kg	2.19E+00	6.38E+00		U
17-JUN-13	Nb-95	-1.58E+00	+/- 1.33E+00	pCi/kg	1.38E+00	3.51E+00		U
17-JUN-13	Ru-103	-1.80E+00	+/- 1.10E+00	pCi/kg	1.17E+00	3.48E+00		U
17-JUN-13	Ru-106	6.58E+00	+/- 1.16E+01	pCi/kg	1.17E+01	3.23E+01		U
17-JUN-13	Ag-108m	-1.10E+00	+/- 8.81E-01	pCi/kg	9.18E-01	2.85E+00		U
17-JUN-13	Ag-110m	1.26E+00	+/- 1.63E+00	pCi/kg	1.66E+00	4.83E+00		U
17-JUN-13	Sb-124	1.80E+00	+/- 2.13E+00	pCi/kg	2.17E+00	7.40E+00		U
17-JUN-13	Sb-125	-5.65E-01	+/- 2.55E+00	pCi/kg	2.55E+00	8.41E+00		U
17-JUN-13	I-131	-2.48E+00	+/- 2.95E+00	pCi/kg	3.00E+00	8.38E+00	6.00E+01	U
17-JUN-13	Cs-134	5.42E-01	+/- 1.14E+00	pCi/kg	1.14E+00	3.86E+00	6.00E+01	U
17-JUN-13	Cs-137	7.37E+00	+/- 1.24E+00	pCi/kg	1.27E+00	3.48E+00	6.00E+01	M
17-JUN-13	Ba-140	1.54E+01	+/- 6.18E+00	pCi/kg	7.15E+00	2.14E+01		U
17-JUN-13	La-140	-1.91E+00	+/- 2.25E+00	pCi/kg	2.29E+00	5.59E+00		U
17-JUN-13	Ce-141	-2.80E+00	+/- 2.23E+00	pCi/kg	2.33E+00	5.49E+00		U
17-JUN-13	Ce-144	-1.76E+00	+/- 5.65E+00	pCi/kg	5.67E+00	1.85E+01		U
17-JUN-13	Ac-228	3.24E+01	+/- 7.27E+00	pCi/kg	1.06E+01	1.66E+01		UI
17-JUN-13	Th-228	5.08E-01	+/- 2.55E+00	pCi/kg	2.55E+00	6.44E+00		U

GEL ID	Client Description	Matrix	Collection Date	Receipt Date
327253002	ONS-N	Fish	06-JUN-13 09:14:00	08-JUN-13

Analysis Date	Nuclide	Activity Concentration		Units	TPU 1 Sigma	Measured MDC	Required MDC (LLD)	Flags
		+/- Counting Uncertainty 1 Sigma						
18-JUN-13	Be-7	8.87E+00	+/- 1.19E+01	pCi/kg	1.21E+01	3.41E+01		U
18-JUN-13	K-40	3.62E+03	+/- 6.63E+01	pCi/kg	1.74E+02	3.76E+01		
18-JUN-13	Cr-51	2.05E+01	+/- 1.11E+01	pCi/kg	1.21E+01	3.78E+01		U

- Notes:
1. LLDs are a-priori values.
 2. MDCs are calculated a-posteriori values.
 3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
 4. Results are statistically positive at the 99.7% confidence level (activity is greater than or equal to the three sigma uncertainty).

- Qualifiers:
- U - Target isotope was analyzed for but not detected above the MDC and LLD.
 - UI - Uncertain identification for gamma spectroscopy.
 - X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
 - M - Reported result is less than the LLD and greater than the MDC.
 - DL - MDC > LLD

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Environmental Laboratory Analysis Report

Company : D.C. Cook Nuclear Plant
Address : 1 Cook Place

Report Date: July 8, 2013

Bridgman, Michigan 49106
Contact: Kendall Brabandt
Project: DC Cook REMP - PO# 1543569

SDG: 327253

GEL ID	Client Description	Matrix	Collection Date	Receipt Date			
327253003	OFS-S	Fish	06-JUN-13 10:06:00	08-JUN-13			
Analysis Date	Nuclide	Activity Concentration +/- Counting Uncertainty 1 Sigma	Units	TPU 1 Sigma	Measured MDC	Required MDC (LLD)	Flags
27-JUN-13	Co-58	4.20E+00 +/- 2.78E+00	pCi/kg	2.95E+00	8.19E+00	1.30E+02	U
27-JUN-13	Co-60	5.05E-01 +/- 2.22E+00	pCi/kg	2.22E+00	7.33E+00	1.30E+02	U
27-JUN-13	Zn-65	-1.77E+01 +/- 5.23E+00	pCi/kg	6.91E+00	1.63E+01	2.60E+02	U
27-JUN-13	Se-75	-4.66E+00 +/- 3.31E+00	pCi/kg	3.49E+00	1.05E+01		U
27-JUN-13	Zr-95	1.90E+00 +/- 4.75E+00	pCi/kg	4.77E+00	1.58E+01		U
27-JUN-13	Nb-95	1.92E+00 +/- 2.63E+00	pCi/kg	2.66E+00	8.79E+00		U
27-JUN-13	Ru-103	-3.43E+00 +/- 3.01E+00	pCi/kg	3.11E+00	9.63E+00		U
27-JUN-13	Ru-106	-1.11E+01 +/- 2.10E+01	pCi/kg	2.12E+01	7.00E+01		U
27-JUN-13	Ag-108m	3.60E+00 +/- 1.99E+00	pCi/kg	2.16E+00	6.72E+00		U
27-JUN-13	Ag-110m	4.36E+00 +/- 3.13E+00	pCi/kg	3.30E+00	1.05E+01		U
27-JUN-13	Sb-124	-2.66E+00 +/- 4.96E+00	pCi/kg	5.00E+00	1.62E+01		U
27-JUN-13	Sb-125	-3.00E+00 +/- 6.12E+00	pCi/kg	6.16E+00	2.00E+01		U
27-JUN-13	I-131	1.57E+01 +/- 1.37E+01	pCi/kg	1.42E+01	4.64E+01	6.00E+01	U
27-JUN-13	Cs-134	-1.62E-01 +/- 2.70E+00	pCi/kg	2.70E+00	8.21E+00	6.00E+01	U
27-JUN-13	Cs-137	3.98E+00 +/- 2.72E+00	pCi/kg	2.87E+00	8.09E+00	6.00E+01	U
27-JUN-13	Ba-140	-7.54E+00 +/- 2.44E+01	pCi/kg	2.44E+01	7.86E+01		U
27-JUN-13	La-140	-1.21E+01 +/- 7.57E+00	pCi/kg	8.09E+00	2.42E+01		U
27-JUN-13	Ce-141	3.53E+00 +/- 8.03E+00	pCi/kg	8.08E+00	1.66E+01		U
27-JUN-13	Ce-144	5.64E+00 +/- 1.36E+01	pCi/kg	1.36E+01	4.55E+01		U
27-JUN-13	Ac-228	4.63E+00 +/- 2.24E+01	pCi/kg	2.24E+01	2.68E+01		U
27-JUN-13	Th-228	-1.19E+00 +/- 7.25E+00	pCi/kg	7.26E+00	1.57E+01		U

- Notes:
1. LLDs are a-priori values.
 2. MDCs are calculated a-posteriori values.
 3. Gamma spectroscopy analysis results are calculated from a measurement using only one gamma energy line.
 4. Results are statistically positive at the 99.7% confidence level (activity is greater than or equal to the three sigma uncertainty).

- Qualifiers:
- U - Target isotope was analyzed for but not detected above the MDC and LLD.
 - UI - Uncertain identification for gamma spectroscopy.
 - X - Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
 - M - Reported result is less than the LLD and greater than the MDC.
 - DL - MDC > LLD

ATTACHMENT E

**GEL LABORATORIES, LLC
INERLABORAORY COMPARISON PROGRAM RESULTS**



Laboratories LLC

2013 ANNUAL QUALITY ASSURANCE REPORT

FOR THE

**RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM (REMP)**

GEL LABORATORIES, LLC
P.O. Box 30712, Charleston, SC 29417
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2013 ANNUAL QUALITY ASSURANCE REPORT
FOR THE
RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM (REMP)

Approved By:

Robert L. Pullano
Director, Quality Systems

February 11, 2013

Date



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2013 ANNUAL QUALITY ASSURANCE REPORT FOR THE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

1. Introduction

GEL Laboratories, LLC (GEL) is a privately owned environmental laboratory dedicated to providing personalized client services of the highest quality. GEL was established as an analytical testing laboratory in 1981. Now a full service lab, our analytical divisions use state of the art equipment and methods to provide a comprehensive array of organic, inorganic, and radiochemical analyses to meet the needs of our clients.

At GEL, quality is emphasized at every level of personnel throughout the company. Management's ongoing commitment to good professional practice and to the quality of our testing services to our customers is demonstrated by their dedication of personnel and resources to develop, implement, assess, and improve our technical and management operations.

The purpose of GEL's quality assurance program is to establish policies, procedures, and processes to meet or exceed the expectations of our clients. To achieve this, all personnel that support these services to our clients are introduced to the program and policies during their initial orientation, and annually thereafter during company-wide training sessions.

GEL's primary goals are to ensure that all measurement data generated are scientifically and legally defensible, of known and acceptable quality per the data quality objectives (DQOs), and thoroughly documented to provide sound support for environmental decisions. In addition, GEL continues to ensure compliance with all contractual requirements, environmental standards, and regulations established by local, state and federal authorities.

GEL administers the QA program in accordance with the Quality Assurance Plan, GL-QS-B-001. Our Quality Systems include all quality assurance (QA) policies and quality control (QC) procedures necessary to plan, implement, and assess the work we perform. GEL's QA Program establishes a quality management system (QMS) that governs all of the activities of our organization.

This report entails the quality assurance program for the proficiency testing and environmental monitoring aspects of GEL for 2013. GEL's QA Program is designed to monitor the quality of analytical processing associated with environmental, radiobioassay, effluent (10 CFR Part 50), and waste (10 CFR Part 61) sample analysis.

This report covers the category of Radiological Environmental Monitoring Program (REMP) and includes:

- Intra-laboratory QC results analyzed during 2013.
- Inter-laboratory QC results analyzed during 2013 where known values were available.



2. Quality Assurance Programs for Inter-laboratory, Intra-laboratory and Third Party Cross-Check

In addition to internal and client audits, our laboratory participates in annual performance evaluation studies conducted by independent providers. We routinely participate in the following types of performance audits:

- Proficiency testing and other inter-laboratory comparisons
- Performance requirements necessary to retain Certifications
- Evaluation of recoveries of certified reference and in-house secondary reference materials using statistical process control data.
- Evaluation of relative percent difference between measurements through SPC data.

We also participate in a number of proficiency testing programs for federal and state agencies and as required by contracts. It is our policy that no proficiency evaluation samples be analyzed in any special manner. Our annual performance evaluation participation generally includes a combination of studies that support the following:

- US Environmental Protection Agency Discharge Monitoring Report, Quality Assurance Program (DMR-QA). Annual national program sponsored by EPA for laboratories engaged in the analysis of samples associated with the NPDES monitoring program. Participation is mandatory for all holders of NPDES permits. The permit holder must analyze for all of the parameters listed on the discharge permit. Parameters include general chemistry, metals, BOD/COD, oil and grease, ammonia, nitrates, etc.
- Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP). A semiannual program developed by DOE in support of DOE contractors performing waste analyses. Participation is required for all laboratories that perform environmental analytical measurements in support of environmental management activities. This program includes radioactive isotopes in water, soil, vegetation and air filters.
- ERA's MRAD-Multimedia Radiochemistry Proficiency test program. This program is for labs seeking certification for radionuclides in wastewater and solid waste. The program is conducted in strict compliance with USEPA National Standards for Water Proficiency study.
- ERA's InterLaB RadCheM Proficiency Testing Program for radiological analyses. This program completes the process of replacing the USEPA EMSL-LV Nuclear Radiation Assessment Division program discontinued in 1998. Laboratories seeking certification for radionuclide analysis in drinking water also use the study. This program is conducted in strict compliance with the USEPA National Standards for Water Proficiency Testing Studies. This program encompasses Uranium by EPA method 200.8 (for drinking water certification in Utah/Primary NELAP), gamma emitters, Gross Alpha/Beta, Iodine-131, naturally occurring radioactive isotopes, Strontium-89/90, and Tritium.



- ERA's Water Pollution (WP) biannual program for waste methodologies includes parameters for both organic and inorganic analytes.
- ERA's Water Supply (WS) biannual program for drinking water methodologies includes parameters for organic and inorganic analytes.
- Environmental Cross-Check Program administered by Eckert & Ziegler Analytics, Inc. This program encompasses radionuclides in water, soil, milk, naturally occurring radioactive isotopes in soil and air filters.

GEL procures single-blind performance evaluation samples from Eckert & Ziegler Analytics to verify the analysis of sample matrices processed at GEL. Samples are received on a quarterly basis. GEL's Third-Party Cross-Check Program provides environmental matrices encountered in a typical nuclear utility REMP. The Third-Party Cross-Check Program is intended to meet or exceed the inter-laboratory comparison program requirements discussed in NRC Regulatory Guide 4.15. Once performance evaluation samples have been prepared in accordance with the instructions provided by the PT provider, samples are managed and analyzed in the same manner as environmental samples from GEL's clients.

3. Quality Assurance Program for Internal and External Audits

During each annual reporting period, at least one internal assessment of each area of the laboratory is conducted in accordance with the pre-established schedule from Standard Operating Procedure for the Conduct of Quality Audits, GL-QS-E-001. The annual internal audit plan is reviewed for adequacy and includes the scheduled frequency and scope of quality control actions necessary to GEL's QA program. Internal audits are conducted at least annually in accordance with a schedule approved by the Quality Systems Director. Supplier audits are contingent upon the categorization of the supplier, and may or may not be conducted prior to the use of a supplier or subcontractor. Type I suppliers and subcontractors, regardless of how they were initially qualified, are re-evaluated at least once every three years.

In addition, prospective customers audit GEL during pre-contract audits. GEL hosts several external audits each year for both our clients and other programs. These programs include environmental monitoring, waste characterization, and radiobioassay. The following list of programs may audit GEL at least annually or up to every three years depending on the program.

- NELAC, National Environmental Laboratory Accreditation Program
- DOECAP, U.S. Department of Energy Consolidated Audit Program
- DOELAP, U.S. Department of Energy Laboratory Accreditation Program
- DOE QSAS, U.S. Department of Energy, Quality Systems for Analytical Services
- ISO/IEC 17025:2005
- A2LA, American Association for Laboratory Accreditation
- DOD ELAP, US Department of Defense Environmental Accreditation Program
- NUPIC, Nuclear Procurement Issues Committee
- South Carolina Department of Health and Environmental Control (SC DHEC)

The annual radiochemistry laboratory internal audit (13-RAD-001) was conducted in August 2013. Three (3) findings, two (2) observations, and one (1) recommendations resulted from this



assessment. By October, 2013, each finding was closed and appropriate laboratory staff addressed each observation and recommendation.

4. Performance Evaluation Acceptance Criteria for Environmental Sample Analysis

GEL utilized an acceptance protocol based upon two performance models. For those inter-laboratory programs that already have established performance criteria for bias (i.e., MAPEP, and ERA/ELAP), GEL will utilize the criteria for the specific program. For intra-laboratory or third party quality control programs that do not have a specific acceptance criteria (i.e. the Eckert-Ziegler Analytics Environmental Cross-check Program), results will be evaluated in accordance with GEL's internal acceptance criteria.

5. Performance Evaluation Samples

Performance Evaluation (PE) results and internal quality control sample results are evaluated in accordance with GEL acceptance criteria. The first criterion concerns bias, which is defined as the deviation of any one result from the known value. The second criterion concerns precision, which deals with the ability of the measurement to be replicated by comparison of an individual result with the mean of all results for a given sample set.

At GEL, we also evaluate our analytical performance on a regular basis through statistical process control (SPC) acceptance criteria. Where feasible, this criterion is applied to both measures of precision and accuracy and is specific to sample matrix. We establish environmental process control limits at least annually.

For Radiochemistry analysis, quality control evaluation is based on static limits rather than those that are statistically derived. Our current process control limits are maintained in GEL's AlphaLIMS. We also measure precision with matrix duplicates and/or matrix spike duplicates. The upper and lower control limits (UCL and LCL respectively) for precision are plus or minus three times the standard deviation from the mean of a series of relative percent differences. The static precision criteria for radiochemical analyses are 0 - 20%, for activity levels exceeding the contract required detection limit (CRDL).

6. Quality Control Program for Environmental Sample Analysis

GEL's internal QA Program is designed to include QC functions such as instrumentation calibration checks (to insure proper instrument response), blank samples, instrumentation backgrounds, duplicates, as well as overall staff qualification analyses and statistical process controls. Both quality control and qualification analyses samples are used to be as similar as the matrix type of those samples submitted for analysis by the various laboratory clients. These performance test samples (or performance evaluation samples) are either actual sample submitted in duplicate in order to evaluate the precision of laboratory measurements, or fortified blank samples, which have been given a known quantity of a radioisotope that is in the interest to GEL's clients.

Accuracy (or Bias) is measured through laboratory control samples and/or matrix spikes, as well as surrogates and internal standards. The UCLs and LCLs for accuracy are plus or minus three times the standard deviation from the mean of a series of recoveries. The static limit for



radiochemical analyses is 75 - 125%. Specific instructions for out-of-control situations are provided in the applicable analytical SOP.

