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Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2017

Ladies and Gentlemen:

In accordance with section 5.6.2 of the referenced plants' Technical Specifications, Southern Nuclear Operating Company hereby submits the Annual Radiological Environmental Operating Reports for 2017.

This letter contains no NRC commitments. If you have any questions, please contact Jamie Coleman at 205.992.6611.

Respectfully submitted,

C. A. Gayheart
Regulatory Affairs Director

CAG/RMJ

Enclosures: 1. Hatch Annual Radiological Environmental Operating Report for 2017
2. Farley Annual Radiological Environmental Operating Report for 2017
3. Vogtle Annual Radiological Environmental Operating Report for 2017

cc: Regional Administrator, Region II
NRR Project Manager – Farley, Hatch, Vogtle 1 & 2
Senior Resident Inspector – Farley, Hatch, Vogtle 1 & 2
NRR Project Manager – Farley, Hatch, Vogtle 1 & 2
RType: Farley=CFA04.054, Hatch=CHA02.004, Vogtle=CVC7000
State of Alabama Department of Public Health, Office of Radiation Control
State of Georgia Department of Natural Resources
American Nuclear Insurers

Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2017

Enclosure 1

Hatch Annual Radiological Environmental Operating Report for 2017

EDWIN I. HATCH NUCLEAR PLANT

2017 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Southern Nuclear

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A-2 – REMP Stations within 10 Miles
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Appendix B – Errata

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LIST OF ACRONYMS

AREOR	Annual Radiological Environmental Operating Report
ASTM	American Society for Testing and Materials
BWR	Boiling Water Reactor
CL	Confidence Level
EPA	Environmental Protection Agency
GA EPD	State of Georgia Environmental Protection Division
GPC	Georgia Power Company
GPCEL	Georgia Power Company Environmental Laboratory
HNP	Edwin I. Hatch Nuclear Plant
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWe	MegaWatts Electric
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSL	Optically Stimulated Luminescence
Po	Preoperation
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
TLD	Thermoluminescent Dosimeter
TS	Technical Specification

1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) is conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). REMP activities for 2017 are reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP are to:
1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
2) Assess the radiological impact (if any) to the environment due to the operation of the Edwin I. Hatch Nuclear Plant (HNP).

The assessments include comparisons between the results of analyses of samples obtained at locations where radiological levels are not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels are more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

The pre-operational stage of the REMP began with the establishment and activation of the environmental monitoring stations in January of 1972. The operational stage of the REMP began on September 12, 1974 with Unit 1 initial criticality.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results and an assessment of any radiological impacts to the environment as well as the results from the interlaboratory comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5

2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed in order to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, the locations of the sampling stations are depicted on Maps A-1 through A-3 of the georeferenced data included in Appendix A of this report. Any Errata from previous reports are provided in Appendix B. All data points resulting from REMP sampling are provided in Appendix C.

From January to October 2017, the Georgia Power Company Environmental Lab (GPCEL) in Atlanta, Georgia, was performing the collection of all Plant Hatch REMP samples. Beginning in October, a contractor through SNC provided services for collection of most of the REMP samples. After October, only fish samples were collected the GPCEL. The GPCEL will continue to analyze all REMP samples.

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Approximate Number of Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	37 routine monitoring stations	Quarterly	Gamma dose, quarterly
Airborne Radioiodine and Particulates	Samples from six locations:	Continuous sampler operation with sample collection weekly	Radioiodine canister: I-131 analysis, weekly Particulate sampler: analyze for gross beta radioactivity not less than 24 hours following filter change, weekly; perform gamma isotopic analysis on affected sample when gross beta activity is 10 times the yearly mean of control samples; and composite (by location) for gamma isotopic analysis, quarterly.
Waterborne			
Surface	One sample upriver One sample downriver	Composite sample over one month period[1]	Gamma isotopic analysis[2], monthly Composite for tritium analysis, quarterly
Drinking[3,4]	One sample of river water near the intake and one sample of finished water from each of one to three of the nearest water supplies which could be affected by HNP discharges.	River water collected near the intake will be a composite sample; the finished water will be a grab sample. These samples will be collected monthly unless the calculated dose due to consumption of the water is greater than 1 mrem/year; then the collection will be biweekly. The collections may revert to monthly should the calculated doses become less than 1 mrem/year.	I-131 analysis on each sample when biweekly collections are required. Gross beta and gamma isotopic analysis on each sample; composite (by location) for tritium analysis, quarterly.
Groundwater	See Table 3-8 and Map A-4 in Appendix A for on-site well locations. These are part of the GWPP (NEI 07-07).	Quarterly sample; pump used to sample GW wells; grab sample from yard drains and ponds Groundwater is sampled per the guidance under NEI 07-07.	Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment	Two	Semiannually	Gamma isotopic analysis[2], semiannually

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or Sample	Approximate Number of Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Ingestion			
Milk[5]	One	Bimonthly	Gamma isotopic analysis[2,7], bimonthly
Fish or Clams[6]	Two	Semiannually	Gamma isotopic analysis[2] on edible portions, semiannually
Grass or Leafy Vegetation	Three	Monthly during growing season	Gamma isotopic analysis[2,7], monthly

Notes:
[1]Composite sample aliquots shall be collected at time intervals that are very short (e.g., hourly) relative to the compositing period (e.g., monthly) to assure obtaining a representative sample.
[2]Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.
[3]If it is found that river water downstream of the plant is used for drinking, drinking water samples will be collected and analyzed as specified herein.
[4]A survey shall be conducted annually at least 50 river miles downstream of the plant to identify those who use water from the Altamaha River for drinking.
[5]Up to three sampling locations within five miles and in different sectors will be used as available. In addition, one or more control locations beyond 10 miles will be used.
[6]Commercially or recreationally important fish may be sampled. Clams may be sampled if difficulties are encountered in obtaining sufficient fish samples.
[7]If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
064	Other	Roadside Park	WNW	0.8	Direct
101	Indicator	Inner Ring	N	1.9	Direct
102	Indicator	Inner Ring	NNE	2.5	Direct
103	Indicator	Inner Ring	NE	1.8	Airborne, Direct
104	Indicator	Inner Ring	ENE	1.6	Direct
105	Indicator	Inner Ring	E	3.7	Direct
106	Indicator	Inner Ring	ESE	1.1	Direct, Vegetation
107	Indicator	Inner Ring	SE	1.