GEL's Laboratory Control Standard (LCS) is an aliquot of reagent water or other blank matrix to which known quantities of the method analytes are added in the laboratory. The LCS is analyzed exactly like a sample, and its purpose is to determine whether the methodology is in control, and whether the laboratory is capable of making accurate and precise measurements. Some methods may refer to these samples as Laboratory Fortified Blanks (LFB). The requirement for recovery is between 75 and 125% for radiological analyses excluding drinking water matrix.

$$\text{Bias (\%)} = \frac{(\text{observed concentration})}{(\text{known concentration})} * 100 \%$$

Precision is a data quality indicator of the agreement between measurements of the same property, obtained under similar conditions, and how well they conform to themselves. Precision is usually expressed as standard deviation, variance or range in either absolute or relative (percentage) terms.

GEL's laboratory duplicate (DUP or LCSD) is an aliquot of a sample taken from the same container and processed in the same manner under identical laboratory conditions. The aliquot is analyzed independently from the parent sample and the results are compared to measure precision and accuracy.

If a sample duplicate is analyzed, it will be reported as Relative Percent Difference (RPD). The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.

$$\text{Difference (\%)} = \frac{(\text{high duplicate result} - \text{low duplicate result})}{(\text{average of results})} * 100 \%$$

7. Summary of Data Results

During 2013, forty-four (44) radioisotopes associated with seven (7) matrix types were analyzed under GEL's Performance Evaluation program in participation with ERA, MAPEP, and Eckert & Ziegler Analytics. Matrix types were representative of client analyses performed during 2012. Of the four hundred twenty-three (423) total results reported, 97% (410 of 423) were found to be acceptable. The list below contains the type of matrix evaluated by GEL.

- Air Filter
- Cartridge
- Water
- Milk
- Soil
- Liquid



- Vegetation

Graphs are provided in Figures 1-9 of this report to allow for the evaluation of trends or biases. These graphs include radioisotopes Cobalt-60, Cesium-137, Tritium, Strontium-90, Gross Alpha, Gross Beta, Iodine-131, Americium-241, and Plutonium-238.

8. Summary of Participation in the Eckert & Ziegler Analytics Environmental Cross-Check Program

Eckert & Ziegler Analytics provided samples for eighty-nine (89) individual environmental analyses. The accuracy of each result reported to Eckert & Ziegler Analytics, Inc. is measured by the ratio of GEL's result to the known value. All results fell within GEL's acceptance criteria (100%).

9. Summary of Participation in the MAPEP Monitoring Program

MAPEP Series 27, 28 and 29 were analyzed by the laboratory. Of the one hundred thirty-eight (138) analyses, 96% (133 out of 138) of all results fell within the PT provider's acceptance criteria. Five analytical failures occurred: Uranium-238/235 and Total Uranium in vegetation by ICP/MS, and Uranium-234/233, and Uranium-238 by Alpha Spectroscopy.

For the corrective actions associated with MAPEP Series 28, refer to CARR130513-789 which is detailed in Table 8.

10. Summary of Participation in the ERA MRaD PT Program

The ERA MRaD program provided samples (MRAD-18 and MRAD-19) for one hundred fifty (150) individual environmental analyses. One hundred forty-five (145) of the 150 analyses fell within the PT provider's acceptance criteria (97%). Five analytical failures occurred: Cesium-134, Cesium-137 and Zinc-65 in soil, and Uranium-234 and Total Uranium in vegetation.

For the corrective actions associated with MRAD-18 and MRAD-19, refer to CARR130522-791 and CARR131205-845 which are detailed in Table 8.

11. Summary of Participation in the ERA PT Program

The ERA program provided samples (RAD-92 and RAD-94) for forty-six (46) individual environmental analyses. Of the 44 analyses, 93% (43 out of 44) of all results fell within the PT provider's acceptance criteria. Two analytical failures occurred: Gross Alpha and Strontium-89 in water.

For the corrective actions associated with RAD-92 refer to corrective actions CARR130826-810 (Table 8).

12. Corrective Action Request and Report (CARR)

There are two categories of corrective action at GEL. One is corrective action implemented at the analytical and data review level in accordance with the analytical SOP. The other is formal corrective action documented by the Quality Systems Team in accordance with GL-QS-E-002. A



formal corrective action is initiated when a nonconformance reoccurs or is so significant that permanent elimination or prevention of the problem is required. Formal corrective action investigations include root cause analysis.

GEL includes quality requirements in most analytical standard operating procedures to ensure that data are reported only if the quality control criteria are met or the quality control measures that did not meet the acceptance criteria are documented. A formal corrective action is implemented according to GL-QS-E-002 for Conducting Corrective/Preventive Action and Identifying Opportunities for Improvement. Recording and documentation is performed following guidelines stated in GL-QS-E-012 for Client NCR Database Operation.

Any employee at GEL can identify and report a nonconformance and request that corrective action be taken. Any GEL employee can participate on a corrective action team as requested by the QS team or Group Leaders. The steps for conducting corrective action are detailed in GL-QS-E-002. In the event that correctness or validity of the laboratory's test results in doubt, the laboratory will take corrective action. If investigations show that the results have been impacted, affected clients will be informed of the issue in writing within five (5) calendar days of the discovery.

Table 8 provides the status of CARRs for radiological performance testing during 2013. **It has been determined that causes of the failures did not impact any data reported to our clients.**



13. References

1. GEL Quality Assurance Plan, GL-QS-B-001
2. GEL Standard Operating Procedure for the Conduct of Quality Audits, GL-QS-E-001
3. GEL Standard Operating Procedure for Conducting Corrective/Preventive Action and Identifying Opportunities for Improvement, GL-QS-E-002
4. GEL Standard Operating Procedure for AlphaLIMS Documentation of Nonconformance Reporting and Dispositioning and Control of Nonconforming Items, GL-QS-E-004
5. GEL Standard Operating Procedure for Handling Proficiency Evaluation Samples, GL-QS-E-013
6. GEL Standard Operating Procedure for Quality Assurance Measurement Calculations and Processes, GL-QS-E-014
7. 40 CFR Part 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants
8. ISO/IEC 17025-2005, General Requirements for the Competence of Testing and Calibration Laboratories
9. ANSI/ASQC E4-1994, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs, American National Standard
10. 2003 NELAC Standard, National Environmental Laboratory Accreditation Program
11. 2009 TNI Standard, The NELAC Institute, National Environmental Accreditation Program
12. MARLAP, Multi-Agency Radiological Laboratory Analytical Protocols
13. 10 CFR Part 21, Reporting of Defects and Noncompliance
14. 10 CFR Part 50 Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
15. 10 CFR Part 61, Licensing Requirements for Land Disposal and Radioactive Waste
16. NRC REG Guide 4.15 and NRC REG Guide 4.8



TABLE 1
2013 RADIOLOGICAL PROFICIENCY TESTING RESULTS AND ACCEPTANCE CRITERIA

PT Provider	Quarter / Year	Analytical Date	Sample Number	Sample Media	Unit	Analyte / Nuclide	GEL Value	Known value	Acceptance Range/ Ratio	Evaluation
MAPEP	1st/ 2013	02/27/13	GENE01-13-RdFR1	Filter	Bq/sample	Uranium-234/233	0.0143	0.0155	0.0109-0.0202	Acceptable
MAPEP	1st/ 2013	02/27/13	GENE01-13-RdFR1	Filter	Bq/sample	Uranium-238	0.0999	0.098	0.069-0.127	Acceptable
EZA	4th/2012	02/01/13	E10323	Cartridge	pCi	Iodine-131	7.31E+01	7.29E+01	1.00	Acceptable
EZA	4th/2012	02/01/13	E10324	Milk	pCi/L	Strontium-89	9.89E+00	1.38E+01	0.72	Acceptable
EZA	4th/2012	02/01/13	E10324	Milk	pCi/L	Strontium-90	9.83E+00	1.48E+01	1.02	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Iodine-131	9.57E+01	9.00E+01	1.06	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Chromium-51	3.67E+02	3.48E+02	1.06	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Cesium-134	1.54E+02	1.65E+02	0.93	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Cesium-137	1.18E+02	1.17E+02	1.01	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Cobalt-58	9.85E+01	9.85E+01	1	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Manganese-54	1.16E+02	1.16E+02	1	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Iron-59	1.33E+02	1.16E+02	1.15	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Zinc-65	3.19E+02	2.91E+02	1.09	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Cobalt-60	1.73E+02	1.70E+02	1.02	Acceptable
EZA	4th/2012	02/01/13	E10325	Milk	pCi/L	Cesium-141	5.38E+01	5.10E+01	1.05	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Iodine-131	7.47E+01	7.25E+01	1.03	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Chromium-51	3.81E+02	3.62E+02	1.05	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Cesium-134	1.57E+02	1.73E+02	0.91	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Cesium-137	1.25E+02	1.22E+02	1.03	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Cobalt-58	1.02E+02	1.03E+02	0.99	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Manganese-54	1.28E+02	1.21E+02	1.06	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Iron-59	1.38E+02	1.21E+02	1.14	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Zinc-65	2.13E+02	1.94E+02	1.1	Acceptable
EZA	4th/2012	02/01/13	E10380	Water	pCi/L	Cobalt-60	1.80E+02	1.77E+02	1.01	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Barium-133	55.4	54.4	44.9-60.2	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Cesium-134	27.2	29.9	23.4-32.9	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Cesium-137	74.3	75.3	67.8-85.5	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Cobalt-60	89.0	97.7	87.9-110	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Zinc-65	126	114	103-136	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Gross Alpha	26.0	24.8	12.5-33.0	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Gross Beta	19.4	19.3	11.3-27.5	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Gross Alpha	31.4	24.8	12.5-33.0	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Radium-226	10.4	9.91	7.42-11.6	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Radium-228	4.84	5.22	3.14-6.96	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Uranium (Nat)	6.43	5.96	4.47-7.13	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	ug/L	Uranium (Nat) mass	9.59	8.69	6.50-10.4	Acceptable



ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Radium-226	11.60	9.91	7.42-11.6	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Radium-228	5.13	5.22	3.14-6.96	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Uranium (Nat)	5.95	5.96	4.47-7.13	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	ug/L	Uranium (Nat) mass	9.95	8.69	6.50-10.4	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Tritium	1430	1320	1040-1480	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Strontium-89	47.5	48	37.6-55.3	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Strontium-90	35.9	39.8	29.2-45.8	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Strontium-89	42.9	48	37.6-55.3	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Strontium-90	34.6	39.8	29.2-45.8	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Iodine-131	23.6	22.7	18.8-27.0	Acceptable
ERA	1st/ 2013	02/28/13	RAD - 92	Water	pCi/L	Iodine-131	27	22.7	18.8-27.0	Acceptable
EZA	1st/ 2013	04/25/13	E10469	Cartridge	pCi	Iodine-131	9.38E+01	9.27E+01	1.01	Acceptable
EZA	1st/ 2013	04/25/13	E10470	Milk	pCi/L	Strontium-89	1.07E+02	9.97E+01	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10470	Milk	pCi/L	Strontium-90	1.18E+01	1.10E+01	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Iodine-131	3.54E+00	1.67E+00	1.12	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Cerium-141	2.00E+01	1.87E+01	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Chromium-51	5.09E+01	4.72E+01	1.08	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Cesium-134	2.06E+02	2.14E+02	0.96	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Cesium-137	2.83E+02	2.66E+02	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Cobalt-58	2.19E+02	2.08E+02	1.05	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Mn-54	2.21E+02	2.08E+02	1.06	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Iron-59	2.78E+02	2.52E+02	1.1	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Zinc-65	3.39E+02	3.01E+02	1.13	Acceptable
EZA	1st/ 2013	04/25/13	E10471	Milk	pCi/L	Cobalt-60	4.02E+02	4.00E+02	1.01	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Iodine-131	1.12E+02	9.28E+01	1.21	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Cerium-141	1.88E+02	1.79E+02	1.05	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Chromium-51	4.84E+02	4.52E+02	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Cesium-134	1.96E+02	2.05E+02	0.96	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Cesium-137	2.71E+02	2.54E+02	1.07	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Cobalt-58	2.03E+02	1.99E+02	1.02	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Mn-54	2.15E+02	1.99E+02	1.08	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Iron-59	2.67E+02	2.41E+02	1.11	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Zinc-65	3.14E+02	2.88E+02	1.09	Acceptable
EZA	1st/ 2013	04/25/13	E10472	Water	pCi/L	Cobalt-60	3.92E+02	3.83E+02	1.02	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-27-GrF28	Filter	Bq/sample	Gross Alpha	0.656	1.20	0.36-2.04	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-27-GrF29	Filter	Bq/sample	Gross Beta	0.954	0.85	0.43-1.28	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Americium-241	118	113	79-147	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cesium-134	829	887	621-1153	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cesium-137	623	587	411-763	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cobalt-57	1.04	0	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cobalt-60	737	691	484-898	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Iron-55	-0.380	0	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Manganese-54	0.760	0	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Nickel-63	719	670	469-871	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Plutonium-238	0.571	0.52	Sens. Eval.	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Plutonium-	77.70	79.5	55.7-103.4	Acceptable



						239/240				
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Potassium-40	713	625	438-813	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Strontium-90	693.0	628	440-816	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Technetium-99	419.0	444	311-577	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Uranium-234/233	60.0	62.5	43.8-81.3	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Uranium-238	274	281	197-365	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Zinc-65	1130	995	697-1294	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Americium-241	0.690	0.689	0.428-0.896	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cesium-134	21.1	24.4	17.1-31.7	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cesium-137	0.10	0.0	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cobalt-57	31.0	30.9	21.6-40.2	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cobalt-60	19.4	19.6	13.7-25.4	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Hydrogen-3	517	507	355-659	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Iron-55	39.7	44.0	30.8-57.2	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Manganese-54	28.0	27.4	19.2-35.6	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Nickel-63	32.9	33.4	23.4-43.4	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Plutonium-238	0.825	0.884	0.619-1.149	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Pu-239/240	0.0162	0.0096	Sens. Eval.	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Potassium-40	-0.471	0	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Strontium-90	12.5	10.5	7.4-13.7	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Technetium-99	12.9	13.1	9.2-17.0	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Uranium-234/233	0.289	0.315	0.221-0.410	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Uranium-238	1.81	1.95	1.37-2.54	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-MaW28	Water	Bq/L	Zinc-65	32.8	30.4	21.3-39.5	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-GrW28	Water	Bq/L	Gross Alpha	2.60	2.31	0.69-3.93	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-GrW28	Water	Bq/L	Gross Beta	14.2	13.0	6.5-19.5	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-XaW28	Water	Bq/L	Iodine-129	5.94	6.06	4.24-7.88	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-235	0.036	0.036	0.025-0.047	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-238	18.0	18.6	13.0-24.2	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-Total	17.7	18.6	13.0-24.2	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Americium-241	0.106	0.104	0.073-0.135	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cesium-134	1.75	1.78	1.25-2.31	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cesium-137	2.71	2.60	1.82-3.38	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cobalt-57	2.51	2.36	1.65-3.07	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cobalt-60	0.005	0.00	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Manganese-54	4.43	4.26	2.98-5.54	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Plutonium-238	0.124	0.127	0.089-0.165	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Pu-239/240	0.118	0.1210	0.085-0.157	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Strontium-90	1.54	1.49	1.04-1.94	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Uranium-234/233	0.0342	0.0318	0.0223-0.0413	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Uranium-238	0.230	0.231	0.162-0.300	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Zinc-65	3.38	3.13	2.19-4.07	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Alpha	0.656	1.20	0.36-2.04	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Beta	0.95	0.85	0.43-1.28	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Americium-241	0.106	0.104	0.073-0.135	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-235	0.0029	0.001	0.0009-0.0017	Not Accept.
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-238	0.419	0.180	0.13-0.23	Not Accept.
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-Total	0.4219	0.180	0.13-0.23	Not Accept.
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Americium-241	0.1350	0.140	0.098-0.182	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cesium-134	0.0525	0.00	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cesium-137	7.13	6.87	4.81-8.93	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cobalt-57	8.86	8.68	6.08-11.28	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cobalt-60	6.07	5.85	4.10-7.61	Acceptable



MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Manganese-54	-0.002	0.00	False Pos Test	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Plutonium-238	0.110	0.110	0.077-0.143	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Pu-239/240	0.113	0.123	0.086-0.160	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Strontium-90	1.358	1.64	1.15-2.13	Acceptable
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Uranium-234/233	0.0081	0.0038	Sens. Eval.	Not Accept.
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Uranium-238	0.00489	0.002	Sens. Eval.	Not Accept.
MAPEP	2nd/2013	05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Zinc-65	6.59	6.25	4.38-8.13	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Actinium-228	1500	1240	795-1720	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Americium-241	225	229	134-297	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Bismuth-212	1250	1240	330-1820	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Bismuth-214	4410	3660	2200-5270	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Cesium-134	7850	6370	4160-7650	Not Accept.
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Cesium-137	8070	6120	4690-7870	Not Accept.
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Cobalt-60	10300	7920	5360-10900	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Lead-212	1290	1240	812-1730	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Lead-214	4690	3660	2140-5460	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Manganese-54	<63.4	<1000	0-1000	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Plutonium-238	651	788.00	474-1090	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Plutonium-239	320	366.00	239-506	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Potassium-40	10300	10300	7520-13800	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Strontium-90	6730	8530	3250-13500	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Thorium-234	3290	1900	601-3570	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Zinc-65	1910	1400	1110-1860	Not Accept.
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Strontium-90	6730	8530	3250-13500	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Uranium-234	1210	1920	1170-2460	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Uranium-238	1630	1900	1180-2410	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	pCi/kg	Uranium-Total	2840	3920	2130-5170	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Soil	ug/kg	Uranium-Total(mass)	4150	5710	3150-7180	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Americium-241	629	553	338-735	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Cesium-134	1400	1240	797-1610	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Cesium-137	687	544	394-757	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Cobalt-60	2410	1920	1320-2680	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Curium-244	1420	1340	657-2090	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Manganese-54	<47.4	<300	0.00-300	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Plutonium-238	2060	1980	1180-2710	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Plutonium-239	2230	2260	1390-3110	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Potassium-40	35600	31900	23000-44800	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Strontium-90	3720	3840	2190-5090	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-234	2650	2460	1620-3160	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-238	2580	2440	1630-3100	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-Total	5361	5010	3390-6230	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	ug/kg	Uranium-Total(mass)	7740	7310	4900-9280	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Vegetation	pCi/kg	Zinc-65	1150	878	633-1230	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Americium-241	62.9	66.8	41.2-90.4	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Cesium-134	1080	1110	706-1380	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Cesium-137	971	940	706-1230	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Cobalt-60	217	214	166-267	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Iron-55	224	225	69.8-440	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Manganese-54	<5.27	<50.0	0-50.0	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Plutonium-238	48.0	50.1	34.3-65.9	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Plutonium-239	62.7	65.2	47.2-85.2	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Strontium-90	139	138	67.4-207	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-234	54.5	59.4	36.8-89.6	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-238	58.5	58.9	38.1-81.4	Acceptable



ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-Total	117	121	67.0-184	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	ug/Filter	Uranium-Total(mass)	176	176	113-248	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Zinc-65	222	199	142-275	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Gross Alpha	55.5	42.3	14.2-65.7	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Filter	pCi/Filter	Gross Beta	31	25.1	15.9-36.6	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Americium-241	118	118	79.5-158	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Cesium-134	1320	1400	1030-1610	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Cesium-137	1900	1880	1600-2250	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Cobalt-60	2370	2270	1970-2660	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Iron-55	812	712	424-966	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Manganese-54	<7.6	<100	0.00-100	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Plutonium-238	91	99	73.1-123	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Plutonium-239	161	185	144-233	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Strontium-90	144	137	89.2-181	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Uranium-234	47.3	48.8	36.7-62.9	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Uranium-238	50.8	48.4	36.9-59.4	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Uranium-Total	98.1	99.5	73.1-129	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	ug/L	Uranium-Total(mass)	152	145	116-175	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Zinc-65	428	384	320-484	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Gross Alpha	138.0	130	46.2-201	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Gross Beta	87	78.9	45.2-117	Acceptable
ERA	2nd/2013	05/22/13	MRAD-18	Water	pCi/L	Tritium	13100	12300	8240-17500	Acceptable
EZA	2nd/2013	08/02/13	E10577	Cartridge	pCi	Iodine-131	9.16E+01	9.55E+01	1.02	Acceptable
EZA	2nd/2013	08/02/13	E10578	Milk	pCi/L	Strontium-89	9.27E+01	9.04E+01	0.98	Acceptable
EZA	2nd/2013	08/02/13	E10578	Milk	pCi/L	Strontium-90	1.20E+01	1.70E+01	0.7	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Iodine-131	9.86E+01	9.55E+01	1.03	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Cerium-141	9.44E+01	9.04E+01	1.04	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Chromium-51	2.58E+02	2.50E+02	1.03	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Cesium-134	1.21E+02	1.25E+02	0.97	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Cesium-137	1.49E+02	1.51E+02	0.99	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Cobalt-58	9.44E+01	9.40E+01	1.00	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Manganese-54	1.80E+02	1.72E+02	1.05	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Iron-59	1.36E+02	1.20E+02	1.14	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Zinc-65	2.39E+02	2.17E+02	1.10	Acceptable
EZA	2nd/2013	08/02/13	E10579	Milk	pCi/L	Cobalt-60	1.77E+02	1.75E+02	1.01	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Iodine-131	9.33E+01	9.54E+01	0.98	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Cerium-141	1.15E+02	1.10E+02	1.04	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Chromium-51	3.40E+02	3.06E+02	1.11	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Cesium-134	1.48E+02	1.53E+02	0.97	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Cesium-137	1.83E+02	1.84E+02	0.99	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Cobalt-58	1.13E+02	1.15E+02	0.99	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Manganese-54	2.09E+02	2.10E+02	1.00	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Iron-59	1.51E+02	1.46E+02	1.03	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Zinc-65	2.86E+02	2.65E+02	1.08	Acceptable
EZA	2nd/2013	08/02/13	E10178	Water	pCi/L	Cobalt-60	2.25E+02	2.14E+02	1.05	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Barium-133	76.4	740.5	62.4-82.0	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Cesium-134	68.7	72.4	59.1-79.6	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Cesium-137	154	155	140-172	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Cobalt-60	85.3	82.3	74.1-92.9	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Zinc-65	297	260	234-304	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Gross Alpha	74.3	57.1	29.8-71.2	Not



	2013									Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Gross Beta	34.3	41.8	27.9-49.2	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Gross Alpha	67.7	57.1	29.8-71.2	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Radium-226	16.9	17.2	12.8-19.7	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Radium-226	17	17.2	12.8-19.7	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Radium-228	3.53	3.86	2.18-5.4	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Uranium (Nat)	20.4	21.4	17.1-24.1	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	ug/L	Uranium (Nat) mass	30.4	31.2	25.0-35.2	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Radium-226	14.6	17.2	12.8-19.7	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Uranium (Nat)	21.6	21.4	17.1-24.1	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	ug/L	Uranium (Nat) mass	33.7	31.2	25-35.2	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Tritium	12500	13300	11600-14600	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Strontium-89	48.9	36.5	27.4-43.4	Not Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Strontium-90	14.3	19.8	14.1-23.4	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Strontium-89	44.3	36.5	27.4-43.4	Not Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Strontium-90	17.3	19.8	14.1-23.4	Acceptable
ERA	3rd / 2013	08/22/13	RAD - 94	Water	pCi/L	Iodine-131	26.1	24.3	20.2-28.8	Acceptable
ERA	3rd/2013	08/22/13	RAD - 94	Water	pCi/L	Iodine-131	23.3	24.3	20.2-28.8	Acceptable
EZA	3rd/2013	10/25/13	E10625	Cartridge	pCi	Iodine-131	8.57E+01	7.96E+01	1.08	Acceptable
EZA	3rd/2013	10/25/13	E10626	Milk	pCi/L	Strontium-89	9.33E+01	9.60E+01	0.97	Acceptable
EZA	3rd/2013	10/25/13	E10626	Milk	pCi/L	Strontium-90	1.09E+01	1.32E+01	0.83	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Iodine-131	1.00E+02	9.83E+01	1.02	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Chromium-51	3.09E+02	2.77E+02	1.11	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Cesium-134	1.46E+02	1.72E+02	0.85	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Cesium-137	1.33E+02	1.31E+02	1.02	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Cobalt-58	1.04E+02	1.08E+02	0.97	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Manganese-54	1.44E+02	1.39E+02	1.04	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Iron-59	1.43E+02	1.30E+02	1.1	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Zinc-65	2.86E+02	2.66E+02	1.07	Acceptable
EZA	3rd/2013	10/25/13	E10627	Milk	pCi/L	Cobalt-60	2.01E+02	1.96E+02	1.03	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Iodine-131	1.01E+02	9.79E+01	1.03	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Chromium-51	2.80E+02	2.51E+02	1.12	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Cesium-134	1.42E+02	1.56E+02	0.91	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Cesium-137	1.19E+02	1.18E+02	1.01	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Cobalt-58	9.80E+01	9.73E+01	1.01	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Manganese-54	1.29E+02	1.25E+02	1.05	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Iron-59	1.23E+02	1.18E+02	1.04	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Zinc-65	2.62E+02	2.41E+02	1.09	Acceptable
EZA	3rd/2013	10/25/13	E10628	Water	pCi/L	Cobalt-60	1.87E+02	1.77E+02	1.06	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-GrF29	Filter	Bq/sample	Gross Alpha	1.090	0.900	0.3-1.5	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-GrF29	Filter	Bq/sample	Gross Beta	1.730	1.630	0.82-2.45	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Americium-241	0.00	0	False Pos Test	Acceptable



MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cesium-134	1090	1172	820-1524	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cesium-137	1010	977	684-1270	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cobalt-57	0.0	0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cobalt-60	462.00	451.00	316-586	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Iron-55	887	820	574-1066	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Manganese-54	692	674	472-876	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Nickel-63	525.0	571	400-742	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Plutonium-238	60.8	62	43.1-80.0	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Plutonium-239/240	1.33	0.4	Sens. Eval.	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Potassium-40	638	633	443-823	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Strontium-90	458.0	460	322-598	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Technetium-99	0.0	0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Uranium-234/233	26.1	30	21.0-39.0	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Uranium-238	30.0	34	23.8-44.2	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Zinc-65	0.0	0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Americium-241	0.0001	0.000	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cesium-134	27.20	30.0	21.0-39.0	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cesium-137	31.8	31.6	22.1-41.1	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cobalt-57	0	0.0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cobalt-60	23.60	23.6	16.51-30.65	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Hydrogen-3	-3.5	0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Iron-55	53.00	53.3	37.3-69.3	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Manganese-54	-0.009	0.0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Nickel-63	27.7	26.4	18.5-34.3	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Plutonium-238	1.070	1.216	0.851-1.581	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Plutonium-239/240	0.907	0.996	0.697-1.295	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Potassium-40	0.339	0	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Strontium-90	6.65	7.22	5.05-9.39	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Technetium-99	15.4	16.20	11.3-21.1	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Uranium-234/233	0.065	0.07	Sens. Eval.	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Uranium-238	0.031	0.034	Sens. Eval.	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Zinc-65	36.500	34.60	24.2-45.0	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Gross Alpha	0.793	0.701	0.201-1.192	Acceptable



MAPEP	4th/2013	11/12/13	MAPEP-13-MaW29	Water	Bq/L	Gross Beta	6.220	5.94	2.97-8.91	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-235	0.034	0.032	0.0227-0.0421	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-238	15.8	16.5	11.6-21.5	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-Total	15.80	16.5	11.6-21.5	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Americium-241	0.0002	0.000	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cesium-134	-0.0016	0.00	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cesium-137	3.010	2.70	1.9-3.5	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cobalt-57	3.530	3.40	2.4-4.4	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cobalt-60	2.440	2.30	1.6-3.0	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Manganese-54	3.720	3.50	2.5-4.6	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Plutonium-238	0.128	0.124	0.087-0.161	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Plutonium-239/240	0.092	0.0920	0.064-0.12	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Strontium-90	1.690	1.81	1.27-2.35	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Uranium-234/233	0.027	0.0292	0.0204-0.038	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Uranium-238	0.020	0.021	0.144-0.267	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Zinc-65	3.050	2.70	1.9-3.5	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Americium-241	0.226	0.19	0.135-0.251	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Cesium-134	4.750	5.20	3.64-6.67	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Cesium-137	6.910	6.60	4.62-8.58	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Cobalt-57	-0.002	0.00	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Cobalt-60	0.008	0.00	False Pos Test	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Manganese-54	7.980	7.88	5.52-10.24	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Plutonium-238	0.001	0.001	Sens. Eval.	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Plutonium-239/240	0.1510	0.171	0.120-0.222	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Strontium-90	2.330	2.32	1.62-3.02	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Uranium-234/233	0.046	0.047	0.0326-0.0606	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Uranium-238	0.332	0.324	0.227-0.421	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-RdV29	Vegetation	Bq/sample	Zinc-65	2.850	2.63	1.84-3.42	Acceptable
MAPEP	4th/2013	11/12/13	MAPEP-13-XaW29	Water	Bq/L	Iodine-129	3.62	3.79	2.65-4.93	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Actinium-228	1200	1240	795-1720	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Americium-241	186	164	95.9-213	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Bismuth-212	1760	1220	325-1790	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Bismuth-214	4350	3740	2250-5380	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Cesium-134	2690	2820	1840-3390	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Cesium-137	3960	4130	3160-5310	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Cobalt-60	5490	5680	3840-7820	Acceptable



ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Lead-212	1260	1220	799-1700	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Lead-214	4700	3740	2180-5580	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Manganese-54	<55.2	<1000	0-1000	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Plutonium-238	576	658	396-908	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Plutonium-239	400	397	260-548	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Potassium-40	11200	12400	9080-16700	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Strontium-90	8220	6860	2620-10800	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Thorium-234	2870	3080	974-5790	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Zinc-65	3400	3160	2520-4200	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Uranium-234	2870	3080	974-5790	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Uranium-238	2979	3080	1910-3910	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	pCi/kg	Uranium-Total	6870	6320	3430-8340	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Soil	ug/kg	Uranium-Total(mass)	8460	9220	5080-11600	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Americium-241	3800	3630	2220-4830	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Cesium-134	907	859	552-1120	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Cesium-137	1220	1030	747-1430	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Cobalt-60	2100	1880	1300-2630	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Curium-244	1230	1250	612-1950	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Manganese-54	<53.3	<300	0-300	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Plutonium-238	1280	1290	769-1770	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Plutonium-239	2580	2770	1700-3810	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Potassium-40	33600	33900	24500-47600	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Strontium-90	5870	6360	3630-8430	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-234	674	654	430-840	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-234	1050	654	430-840	Not Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-238	655	648	432-823	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-Total	1364	1330	901-1660	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-Total	1773	1330	901-1660	Not Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	ug/kg	Uranium-Total(mass)	1960	1940	1300-2460	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Vegetation	pCi/kg	Zinc-65	1990	1540	1110-2160	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Americium-241	75.2	66.4	40.9-89.9	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Cesium-134	845	868.0	552-1080	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Cesium-137	641	602	452-791	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Cobalt-60	534	494	382-617	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Iron-55	466	389.0	121-760	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Manganese-54	<3.9	<50	0.00-50.0	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	ug/Filter	Plutonium-238	72.8	68.5	46.9-90.1	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Plutonium-239	56.5	53.4	42.4-93.1	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Strontium-90	130	125	61.1-187	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-234	56	87	35.6-86.6	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-238	58	56.90	36.8-78.7	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-Total	116	117	64.8-178	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	172	171	109-241	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Zinc-65	514	419	300-578	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	169	171	109-241	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	150	171	109-241	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Gross Alpha	100	83	27.8-129	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Filter	pCi/Filter	Gross Beta	65.7	56.3	35.6-82.2	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Americium-241	126	126	84.9-169	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Cesium-134	2060.0	2180	1600-2510	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Cesium-137	2730	2760	2340-3310	Acceptable



ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Cobalt-60	1960	1890	1640-2210	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Iron-55	721	689	411-935	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Manganese-54	<7.24	<100	0.00-100	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Plutonium-238	133	138	102-172	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Plutonium-239	98.7	109	84.6-137	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Strontium-90	726	788	513-1040	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-234	93	99	74.3-128	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-238	93	98.00	74.7-120	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	186	201	148-260	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	278	294	234-355	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Zinc-65	1560	1370	1140-1730	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Gross Alpha	105.0	97	34.3-150	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Gross Beta	78.8	84.5	48.4-125	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Tritium	8740	9150	6130-13000	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-234	92.4	98.9	74.3-128	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-238	96.1	98.0	74.7-120	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	193	201	148-260	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	288	294	234-355	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-234	95.2	98.9	74.3-128	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-238	115	98.00	74.7-120	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	215	201	148-260	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	344	294	234-355	Acceptable
ERA	4th/2013	11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	258	294	234-355	Acceptable



TABLE 2

2013 ECKERT & ZIEGLER ANALYTICS PERFORMANCE EVALUATION RESULTS

Report Date	Sample Number	Sample Media	Unit	Analyte / Nuclide	GEL Value	Known value	Acceptance Range/ Ratio	Evaluation
02/01/13	E10323	Cartridge	pCi	Iodine-131	7.31E+01	7.29E+01	1.00	Acceptable
02/01/13	E10324	Milk	pCi/L	Strontium-89	9.89E+00	1.38E+01	0.72	Acceptable
02/01/13	E10324	Milk	pCi/L	Strontium-90	9.83E+00	1.48E+01	1.02	Acceptable
02/01/13	E10325	Milk	pCi/L	Iodine-131	9.57E+01	9.00E+01	1.06	Acceptable
02/01/13	E10325	Milk	pCi/L	Chromium-51	3.67E+02	3.48E+02	1.06	Acceptable
02/01/13	E10325	Milk	pCi/L	Cesium-134	1.54E+02	1.65E+02	0.93	Acceptable
02/01/13	E10325	Milk	pCi/L	Cesium-137	1.18E+02	1.17E+02	1.01	Acceptable
02/01/13	E10325	Milk	pCi/L	Cobalt-58	9.85E+01	9.85E+01	1	Acceptable
02/01/13	E10325	Milk	pCi/L	Manganese-54	1.16E+02	1.16E+02	1	Acceptable
02/01/13	E10325	Milk	pCi/L	Iron-59	1.33E+02	1.16E+02	1.15	Acceptable
02/01/13	E10325	Milk	pCi/L	Zinc-65	3.19E+02	2.91E+02	1.09	Acceptable
02/01/13	E10325	Milk	pCi/L	Cobalt-60	1.73E+02	1.70E+02	1.02	Acceptable
02/01/13	E10325	Milk	pCi/L	Cesium-141	5.38E+01	5.10E+01	1.05	Acceptable
02/01/13	E10380	Water	pCi/L	Iodine-131	7.47E+01	7.25E+01	1.03	Acceptable
02/01/13	E10380	Water	pCi/L	Chromium-51	3.81E+02	3.62E+02	1.05	Acceptable
02/01/13	E10380	Water	pCi/L	Cesium-134	1.57E+02	1.73E+02	0.91	Acceptable
02/01/13	E10380	Water	pCi/L	Cesium-137	1.25E+02	1.22E+02	1.03	Acceptable
02/01/13	E10380	Water	pCi/L	Cobalt-58	1.02E+02	1.03E+02	0.99	Acceptable
02/01/13	E10380	Water	pCi/L	Manganese-54	1.28E+02	1.21E+02	1.06	Acceptable
02/01/13	E10380	Water	pCi/L	Iron-59	1.38E+02	1.21E+02	1.14	Acceptable
02/01/13	E10380	Water	pCi/L	Zinc-65	2.13E+02	1.94E+02	1.1	Acceptable
02/01/13	E10380	Water	pCi/L	Cobalt-60	1.80E+02	1.77E+02	1.01	Acceptable
04/25/13	E10469	Cartridge	pCi	Iodine-131	9.38E+01	9.27E+01	1.01	Acceptable
04/25/13	E10470	Milk	pCi/L	Strontium-89	1.07E+02	9.97E+01	1.07	Acceptable
04/25/13	E10470	Milk	pCi/L	Strontium-90	1.18E+01	1.10E+01	1.07	Acceptable
04/25/13	E10471	Milk	pCi/L	Iodine-131	1.12E+02	1.00E+02	1.12	Acceptable
04/25/13	E10471	Milk	pCi/L	Cerium-141	2.00E+01	1.87E+01	1.07	Acceptable
04/25/13	E10471	Milk	pCi/L	Cr-51	5.09E+01	4.72E+01	1.08	Acceptable
04/25/13	E10471	Milk	pCi/L	Cesium-134	2.06E+02	2.14E+02	0.96	Acceptable
04/25/13	E10471	Milk	pCi/L	Cesium-137	2.83E+02	2.66E+02	1.07	Acceptable
04/25/13	E10471	Milk	pCi/L	Cobalt-58	2.19E+02	2.08E+02	1.05	Acceptable
04/25/13	E10471	Milk	pCi/L	Mn-54	2.21E+02	2.08E+02	1.06	Acceptable
04/25/13	E10471	Milk	pCi/L	Iron-59	2.78E+02	2.52E+02	1.1	Acceptable
04/25/13	E10471	Milk	pCi/L	Zinc-65	3.39E+02	3.01E+02	1.13	Acceptable
04/25/13	E10471	Milk	pCi/L	Cobalt-60	4.02E+02	4.00E+02	1.01	Acceptable
04/25/13	E10472	Water	pCi/L	Iodine-131	1.12E+02	9.28E+01	1.21	Acceptable
04/25/13	E10472	Water	pCi/L	Cerium-141	1.88E+02	1.79E+02	1.05	Acceptable
04/25/13	E10472	Water	pCi/L	Cr-51	4.84E+02	4.52E+02	1.07	Acceptable



04/25/13	E10472	Water	pCi/L	Cesium-134	1.96E+02	2.05E+02	0.96	Acceptable
04/25/13	E10472	Water	pCi/L	Cesium-137	2.71E+02	2.54E+02	1.07	Acceptable
04/25/13	E10472	Water	pCi/L	Cobalt-58	2.03E+02	1.99E+02	1.02	Acceptable
04/25/13	E10472	Water	pCi/L	Mn-54	2.15E+02	1.99E+02	1.08	Acceptable
04/25/13	E10472	Water	pCi/L	Iron-59	2.67E+02	2.41E+02	1.11	Acceptable
04/25/13	E10472	Water	pCi/L	Zinc-65	3.14E+02	2.88E+02	1.09	Acceptable
04/25/13	E10472	Water	pCi/L	Cobalt-60	3.92E+02	3.83E+02	1.02	Acceptable
08/02/13	E10577	Cartridge	pCi	Iodine-131	9.16E+01	9.55E+01	1.02	Acceptable
08/02/13	E10578	Milk	pCi/L	Strontium-89	9.27E+01	9.04E+01	0.98	Acceptable
08/02/13	E10578	Milk	pCi/L	Strontium-90	1.20E+01	1.70E+01	0.7	Acceptable
08/02/13	E10579	Milk	pCi/L	Iodine-131	9.86E+01	9.55E+01	1.03	Acceptable
08/02/13	E10579	Milk	pCi/L	Cerium-141	9.44E+01	9.04E+01	1.04	Acceptable
08/02/13	E10579	Milk	pCi/L	Chromium-51	2.58E+02	2.50E+02	1.03	Acceptable
08/02/13	E10579	Milk	pCi/L	Cesium-134	1.21E+02	1.25E+02	0.97	Acceptable
08/02/13	E10579	Milk	pCi/L	Cesium-137	1.49E+02	1.51E+02	0.99	Acceptable
08/02/13	E10579	Milk	pCi/L	Cobalt-58	9.44E+01	9.40E+01	1.00	Acceptable
08/02/13	E10579	Milk	pCi/L	Manganese-54	1.80E+02	1.72E+02	1.05	Acceptable
08/02/13	E10579	Milk	pCi/L	Iron-59	1.36E+02	1.20E+02	1.14	Acceptable
08/02/13	E10579	Milk	pCi/L	Zinc-65	2.39E+02	2.17E+02	1.10	Acceptable
08/02/13	E10579	Milk	pCi/L	Cobalt-60	1.77E+01	1.75E+02	1.01	Acceptable
08/02/13	E10178	Water	pCi/L	Iodine-131	9.33E+01	9.54E+01	0.98	Acceptable
08/02/13	E10178	Water	pCi/L	Cerium-141	1.15E+02	1.10E+02	1.04	Acceptable
08/02/13	E10178	Water	pCi/L	Chromium-51	3.40E+02	3.06E+02	1.11	Acceptable
08/02/13	E10178	Water	pCi/L	Cesium-134	1.48E+02	1.53E+02	0.97	Acceptable
08/02/13	E10178	Water	pCi/L	Cesium-137	1.83E+02	1.84E+02	0.99	Acceptable
08/02/13	E10178	Water	pCi/L	Cobalt-58	1.13E+02	1.15E+02	0.99	Acceptable
08/02/13	E10178	Water	pCi/L	Manganese-54	2.09E+02	2.10E+02	1.00	Acceptable
08/02/13	E10178	Water	pCi/L	Iron-59	1.51E+02	1.46E+02	1.03	Acceptable
08/02/13	E10178	Water	pCi/L	Zinc-65	2.86E+02	2.65E+02	1.08	Acceptable
08/02/13	E10178	Water	pCi/L	Cobalt-60	2.25E+02	2.14E+02	1.05	Acceptable
10/25/13	E10625	Cartridge	pCi	Iodine-131	8.57E+01	7.96E+01	1.08	Acceptable
10/25/13	E10626	Milk	pCi/L	Strontium-89	9.33E+01	9.60E+01	0.97	Acceptable
10/25/13	E10626	Milk	pCi/L	Strontium-90	1.09E+01	1.32E+01	0.83	Acceptable
10/25/13	E10627	Milk	pCi/L	Iodine-131	1.00E+02	9.83E+01	1.02	Acceptable
10/25/13	E10627	Milk	pCi/L	Chromium-51	3.09E+02	2.77E+02	1.11	Acceptable
10/25/13	E10627	Milk	pCi/L	Cesium-134	1.46E+02	1.72E+02	0.85	Acceptable
10/25/13	E10627	Milk	pCi/L	Cesium-137	1.33E+02	1.31E+02	1.02	Acceptable
10/25/13	E10627	Milk	pCi/L	Cobalt-58	1.04E+02	1.08E+02	0.97	Acceptable
10/25/13	E10627	Milk	pCi/L	Manganese-54	1.44E+02	1.39E+02	1.04	Acceptable
10/25/13	E10627	Milk	pCi/L	Iron-59	1.43E+02	1.30E+02	1.1	Acceptable
10/25/13	E10627	Milk	pCi/L	Zinc-65	2.86E+02	2.66E+02	1.07	Acceptable
10/25/13	E10627	Milk	pCi/L	Cobalt-60	2.01E+02	1.96E+02	1.03	Acceptable
10/25/13	E10628	Water	pCi/L	Iodine-131	1.01E+02	9.79E+01	1.03	Acceptable
10/25/13	E10628	Water	pCi/L	Chromium-51	2.80E+02	2.51E+02	1.12	Acceptable



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10/25/13	E10628	Water	pCi/L	Cesium-134	1.42E+02	1.56E+02	0.91	Acceptable
10/25/13	E10628	Water	pCi/L	Cesium-137	1.19E+02	1.18E+02	1.01	Acceptable
10/25/13	E10628	Water	pCi/L	Cobalt-58	9.80E+01	9.73E+01	1.01	Acceptable
10/25/13	E10628	Water	pCi/L	Manganese-54	1.29E+02	1.25E+02	1.05	Acceptable
10/25/13	E10628	Water	pCi/L	Iron-59	1.23E+02	1.18E+02	1.04	Acceptable
10/25/13	E10628	Water	pCi/L	Zinc-65	2.62E+02	2.41E+02	1.09	Acceptable
10/25/13	E10628	Water	pCi/L	Cobalt-60	1.87E+02	1.77E+02	1.06	Acceptable



TABLE 3

2013 DEPARTMENT OF ENERGY MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP) RESULTS

Report Date	Sample Number	Sample Media	Unit	Analyte / Nuclide	GEL Value	Known value	Acceptance Range/ Ratio	Evaluation
02/27/13	GENE01-27-RdFR1	Filter	Bq/sample	U-234/233	0.0143	0.0155	0.0109-0.0202	Acceptable
02/27/13	GENE01-27-RdFR1	Filter	Bq/sample	Uranium-238	0.0999	0.098	0.069-0.127	Acceptable
05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Alpha	0.656	1.20	0.36-2.04	Acceptable
05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Beta	0.954	0.85	0.43-1.28	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Americium-241	118	113	79-147	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cesium-134	829	887	621-1153	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cesium-137	623	587	411-763	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cobalt-57	1.04	0	False Pos Test	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Cobalt-60	737	691	484-898	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Iron-55	-0.380	0	False Pos Test	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Manganese-54	0.760	0	False Pos Test	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Nickel-63	719	670	469-871	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Plutonium-238	0.571	0.52	Sens. Eval.	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Plutonium-239/240	77.70	79.5	55.7-103.4	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Potassium-40	713	625	438-813	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Strontium-90	693.0	628	440-816	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Technetium-99	419.0	444	311-577	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	U-234/233	60.0	62.5	43.8-81.3	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Uranium-238	274	281	197-365	Acceptable
05/13/13	MAPEP-13-MaS28	Soil	mg/kg	Zinc-65	1130	995	697-1294	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Am-241	0.690	0.689	0.428-0.896	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cesium-134	21.1	24.4	17.1-31.7	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cesium-137	0.10	0.0	False Pos Test	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cobalt-57	31.0	30.9	21.6-40.2	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Cobalt-60	19.4	19.6	13.7-25.4	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Hydrogen-3	517	507	355-659	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Iron-55	39.7	44.0	30.8-57.2	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Manganese-54	28.0	27.4	19.2-35.6	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Nickel-63	32.9	33.4	23.4-43.4	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Plutonium-238	0.825	0.884	0.619-1.149	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Pu-239/240	0.0162	0.0096	Sens. Eval.	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Potassium-40	-0.471	0	False Pos Test	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Strontium-90	12.5	10.5	7.4-13.7	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Technetium-99	12.9	13.1	9.2-17.0	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	U-234/233	0.289	0.315	0.221-0.410	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Uranium-238	1.81	1.95	1.37-2.54	Acceptable
05/13/13	MAPEP-13-MaW28	Water	Bq/L	Zinc-65	32.8	30.4	21.3-39.5	Acceptable



05/13/13	MAPEP-13-GrW28	Water	Bq/L	Gross Alpha	2.60	2.31	0.69-3.93	Acceptable
05/13/13	MAPEP-13-GrW28	Water	Bq/L	Gross Beta	14.2	13.0	6.5-19.5	Acceptable
05/13/13	MAPEP-13-XaW28	Water	Bq/L	Iodine-129	5.94	6.06	4.24-7.88	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-235	0.036	0.036	0.025-0.047	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-238	18.0	18.6	13.0-24.2	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Uranium-Total	17.7	18.6	13.0-24.2	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	ug/sample	Americium-241	0.106	0.104	0.073-0.135	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cesium-134	1.75	1.78	1.25-2.31	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cesium-137	2.71	2.60	1.82-3.38	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cobalt-57	2.51	2.36	1.65-3.07	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Cobalt-60	0.005	0.00	False Pos Test	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Manganese-54	4.43	4.26	2.98-5.54	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Plutonium-238	0.124	0.127	0.089-0.165	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Pu-239/240	0.118	0.1210	0.085-0.157	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Strontium-90	1.54	1.49	1.04-1.94	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	U-234/233	0.0342	0.0318	0.0223-0.0413	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Uranium-238	0.230	0.231	0.162-0.300	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Zinc-65	3.38	3.13	2.19-4.07	Acceptable
05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Alpha	0.656	1.20	0.36-2.04	Acceptable
05/13/13	MAPEP-13-GrF28	Filter	Bq/sample	Gross Beta	0.95	0.85	0.43-1.28	Acceptable
05/13/13	MAPEP-13-RdF28	Filter	Bq/sample	Americium-241	0.106	0.104	0.073-0.135	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-235	0.0029	0.001	0.0009-0.0017	Not Accept.
05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-238	0.419	0.180	0.13-0.23	Not Accept.
05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Uranium-Total	0.4219	0.180	0.13-0.23	Not Accept.
05/13/13	MAPEP-13-RdV28	Vegetation	ug/sample	Americium-241	0.1350	0.140	0.098-0.182	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cesium-134	0.0525	0.00	False Pos Test	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cesium-137	7.13	6.87	4.81-8.93	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cobalt-57	8.86	8.68	6.08-11.28	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Cobalt-60	6.07	5.85	4.10-7.61	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Manganese-54	-0.002	0.00	False Pos Test	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Plutonium-238	0.110	0.110	0.077-0.143	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Pu-239/240	0.113	0.123	0.086-0.160	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Strontium-90	1.358	1.64	1.15-2.13	Acceptable
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	U-234/233	0.0081	0.0038	Sens. Eval.	Not Accept.
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Uranium-238	0.00489	0.002	Sens. Eval.	Not Accept.
05/13/13	MAPEP-13-RdV28	Vegetation	Bq/sample	Zinc-65	6.59	6.25	4.38-8.13	Acceptable
11/12/13	MAPEP-13-GrF29	Filter	Bq/sample	Gross Alpha	1.090	0.900	0.3-1.5	Acceptable
11/12/13	MAPEP-13-GrF29	Filter	Bq/sample	Gross Beta	1.730	1.630	0.82-2.45	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Americium-241	0.00	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cesium-134	1090	1172	820-1524	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cesium-137	1010	977	684-1270	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cobalt-57	0.0	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Cobalt-60	462.00	451.00	316-586	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Iron-55	887	820	574-1066	Acceptable



11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Manganese-54	692	674	472-876	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Nickel-63	525.0	571	400-742	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Plutonium-238	60.8	62	43.1-80.0	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Plutonium-239/240	1.33	0.4	Sens. Eval.	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Potassium-40	638	633	443-823	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Strontium-90	458.0	460	322-598	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Technetium-99	0.0	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	U-234/233	26.1	30	21.0-39.0	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Uranium-238	30.0	34	23.8-44.2	Acceptable
11/12/13	MAPEP-13-MaS29	Soil	mg/kg	Zinc-65	0.0	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Americium-241	0.0001	0.000	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cesium-134	27.20	30.0	21.0-39.0	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cesium-137	31.8	31.6	22.1-41.1	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cobalt-57	0	0.0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Cobalt-60	23.60	23.6	16.51-30.65	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Hydrogen-3	-3.5	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Iron-55	53.00	53.3	37.3-69.3	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Manganese-54	-0.009	0.0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Nickel-63	27.7	26.4	18.5-34.3	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Plutonium-238	1.070	1.216	0.851-1.581	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Plutonium-239/240	0.907	0.996	0.697-1.295	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Potassium-40	0.339	0	False Pos Test	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Strontium-90	6.65	7.22	5.05-9.39	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Technetium-99	15.4	16.20	11.3-21.1	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Uranium-234/233	0.065	0.07	Sens. Eval.	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Uranium-238	0.031	0.034	Sens. Eval.	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Zinc-65	36.500	34.60	24.2-45.0	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Gross Alpha	0.793	0.701	0.201-1.192	Acceptable
11/12/13	MAPEP-13-MaW29	Water	Bq/L	Gross Beta	6.220	5.94	2.97-8.91	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-235	0.034	0.032	0.0227-0.0421	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-238	15.8	16.5	11.6-21.5	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Uranium-Total	15.80	16.5	11.6-21.5	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	ug/sample	Americium-241	0.0002	0.000	False Pos Test	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cesium-134	-0.0016	0.00	False Pos Test	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cesium-137	3.010	2.70	1.9-3.5	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cobalt-57	3.530	3.40	2.4-4.4	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Cobalt-60	2.440	2.30	1.6-3.0	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Manganese-54	3.720	3.50	2.5-4.6	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Plutonium-238	0.128	0.124	0.087-0.161	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Plutonium-239/240	0.092	0.0920	0.064-0.12	Acceptable
11/12/13	MAPEP-13-RdF29	Filter	Bq/sample	Strontium-90	1.690	1.81	1.27-2.35	Acceptable



TABLE 4
2013 ERA PROGRAM PERFORMANCE EVALUATION RESULTS

Report Date	Sample Number	Sample Media	Unit	Analyte / Nuclide	GEL Value	Known value	Acceptance Range/ Ratio	Evaluation
02/28/13	RAD - 92	Water	pCi/L	Barium-133	55.4	54.4	44.9-60.2	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Cesium-134	27.2	29.9	23.4-32.9	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Cesium-137	74.3	75.3	67.8-85.5	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Cobalt-60	89.0	97.7	87.9-110	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Zinc-65	126	114	103-136	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Gross Alpha	26.0	24.8	12.5-33.0	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Gross Beta	19.4	19.3	11.3-27.5	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Gross Alpha	31.4	24.8	12.5-33.0	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Radium-226	10.4	9.91	7.42-11.6	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Radium-228	4.84	5.22	3.14-6.96	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Uranium (Nat)	6.43	5.96	4.47-7.13	Acceptable
02/28/13	RAD - 92	Water	ug/L	Uranium (Nat) mass	9.59	8.69	6.50-10.4	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Radium-226	11.60	9.91	7.42-11.6	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Radium-228	5.13	5.22	3.14-6.96	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Uranium (Nat)	5.95	5.96	4.47-7.13	Acceptable
02/28/13	RAD - 92	Water	ug/L	Uranium (Nat) mass	9.95	8.69	6.50-10.4	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Tritium	1430	1320	1040-1480	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Strontium-89	47.5	48	37.6-55.3	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Strontium-90	35.9	39.8	29.2-45.8	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Strontium-89	42.9	48	37.6-55.3	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Strontium-90	34.6	39.8	29.2-45.8	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Iodine-131	23.6	22.7	18.8-27.0	Acceptable
02/28/13	RAD - 92	Water	pCi/L	Iodine-131	27	22.7	18.8-27.0	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Barium-133	76.4	740.5	62.4-82.0	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Cesium-134	68.7	72.4	59.1-79.6	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Cesium-137	154	155	140-172	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Cobalt-60	85.3	82.3	74.1-92.9	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Zinc-65	297	260	234-304	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Gross Alpha	74.3	57.1	29.8-71.2	Not Acceptable
08/22/13	RAD - 94	Water	pCi/L	Gross Beta	34.3	41.8	27.9-49.2	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Gross Alpha	67.7	57.1	29.8-71.2	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Radium-226	16.9	17.2	12.8-19.7	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Radium-226	17	17.2	12.8-19.7	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Radium-228	3.53	3.86	2.18-5.4	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Uranium (Nat)	20.4	21.4	17.1-24.1	Acceptable
08/22/13	RAD - 94	Water	ug/L	Uranium (Nat) mass	30.4	31.2	25.0-35.2	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Radium-226	14.6	17.2	12.8-19.7	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Uranium (Nat)	21.6	21.4	17.1-24.1	Acceptable
08/22/13	RAD - 94	Water	ug/L	Uranium (Nat) mass	33.7	31.2	25-35.2	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Tritium	12500	13300	11600-14600	Acceptable



08/22/13	RAD - 94	Water	pCi/L	Strontium-89	48.9	36.5	27.4-43.4	Not Acceptable
08/22/13	RAD - 94	Water	pCi/L	Strontium-90	14.3	19.8	14.1-23.4	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Strontium-89	44.3	36.5	27.4-43.4	Not Acceptable
08/22/13	RAD - 94	Water	pCi/L	Strontium-90	17.3	19.8	14.1-23.4	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Iodine-131	26.1	24.3	20.2-28.8	Acceptable
08/22/13	RAD - 94	Water	pCi/L	Iodine-131	23.3	24.3	20.2-28.8	Acceptable



TABLE 5
2013 ERA PROGRAM (MRAD) PERFORMANCE EVALUATION RESULTS

Report Date	Sample Number	Sample Media	Unit	Analyte / Nuclide	GEL Value	Known value	Acceptance Range/ Ratio	Evaluation
05/22/13	MRAD-18	Soil	pCi/kg	Actinium-228	1500	1240	795-1720	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Americium-241	225	229	134-297	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Bismuth-212	1250	1240	330-1820	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Bismuth-214	4410	3660	2200-5270	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Cesium-134	7850	6370	4160-7650	Not Accept.
05/22/13	MRAD-18	Soil	pCi/kg	Cesium-137	8070	6120	4690-7870	Not Accept.
05/22/13	MRAD-18	Soil	pCi/kg	Cobalt-60	10300	7920	5360-10900	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Lead-212	1290	1240	812-1730	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Lead-214	4690	3660	2140-5460	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Manganese-54	<63.4	<1000	0-1000	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Plutonium-238	651	788.00	474-1090	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Plutonium-239	320	366.00	239-506	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Potassium-40	10300	10300	7520-13800	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Strontium-90	6730	8530	3250-13500	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Thorium-234	3290	1900	601-3570	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Zinc-65	1910	1400	1110-1860	Not Accept.
05/22/13	MRAD-18	Soil	pCi/kg	Strontium-90	6730	8530	3250-13500	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Uranium-234	1210	1920	1170-2460	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Uranium-238	1630	1900	1180-2410	Acceptable
05/22/13	MRAD-18	Soil	pCi/kg	Uranium-Total	2840	3920	2130-5170	Acceptable
05/22/13	MRAD-18	Soil	ug/kg	Uranium-Total(mass)	4150	5710	3150-7180	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Am-241	629	553	338-735	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Cesium-134	1400	1240	797-1610	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Cesium-137	687	544	394-757	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Cobalt-60	2410	1920	1320-2680	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Curium-244	1420	1340	657-2090	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Manganese-54	<47.4	<300	0.00-300	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Plutonium-238	2060	1980	1180-2710	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Plutonium-239	2230	2260	1390-3110	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Potassium-40	35600	31900	23000-44800	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Strontium-90	3720	3840	2190-5090	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-234	2650	2460	1620-3160	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-238	2580	2440	1630-3100	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Uranium-Total	5361	5010	3390-6230	Acceptable
05/22/13	MRAD-18	Vegetation	ug/kg	Uranium-Total(mass)	7740	7310	4900-9280	Acceptable
05/22/13	MRAD-18	Vegetation	pCi/kg	Zinc-65	1150	878	633-1230	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Americium-241	62.9	66.8	41.2-90.4	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Cesium-134	1080	1110	706-1380	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Cesium-137	971	940	706-1230	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Cobalt-60	217	214	166-267	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Iron-55	224	225	69.8-440	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Manganese-54	<5.27	<50.0	0-50.0	Acceptable



05/22/13	MRAD-18	Filter	pCi/Filter	Plutonium-238	48.0	50.1	34.3-65.9	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Plutonium-239	62.7	65.2	47.2-85.2	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Strontium-90	139	138	67.4-207	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-234	54.5	59.4	36.8-89.6	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-238	58.5	58.9	38.1-81.4	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Uranium-Total	117	121	67.0-184	Acceptable
05/22/13	MRAD-18	Filter	ug/Filter	Uranium-Total(mass)	176	176	113-248	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Zinc-65	222	199	142-275	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Gross Alpha	55.5	42.3	14.2-65.7	Acceptable
05/22/13	MRAD-18	Filter	pCi/Filter	Gross Beta	31	25.1	15.9-36.6	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Americium-241	118	118	79.5-158	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Cesium-134	1320	1400	1030-1610	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Cesium-137	1900	1880	1600-2250	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Cobalt-60	2370	2270	1970-2660	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Iron-55	812	712	424-966	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Manganese-54	<7.6	<100	0.00-100	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Plutonium-238	91	99	73.1-123	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Plutonium-239	161	185	144-233	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Strontium-90	144	137	89.2-181	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Uranium-234	47.3	48.8	36.7-62.9	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Uranium-238	50.8	48.4	36.9-59.4	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Uranium-Total	98.1	99.5	73.1-129	Acceptable
05/22/13	MRAD-18	Water	ug/L	Uranium-Total(mass)	152	145	116-175	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Zinc-65	428	384	320-484	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Gross Alpha	138.0	130	46.2-201	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Gross Beta	87	78.9	45.2-117	Acceptable
05/22/13	MRAD-18	Water	pCi/L	Tritium	13100	12300	8240-17500	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Actinium-228	1200	1240	795-1720	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Americium-241	186	164	95.9-213	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Bismuth-212	1760	1220	325-1790	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Bismuth-214	4350	3740	2250-5380	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Cesium-134	2690	2820	1840-3390	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Cesium-137	3960	4130	3160-5310	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Cobalt-60	5490	5680	3840-7820	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Lead-212	1260	1220	799-1700	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Lead-214	4700	3740	2180-5580	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Manganese-54	<55.2	<1000	0-1000	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Plutonium-238	576	658	396-908	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Plutonium-239	400	397	260-548	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Potassium-40	11200	12400	9080-16700	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Strontium-90	8220	6860	2620-10800	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Thorium-234	2870	3080	974-5790	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Zinc-65	3400	3160	2520-4200	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Uranium-234	2870	3080	974-5790	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Uranium-238	2979	3080	1910-3910	Acceptable
11/26/13	MRAD-19	Soil	pCi/kg	Uranium-Total	6870	6320	3430-8340	Acceptable
11/26/13	MRAD-19	Soil	ug/kg	Uranium-Total(mass)	8460	9220	5080-11600	Acceptable



11/26/13	MRAD-19	Vegetation	pCi/kg	Am-241	3800	3630	2220-4830	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Cesium-134	907	859	552-1120	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Cesium-137	1220	1030	747-1430	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Cobalt-60	2100	1880	1300-2630	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Curium-244	1230	1250	612-1950	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Manganese-54	<53.3	<300	0-300	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Plutonium-238	1280	1290	769-1770	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Plutonium-239	2580	2770	1700-3810	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Potassium-40	33600	33900	24500-47600	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Strontium-90	5870	6360	3630-8430	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-234	674	654	430-840	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-234	1050	654	430-840	Not Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-238	655	648	432-823	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-Total	1364	1330	901-1660	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Uranium-Total	1773	1330	901-1660	Not Acceptable
11/26/13	MRAD-19	Vegetation	ug/kg	Uranium-Total(mass)	1960	1940	1300-2460	Acceptable
11/26/13	MRAD-19	Vegetation	pCi/kg	Zinc-65	1990	1540	1110-2160	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Americium-241	75.2	66.4	40.9-89.9	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Cesium-134	845	868.0	552-1080	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Cesium-137	641	602	452-791	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Cobalt-60	534	494	382-617	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Iron-55	466	389.0	121-760	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Manganese-54	<3.9	<50	0.00-50.0	Acceptable
11/26/13	MRAD-19	Filter	ug/Filter	Plutonium-238	72.8	68.5	46.9-90.1	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Plutonium-239	56.5	53.4	42.4-93.1	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Strontium-90	130	125	61.1-187	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-234	56	87	35.6-86.6	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-238	58	56.90	36.8-78.7	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Uranium-Total	116	117	64.8-178	Acceptable
11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	172	171	109-241	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Zinc-65	514	419	300-578	Acceptable
11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	169	171	109-241	Acceptable
11/26/13	MRAD-19	Filter	ug/Filter	Uranium-Total(mass)	150	171	109-241	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Gross Alpha	100	83	27.8-129	Acceptable
11/26/13	MRAD-19	Filter	pCi/Filter	Gross Beta	65.7	56.3	35.6-82.2	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Americium-241	126	126	84.9-169	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Cesium-134	2060	2180	1600-2510	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Cesium-137	2730	2760	2340-3310	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Cobalt-60	1960	1890	1640-2210	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Iron-55	721	689	411-935	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Manganese-54	<7.24	<100	0.00-100	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Plutonium-238	133	138	102-172	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Plutonium-239	98.7	109	84.6-137	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Strontium-90	726	788	513-1040	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-234	93	99	74.3-128	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-238	93	98.00	74.7-120	Acceptable



11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	186	201	148-260	Acceptable
11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	278	294	234-355	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Zinc-65	1560	1370	1140-1730	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Gross Alpha	105.0	97	34.3-150	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Gross Beta	78.8	84.5	48.4-125	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Tritium	8740	9150	6130-13000	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-234	92.4	98.9	74.3-128	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-238	96.1	98.0	74.7-120	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	193	201	148-260	Acceptable
11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	288	294	234-355	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-234	95.2	98.9	74.3-128	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-238	115	98.00	74.7-120	Acceptable
11/26/13	MRAD-19	Water	pCi/L	Uranium-Total	215	201	148-260	Acceptable
11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	344	294	234-355	Acceptable
11/26/13	MRAD-19	Water	ug/L	Uranium-Total(mass)	258	294	234-355	Acceptable

FIGURE 1

COBALT-60 PERFORMANCE EVALUATION RESULTS AND % BIAS

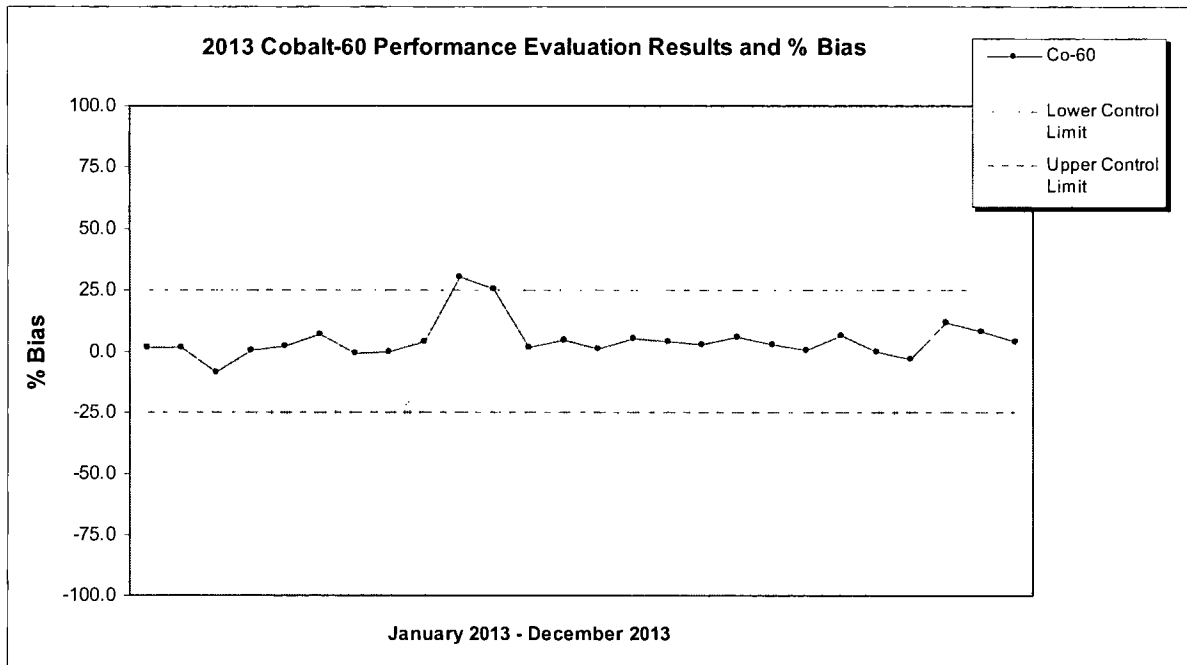




FIGURE 2

CESIUM-137 PERFORMANCE EVALUATION RESULTS AND % BIAS

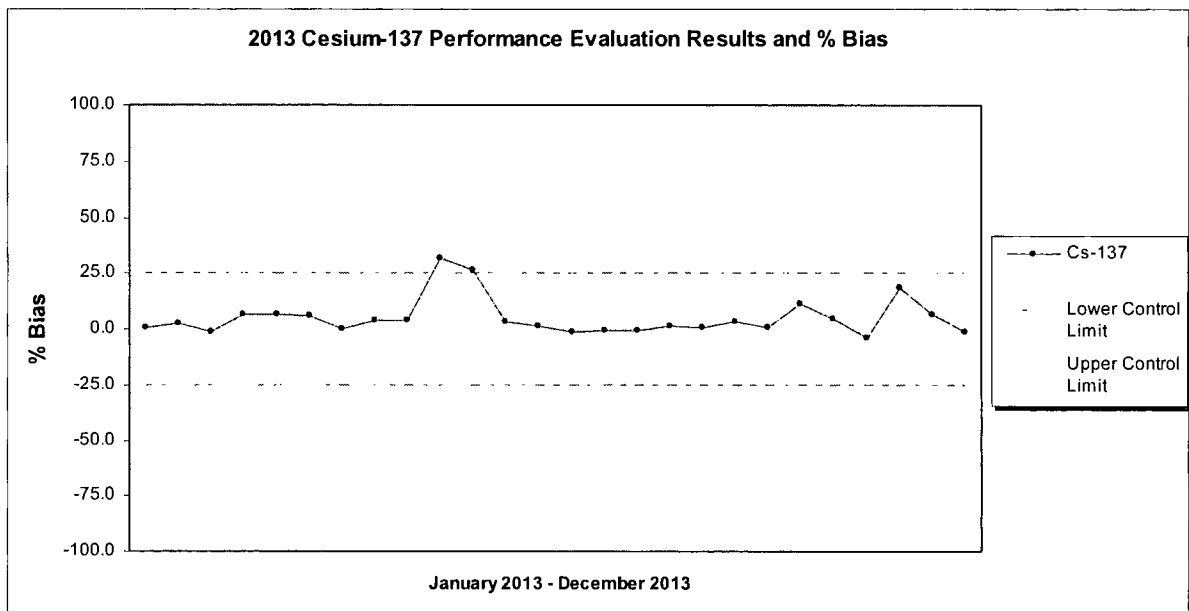




FIGURE 3

TRITIUM PERFORMANCE EVALUATION RESULTS AND % BIAS

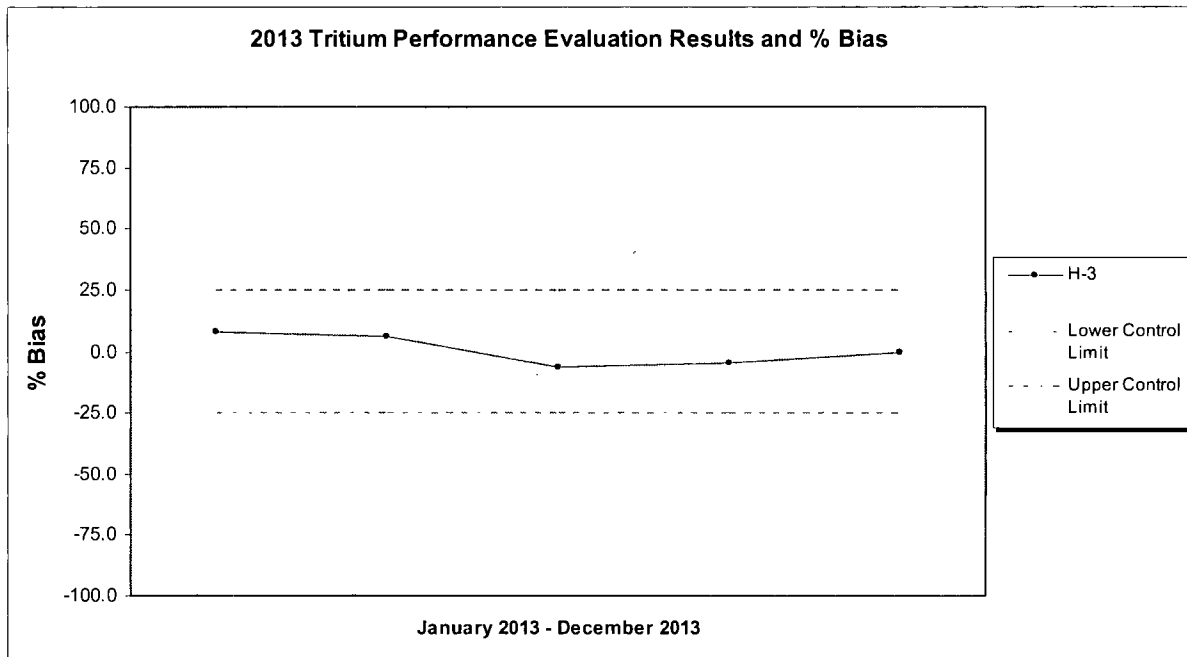


FIGURE 4

STRONTIUM-90 PERFORMANCE EVALUATION RESULTS AND % BIAS

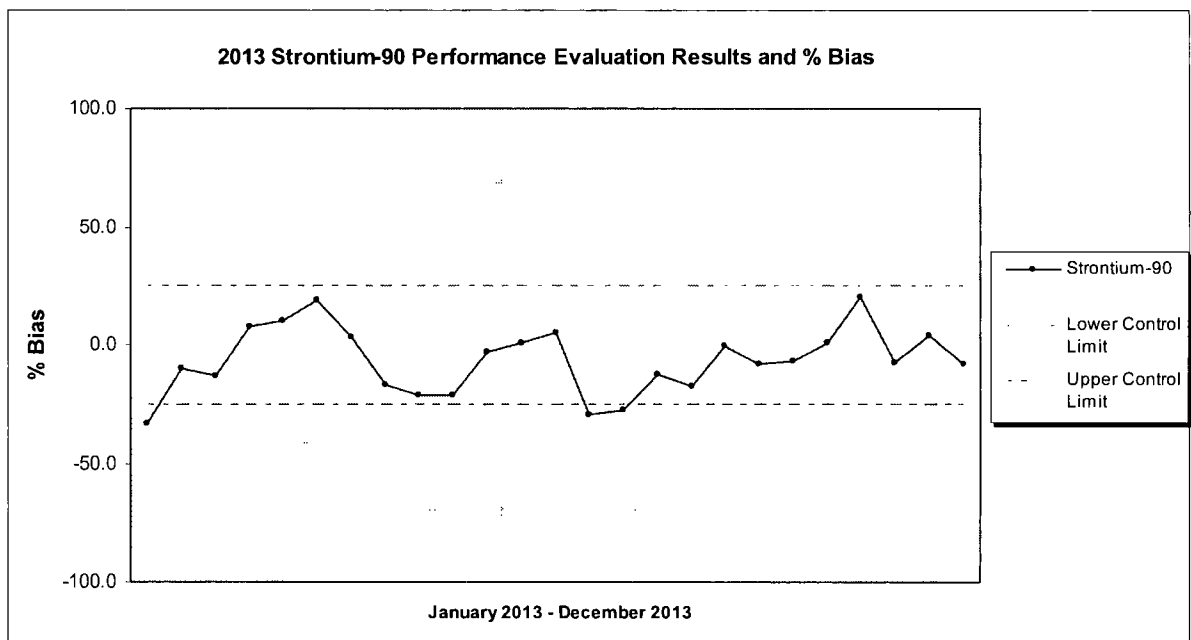


FIGURE 5

GROSS ALPHA PERFORMANCE EVALUATION RESULTS AND % BIAS

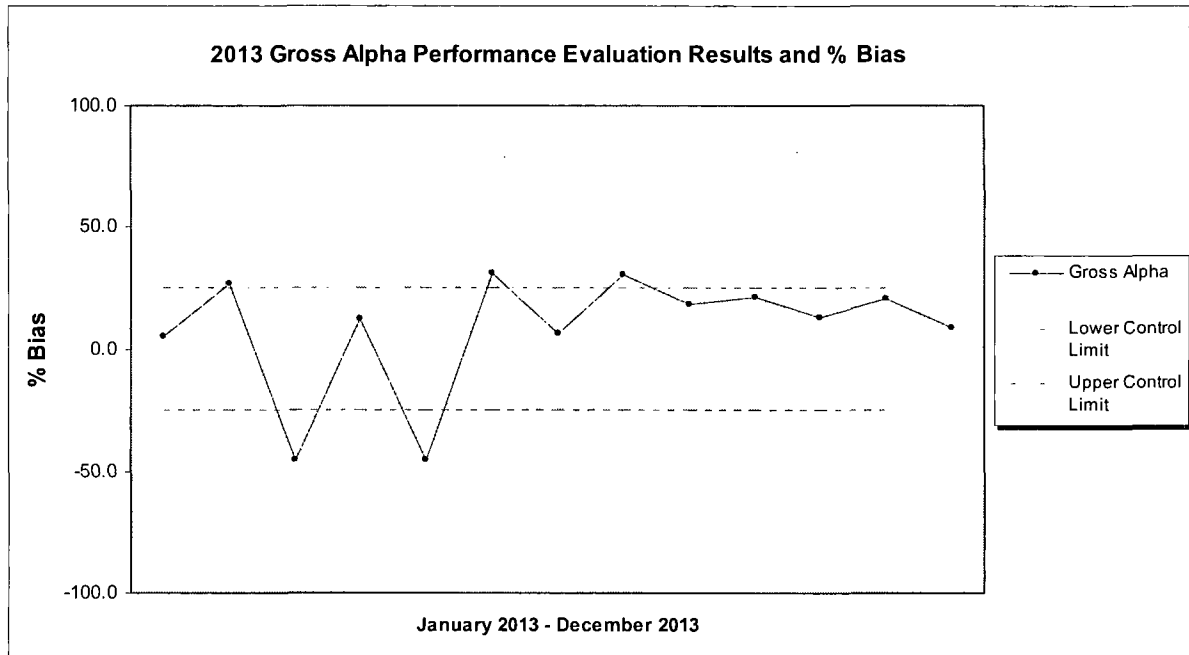




FIGURE 6

GROSS BETA PERFORMANCE EVALUATION RESULTS AND % BIAS

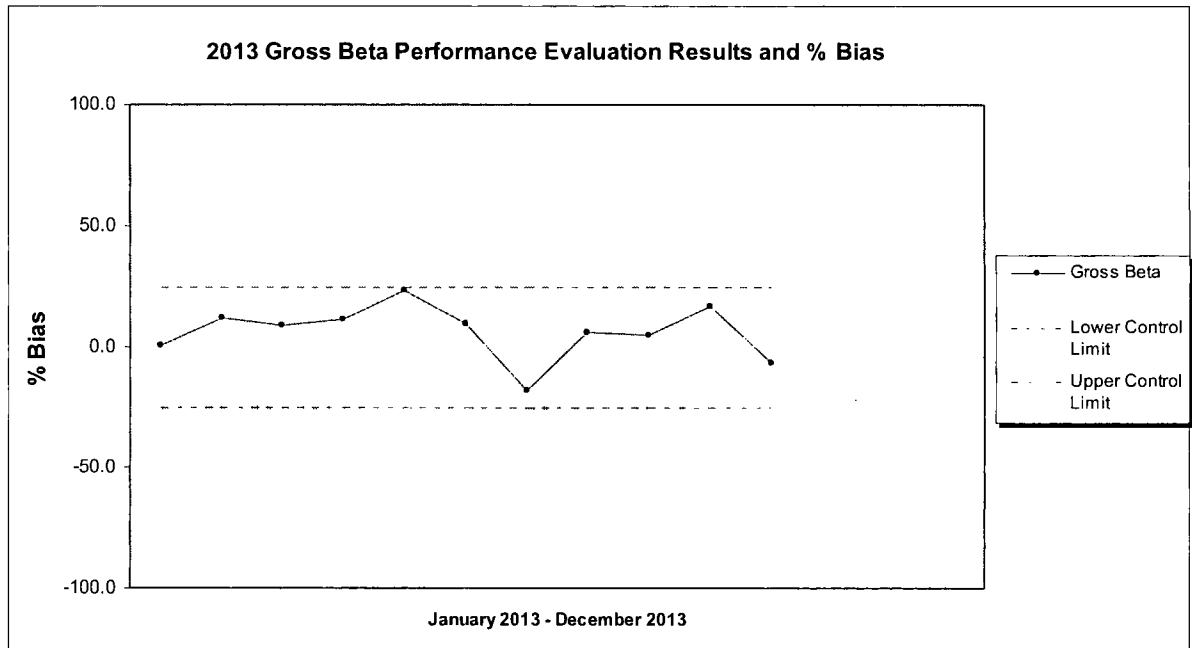


FIGURE 7

IODINE-131 PERFORMANCE EVALUATION RESULTS AND % BIAS

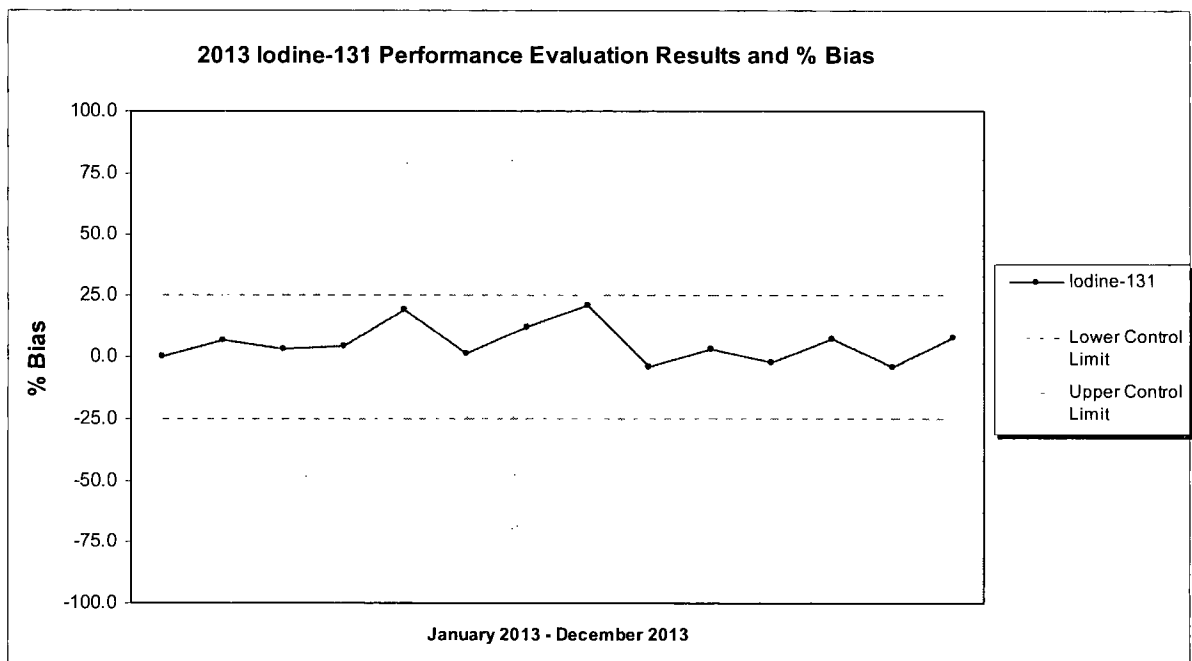




FIGURE 8

AMERICIUM-241 PERFORMANCE EVALUATION RESULTS AND % BIAS

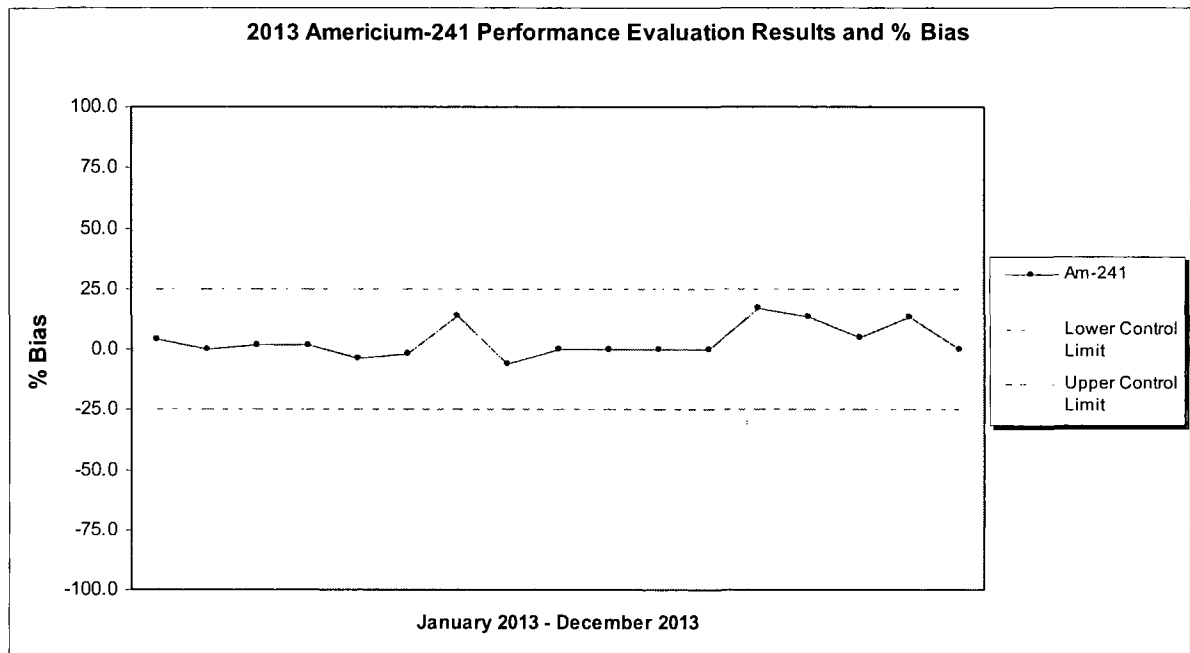




FIGURE 9

PLUTONIUM-238 PERFORMANCE EVALUATION RESULTS AND % BIAS

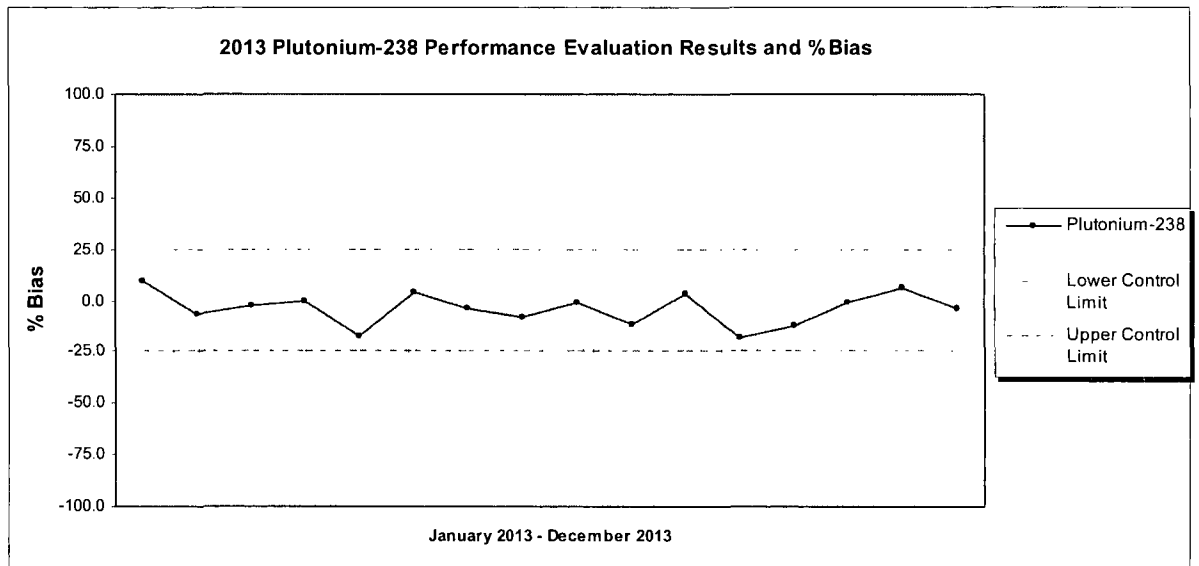




TABLE 6

REMP INTRA-LABORATORY DATA SUMMARY: BIAS AND PRECISION BY MATRIX

REMP 2013	Bias Criteria (+ / - 25%)		Precision Criteria (Note 1)	
	WITHIN CRITERIA	OUTSIDE CRITERIA	WITHIN CRITERIA	OUTSIDE CRITERIA
MILK				
Gamma Iodine-131	41	0	131	0
Gas Flow Sr 2nd count	46	0	49	0
Gas Flow Total Strontium	35	0	35	0
Gamma Spec Liquid RAD A-013 with Ba, La	61	0	120	0
SOLID				
LSC Iron-55	5	0	5	0
Gamma Spec Solid RAD A-013	28	0	31	0
LSC Nickel 63	5	0	5	0
Gas Flow Sr 2nd count	4	0	4	0
Gas Flow Total Strontium	8	0	8	0
Gamma Spec Solid RAD A-013 with Ba, La	7	0	10	0
Gamma Spec Solid RAD A-013 with Iodine	6	0	7	0
FILTER				
Gamma Spec Filter RAD A-013	4	0	4	0
Gas Flow Sr 2nd Count	5	0	5	0
Alpha Spec Am241Curium	3	0	3	0
Gas Flow Total Strontium	3	0	3	0
Gross A & B	526	0	527	0
Gamma Spec Filter	45	0	51	0
LIQUID				
Alpha Spec Uranium	8	0	9	0
Tritium	336	0	337	0
Plutonium	1	0	1	0
LSC Iron-55	40	0	42	0
LSC Nickel 63	41	0	43	0
Gamma Spec Liquid RAD A-013	7	0	7	0
Gamma Iodine-131	33	0	33	0
Alpha Spec Plutonium	10	0	10	0
Gas Flow Sr 2nd count	20	0	20	0
Alpha Spec Am241 Curium	17	0	17	0
Gas Flow Total Strontium	161	0	163	0
Gross Alpha Non Vol Beta	102	0	104	0
Gamma Spec Liquid RAD A-013 with Ba, La	129	0	209	0
Gamma Spec Liquid RAD A-013 with Iodine	56	0	85	0
TISSUE				



Gamma Spec Solid RAD A-013	45	0	48	0
LSC Nickel 63	2	0	2	0
Gas Flow Sr 2nd count	10	0	10	0
Gas Flow Total Strontium	17	0	17	0
Gamma Spec Solid RAD A-013 with Ba, La	6	0	5	0
Gamma Spec Solid RAD A-013 with Iodine	17	0	17	0
SEA WATER				
LSC Iron-55	2	0	2	0
LSC Nickel 63	2	0	2	0
Gas Flow Total Strontium	1	0	1	0
Gross Alpha Non Vol Beta	1	0	1	0
Gamma Spec Liquid RAD A-013 with Iodine	1	0	1	0
VEGETATION				
Gas Flow Sr 2nd count	9	0	9	0
Gamma Spec Solid RAD A-013 with Iodine	91	0	93	0
AIR CHARCOAL				
Gamma Iodine 131 RAD A-013	623	0	645	0
Carbon-14 (Ascarite/Soda Lime Filter per Liter)	46	0	47	0
DRINKING WATER				
Tritium	51	0	52	0
LSC Iron-55	24	0	22	0
LSC Nickel 63	23	0	21	0
Gamma Iodine-131	38	0	38	0
Gas Flow Sr 2nd count	16	0	16	0
Gas Flow Total Strontium	31	0	31	0
Gross Alpha Non Vol Beta	103	0	103	0
Gamma Spec Liquid RAD A-013 with Ba, La	44	0	98	0
Total	2996		3359	

Note 1: The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.



TABLE 7
ALL RADIOLOGICAL INTRA-LABORATORY DATA SUMMARY:
BIAS AND PRECISION BY MATRIX

ENVIRONMENTAL 2013	Bias Criteria (+ / - 25%)		Precision Criteria (Note 1)	
	WITHIN CRITERIA	OUTSIDE CRITERIA	WITHIN CRITERIA	OUTSIDE CRITERIA
MILK				
Gamma Spec Liquid RAD A-013	8	0	8	0
Gamma Iodine-129	1	0	1	0
Gamma Iodine-131	41	0	131	0
Gas Flow Sr 2nd count	50	0	51	0
Gas Flow Strontium 90	10	0	10	0
Gas Flow Total Strontium	35	0	35	0
Gamma Spec Liquid RAD A-013 with Ba, La	61	0	120	0
Gamma Spec Liquid RAD A-013 with Iodine	5	0	3	0
SOLID				
Gas Flow Radium 228	29	0	29	0
Tritium	266	0	312	0
Carbon-14	136	0	227	0
LSC Iron-55	146	0	165	0
Alpha Spec Polonium Solid	19	0	22	0
Gamma Nickel 59 RAD A-022	138	0	157	0
LSC Chlorine-36 in Solids	8	0	13	0
Gamma Spec Ra226 RAD A-013	35	0	42	0
Gamma Spec Solid RAD A-013	701	0	893	0
LSC Nickel 63	176	0	201	0
LSC Plutonium	223	0	245	0
Technetium-99	309	0	339	0
Gamma Spec Liquid RAD A-013	4	0	4	0
ICP-MS Technetium-99 in Soil	75	0	74	0
LSC Selenium 79	5	0	5	0
Total Activity,	2	0	3	0
Tritium	5	0	5	0
Alpha Spec Am243	33	0	42	0
Gamma Iodine-129	172	0	199	0
Gas Flow Lead 210	18	0	19	0
Total Uranium KPA	10	0	18	0
Alpha Spec Uranium	278	0	380	0
LSC Promethium 147	4	0	4	0
LSC, Rapid Strontium 89 and 90	106	0	120	0
Alpha Spec Thorium	207	0	288	0
Gas Flow Radium 228	2	0	2	0
ICP-MS Uranium-233, 234 in Solid	6	0	5	0



Alpha Spec Plutonium	242	0	263	0
ICP-MS Technetium-99 Prep in Soil	78	0	74	0
LSC Calcium 45	2	0	2	0
Alpha Spec Neptunium	234	0	256	0
Alpha Spec Plutonium	157	0	195	0
Alpha Spec Radium 226	7	0	8	0
Gamma Spec Solid with Ra226, Ra228	5	0	6	0
Gas Flow Sr 2nd count	15	0	18	0
Gas Flow Strontium 90	187	0	207	0
Gas Flow Total Radium	1	0	1	0
Lucas Cell Radium 226	71	0	93	0
Total Activity Screen	10	0	13	0
Alpha Spec Am241 Curium	292	0	336	0
Alpha Spec Total Uranium	5	0	6	0
Gas Flow Total Strontium	40	0	44	0
Gross Alpha Non Vol Beta	3	0	3	0
ICP-MS Uranium-233, 234 Prep in Solid	5	0	5	0
ICP-MS Uranium-235, 236, 238 in Solid	7	0	8	0
Alpha Spec Polonium Solid	6	0	4	0
Gamma Spec Solid RAD A-013 with Ba, La	7	0	10	0
Gamma Spec Solid RAD A-013 with Iodine	6	0	7	0
Gamma Spec Solid RAD A-013 (pCi/Sample)	0	0	2	0
Tritium	3	0	3	0
ICP-MS Uranium-234, 235, 236, 238 in Solid	245	0	234	0
ICP-MS Uranium-235, 236, 238 Prep in Solid	5	0	5	0
Gross Alpha/Beta	297	0	405	0
Gross Alpha/Beta (Americium Calibration) Solid	0	0	1	0
ICP-MS Uranium-234, 235, 236, 238 Prep in Solid	122	0	115	0
Lucas Cell Radium 226 by DOE HASL 300 Ra-04 Solid	2	0	2	0
FILTER				
Alpha Spec Uranium	18	0	24	0
Alpha Spec Polonium	0	0	54	0
Gamma I-131, filter	4	0	4	0
LSC Plutonium Filter	143	0	169	3
Tritium	134	0	201	0
Carbon-14	82	0	140	0
Nickel-63	0	0	4	0
LSC Iron-55	147	0	161	0
Gamma Nickel 59 RAD A-022	140	0	159	0
Gamma Iodine 131 RAD A-013	2	0	2	0



LSC Nickel 63	138	0	162	0
Technetium-99	103	0	137	0
Gamma Spec Filter RAD A-013	195	0	245	0
Alphaspec Np Filter per Liter	30	0	42	0
Alphaspec Pu Filter per Liter	14	0	29	0
Gamma Iodine-125	13	0	0	0
Gamma Iodine-129	114	0	127	0
Gross Alpha/Beta	0	0	1	0
Alpha Spec Am243	13	0	42	0
Gas Flow Lead 210	0	0	4	0
LSC Plutonium Filter per Liter	36	0	43	0
Total Uranium KPA	11	0	18	0
Alpha Spec Uranium	83	0	114	0
LSC, Rapid Strontium 89 and 90	144	0	168	0
Alpha Spec Thorium	45	0	57	0
Gas Flow Radium 228	0	0	2	0
Alpha Spec Plutonium	107	0	123	0
Alpha Spec Neptunium	112	0	129	0
Alpha Spec Plutonium	142	0	183	0
Alpha Spec Polonium,(Filter/Liter)	0	0	10	0
Alpha Spec Radium 226	0	0	1	0
Gas Flow Sr 2nd Count	93	0	101	0
Gas Flow Strontium 90	59	0	78	0
Gas Flow Total Radium	0	0	4	0
Lucas Cell Radium-226	0	0	2	0
Alpha Spec Am241Curium	157	0	198	0
Gas Flow Total Strontium	5	0	5	0
Total Activity in Filter,	0	0	7	0
Alphaspec Am241 Curium Filter per Liter	33	0	42	0
Tritium	106	0	108	0
Gamma Spec Filter RAD A-013 Direct Count	7	0	8	0
Carbon-14	44	0	44	0
Direct Count-Gross Alpha/Beta	72	0	0	0
Gross Alpha/Beta	74	0	81	0
ICP-MS Uranium-234, 235, 236, 238 in Filter	8	0	4	0
Alpha Spec U	31	0	60	0
Gross A & B	639	0	584	0
LSC Iron-55	39	0	51	0
Technetium-99	37	0	55	0
Gas Flow Sr-90	29	0	35	0
LSC Nickel 63	37	0	44	0
Carbon-14 (Ascarite/Soda Lime Filter per Liter)	2	0	2	0
Gas Flow Pb-210	25	0	46	0
Gas Flow Ra-228	24	0	35	0



Gamma Iodine 129	47	0	47	0
ICP-MS Uranium-234, 235, 236, 238 Prep in Filter	6	0	3	0
Gamma Spec Filter	142	0	163	0
Lucas Cell Ra-226	32	0	47	0
Alpha Spec Thorium	27	0	46	0
LIQUID				
Alpha Spec Uranium	418	0	607	0
Alpha Spec Polonium	2	0	3	0
Electrolytic Tritium	19	0	29	0
Tritium	1415	0	1503	0
Tritium by Combustion	1	0	1	0
Carbon-14	181	0	204	0
Plutonium	81	0	89	0
Chlorine-36 in Liquids	2	0	3	0
Iodine-131	6	0	3	0
LSC Iron-55	290	0	347	0
Gamma Nickel 59 RAD A-022	29	0	33	0
Gamma Iodine 131 RAD A-013	3	0	3	0
Gamma Radium 228 RAD A-013	1	0	1	0
LSC Nickel 63	328	0	370	0
LSC Radon 222	5	0	12	0
Technetium-99	303	0	365	0
Gamma Spec Liquid RAD A-013	874	0	875	0
Alpha Spec Total U RAD A-011	0	0	2	0
LSC Selenium 79	1	0	1	0
Total Activity,	6	0	6	0
Alpha Spec Am243	12	0	20	0
Gamma Iodine-129	84	0	117	0
Gamma Iodine-131	33	0	33	0
ICP-MS Technetium-99 in Water	5	0	28	0
Gas Flow Lead 210	83	0	94	0
Total Uranium KPA	96	0	226	2
LSC Promethium 147	3	0	3	0
LSC, Rapid Strontium 89 and 90	15	0	15	0
Alpha Spec Thorium	205	0	278	0
Gas Flow Radium 228	244	0	318	0
Gas Flow Radium 228	36	0	35	0
Gas Flow Radium 228	1	0	1	0
Alpha Spec Plutonium	317	0	436	0
Alpha Spec Neptunium	110	0	127	0
Alpha Spec Plutonium	61	0	86	0
Alpha Spec Radium 226	0	0	1	0
Gas Flow Sr 2nd count	283	0	316	0
Gas Flow Strontium 90	499	0	568	0
Gas Flow Strontium 90	2	0	2	0
Gas Flow Total Radium	92	0	129	0
ICP-MS Technetium-99 Prep in Water	5	0	28	0



ICP-MS Uranium-233, 234 in Liquid	1	0	1	0
Lucas Cell Radium 226	372	0	487	0
Lucas Cell Radium-226	17	0	21	0
Total Activity Screen	3	0	3	0
Chlorine-36 in Liquids	4	0	10	0
Alpha Spec Am241 Curium	307	0	405	0
Gas Flow Total Strontium	231	0	241	0
Gross Alpha Non Vol Beta	1313	0	1554	0
LSC Phosphorus-32	2	0	2	0
Lucas Cell Radium 226 by Method Ra-04	3	0	3	0
ICP-MS Uranium-233, 234 Prep in Liquid	1	0	1	0
Tritium in Drinking Water by EPA 906.0	11	0	14	0
Gamma Spec Liquid RAD A-013 with Ba, La	131	0	211	0
Gamma Spec Liquid RAD A-013 with Iodine	159	0	205	0
Gas Flow Strontium 89 & 90	6	0	0	0
ICP-MS Uranium-235, 236, 238 in Liquid	2	0	2	0
Gas Flow Total Alpha Radium	13	0	11	0
Gross Alpha Co-precipitation	7	0	9	0
ICP-MS Uranium-235, 236, 238 Prep in Liquid	1	0	1	0
ICP-MS Uranium-234, 235, 236, 238 in Liquid	22	0	98	0
Gross Alpha Beta (Americium Calibration) Liquid	16	0	21	0
ICP-MS Uranium-234, 235, 236, 238 Prep in Liquid	14	0	51	0
Alpha/Beta (Americium Calibration) Drinking Water	5	0	4	0
TISSUE				
Carbon-14	2	0	2	0
LSC Iron-55	3	0	3	0
Gamma Nickel 59 RAD A-022	2	0	2	0
Gamma Spec Solid RAD A-013	71	0	79	0
LSC Nickel 63	4	0	4	0
LSC Plutonium	1	0	1	0
Technetium-99	2	0	2	0
Tritium	1	0	1	0
Gamma Iodine-129	2	0	2	0
Gas Flow Lead 210	2	0	2	0
Alpha Spec Uranium	5	0	5	0
Alpha Spec Thorium	2	0	2	0
Alpha Spec Plutonium	10	0	10	0
Alpha Spec Neptunium	4	0	4	0
Alpha Spec Plutonium	2	0	2	0
Gas Flow Sr 2nd count	10	0	10	0



Gas Flow Strontium 90	20	0	23	0
Alpha Spec Am241 Curium	9	0	9	0
Gas Flow Total Strontium	19	0	19	0
Gamma Spec Solid RAD A-013 with Ba, La	6	0	5	0
Gamma Spec Solid RAD A-013 with Iodine	17	0	17	0
Gross Alpha/Beta	2	0	2	0
SEA WATER				
LSC Iron-55	2	0	2	0
LSC Nickel 63	2	0	2	0
Gas Flow Total Strontium	1	0	1	0
Gross Alpha Non Vol Beta	1	0	1	0
Gamma Spec Liquid RAD A-013 with Iodine	1	0	1	0
VEGETATION				
Gamma Nickel 59 RAD A-022	3	0	3	0
Gamma Spec Solid RAD A-013	31	0	31	0
LSC Nickel 63	3	0	3	0
LSC Plutonium	1	0	1	0
Technetium-99	6	0	6	0
Tritium	9	0	9	0
Gamma Iodine-129	1	0	1	0
Gas Flow Lead 210	8	0	7	0
Total Uranium KPA	4	0	4	0
Alpha Spec Uranium	23	0	21	0
Alpha Spec Thorium	7	0	7	0
Alpha Spec Plutonium	15	0	12	0
Alpha Spec Neptunium	1	0	1	0
Alpha Spec Plutonium	1	0	1	0
Gas Flow Sr 2nd count	9	0	9	0
Gas Flow Strontium 90	19	0	18	0
Gas Flow Total Radium	2	0	3	0
Alpha Spec Am241 Curium	11	0	8	0
Gamma Spec Solid RAD A-013 with Iodine	91	0	93	0
Gamma Spec Solid RAD A-013 (pCi/Sample)	5	0	3	0
Alpha Spec Am241 (pCi/Sample)	3	0	2	0
ICP-MS Uranium-234, 235, 236, 238 in Solid	9	0	7	0
Alpha Spec Uranium	1	0	17	0
Gross Alpha/Beta	4	0	4	0
Alpha Spec Plutonium	2	0	2	0
Gas Flow Strontium 90	4	0	2	0
ICP-MS Uranium-234, 235, 236, 238 Prep in Solid	7	0	5	0
AIR CHARCOAL				
Gamma Iodine 131 RAD A-013	623	0	645	0



Gamma Iodine-129	0	0	1	0
Carbon-14 (Ascarite/Soda Lime Filter per Liter)	89	0	88	0
DRINKING WATER				
Alpha Spec Uranium	7	0	8	0
Tritium	51	0	52	0
Iodine-131	1	0	2	0
LSC Iron-55	24	0	22	0
LSC Nickel 63	23	0	21	0
LSC Radon 222	96	0	96	0
Gamma Spec Liquid RAD A-013	24	0	24	0
Total Activity,	2	0	2	0
Gamma Iodine-129	2	0	2	0
Gamma Iodine-131	38	0	38	0
Total Uranium KPA	15	0	28	0
Gas Flow Radium 228	42	0	42	0
Alpha Spec Plutonium	6	0	6	0
Gas Flow Sr 2nd count	16	0	16	0
Gas Flow Strontium 90	25	0	24	0
Lucas Cell Radium-226	58	6	78	0
Alpha Spec Am241 Curium	6	0	6	0
Gas Flow Total Strontium	31	0	31	0
Gross Alpha Non Vol Beta	343	0	287	0
Tritium in Drinking Water by EPA 906.0	37	0	34	0
Gamma Spec Liquid RAD A-013 with Ba, La	44	0	98	0
Gas Flow Strontium 89 & 90	20	0	13	0
Gas Flow Total Alpha Radium	1	0	1	0
Gross Alpha Co-precipitation	105	0	87	0
Alpha/Beta (Americium Calibration) Drinking Water	13	0	13	0
ECLS-R-GA NJ 48 Hr Rapid Gross Alpha	8	0	8	0
Total	20148		23892	

Note 1: The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.



TABLE 8
2013 CORRECTIVE ACTION REPORT SUMMARY

CORRECTIVE ACTION ID# & PE FAILURE	DISPOSITION
<p>CARR130513-789</p> <p>ISO Documentation of PT Failures in MAPEP-13-RdV28 for Uranium in Vegetation by ICP/MS and Alpha Spec</p>	<p>Root Cause Analysis of MAPEP-13-RdV28 Uranium-234/233, Uranium-235, Uranium-238 and Total Uranium</p> <p>Following reviews of our process and data and conversations with personnel from the affected laboratories, it was determined that all failures were due to an analyst error during sample preparation. Glass instead of Teflon beakers were used during the sample digestion which contained Hydrofluoric (HF) acid. Per Standard Operating Procedure (SOP) GL-RAD-A-015 section 11.2.4, the sample should have been transferred to a Teflon beaker. In this instance, this step was omitted. The digestion was performed in glass beakers so trace amounts of Uranium were leached from the glass into the sample, resulting in high bias in the results. Normal procedure dictates that glass is not used when using HF in the digestion process due to the presence of natural Uranium in the glassware.</p> <p>In order to prove that this was an isolated incident and that our overall process is in control a series of digestions were performed in the glass beakers to confirm our conclusion.</p> <ul style="list-style-type: none"> • HCL /HNO₃ only digestion - Uranium was not detected. • HCL, HNO₃, and HF digestion - Enough Uranium activity was detected to account for the high bias (as many as 70 counts in a 16 hour and 40 minute count). • HF only digestion - Results similar to HCL, HNO₃, and HF were observed <p>A second PT was successfully analyzed for this matrix.</p>
<p>CARR130522-791</p> <p>ISO Documentation of PT Failures in -MRAD-18 for Cesium-134, Cesium-137 and Zinc-65 in Soil</p>	<p>Following a review of our processes, the data and conversations with personnel from the affected laboratories, it was determined that our normal procedure for preparing soil samples is not sufficient for this soil matrix. Per the Standard Operating Procedure (SOP) GL-RAD-A-021, the sample was</p>



dried, homogenized, and passed through a 28 mesh sieve. However, approximately 20-30% of the sample consists of particles greater than the 28 mesh sieve size. These larger particles were not affected by our normal homogenization process. In accordance with the SOP, the larger particles were removed prior to preparing the container for gamma counting.

Upon receipt of the graded report, the following steps were taken to prove that this was an isolated incident and that our overall process is in control.

1. A recount of the initially prepared sample performed and confirmed the originally reported results.
2. A new container was then prepared from the original sample but omitting the preparation step and counted. This produced acceptable results.
3. A second sample was prepared per the SOP; however, only a portion of the sample was removed during the sieving steps. This sample produced similar high biased results.

An aliquot of the sample was then pulverized prior to gamma counting. This approach also produced acceptable results.

Permanent Corrective/Preventive Actions or Improvements :

In the future, these samples will be pulverized to ensure that all the material passes through the 28 mesh sieve; thus, eliminating the need to remove any of the original sample. A comment has been added to the set-up for the solid matrix.

A second PT was successfully analyzed for this matrix.



CARR130826-810

For Failures of RAD-94 for Gross Alpha/Bea and Strontium 89/90 in Water

Root Cause Analysis of Gross Alpha

After a review of the data, an apparent reason for this discrepancy could not be determined. The following steps were taken to prove that this high bias was an isolated occurrence and that our overall process is within control.

1. The batch quality control samples were reviewed and found to be compliant. The LCS recovered at 110%. While the recovery is slightly elevated, it is well within the 80%-120% acceptance range.
2. Laboratory control data were also reviewed for trends. None were noted.
3. The instrument calibrations were reviewed for positive biases that could have attributed to this failure. None were noted.
4. Two sample duplicates were also prepared and counted along with the reported result. Both results fell within the method's acceptance range for duplicate. One of the results also fell within the acceptance range of the study.
5. **The original sample was also recounted and the results fell within the acceptance range.**

**Root Cause Analysis of Strontium-89 (Sr-89)
LAB PBMS A-004**

After a review of the data, an apparent reason for this discrepancy could not be determined. The following steps were taken to prove that this high bias was an isolated occurrence and that our overall process is within control.

1. The batch quality control samples were reviewed and found to be compliant. The LCS recovered at 98.1%.
2. Laboratory control data were also reviewed for trends. None were noted.
3. The instrument calibrations were reviewed for positive biases that could have attributed to this failure. None were noted.
4. Sample duplicates were also prepared and counted along with the reported result. Duplicate results fell within the acceptance range of the study.

**Root Cause Analysis of Strontium-89 (Sr-89)
EPA 905.0**

After a review of the data, an apparent reason for this discrepancy could not be determined. The following steps were taken to prove that this high bias was an isolated



occurrence and that our overall process is within control.

1. The batch quality control samples were reviewed and found to be compliant. The LCS recovered at 102%.
2. Laboratory control data were also reviewed for trends. None was noted.
3. The instrument calibrations were reviewed for positive biases that could have attributed to this failure. None were noted.
4. Sample duplicates were also prepared and counted along with the reported result. All results fell within the method's acceptance range for duplicates.

Permanent Corrective/Preventive Actions or Improvements:

Gross Alpha

The laboratory must assume an unidentified random error caused the high bias because all quality control criteria were met for the batch. The lab will continue to monitor the recoveries of this radionuclide to ensure that there are no issues.

**Strontium-89 (Sr-89)
LAB PBMS A-004 and EPA 905.0**

To summarize our efforts (including the initial result), the laboratory had 3 analysts, two different methods, processed with 2 calibrations and two separate Y carriers used in the analysis of this sample and only one acceptable result for Sr-89. All LCS results have met acceptance criteria. This leads the laboratory to conclude that there is possibly an error in the original make-up of the PT sample. The instructions list stable Sr and Y as being included but they are not at levels greater than are normally listed so we suspect that the make up of the sample was the cause. The laboratory will continue to monitor the recoveries from these two methods to ensure that there are no issues.



CARR131205-845

For failures of MRAD-19 for Uranium-234 and Total Uranium in Vegetation

Root Cause Analysis

These elevated results were obtained following our routine procedure. The reported result for U-234 was less than the MDA and had a elevated uncertainty. This high U-234 result also attributed to the high Total-U result.

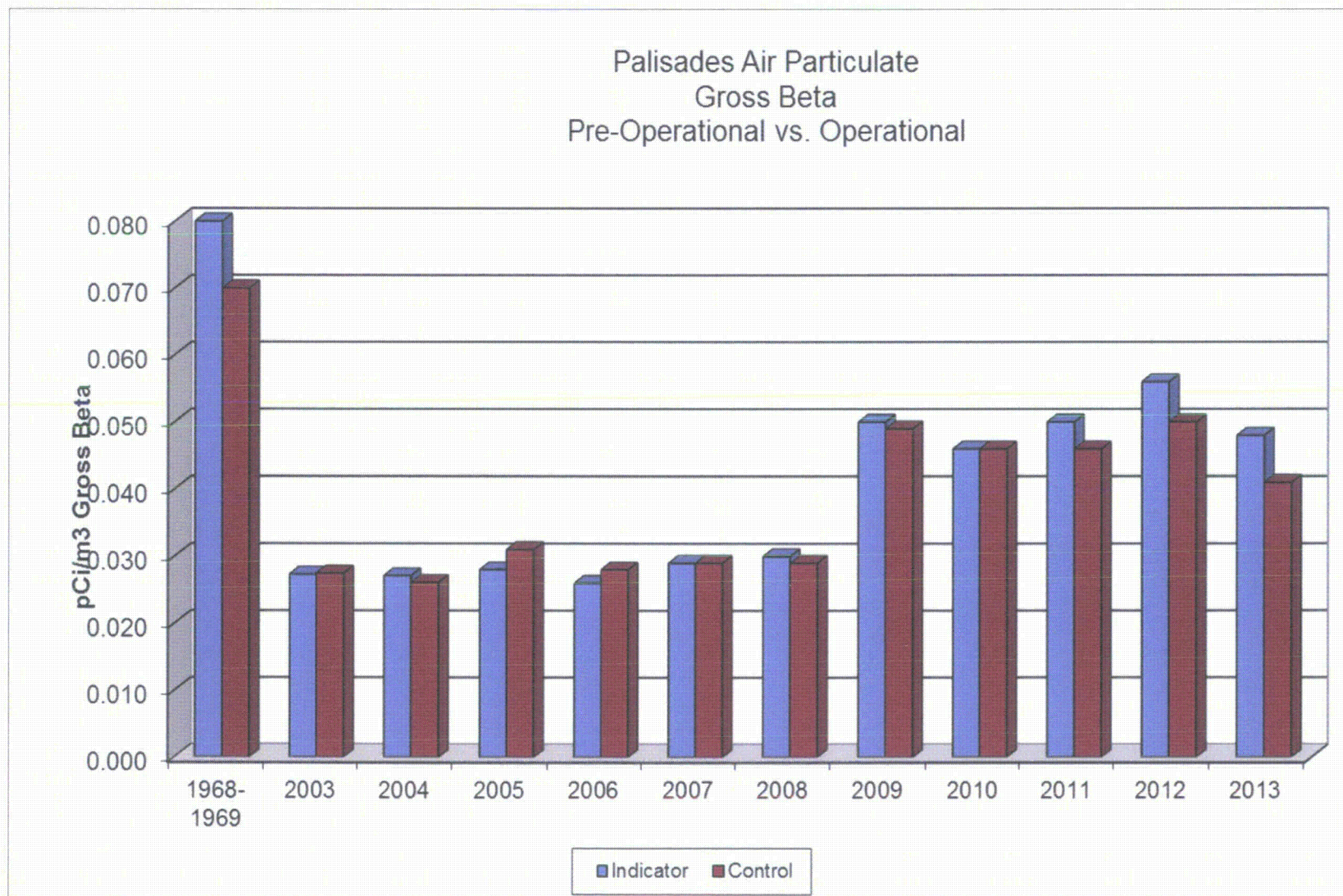
Upon receipt of the graded report, the following steps were taken to prove that this was an isolated incident and that our overall process is in control.

- A recount of the initially prepared sample performed and confirmed the originally reported results.
- The sample was reanalyzed using a larger aliquot and results that fell within the acceptance range were achieved.

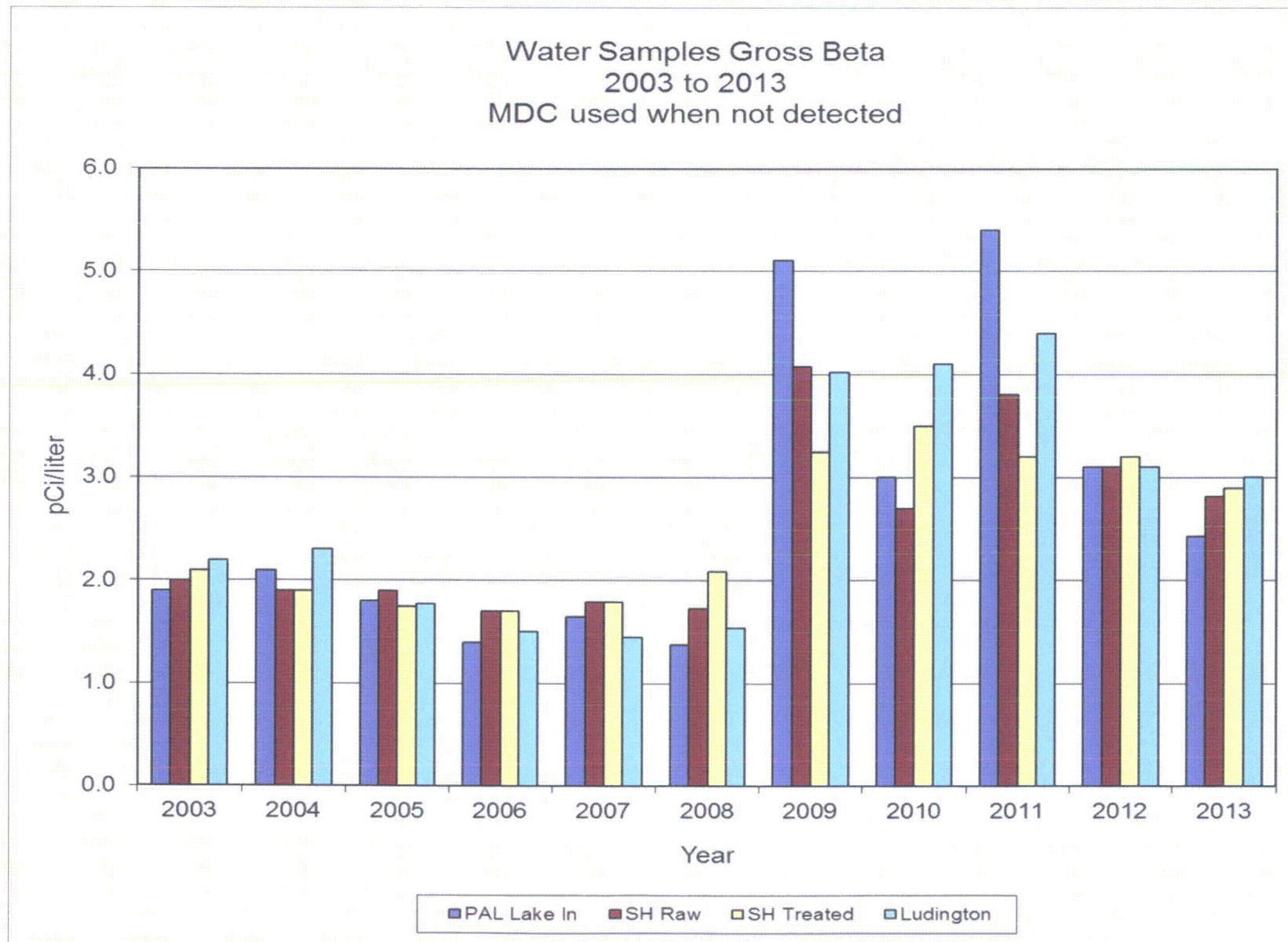
Permanent Corrective/Preventive Actions or Improvements

In the future when the result is below the MDA and are not compatible with other analytical technologies, the laboratory will attempt to use a larger sample aliquot with hopes of achieve a result above the MDA or with a lower uncertainty. If the matrix and larger sample size do not provide useable data, the results may not be report.

ATTACHMENT F
DATA GRAPHS



ATTACHMENT F
DATA GRAPHS



ATTACHMENT F
DATA GRAPHS

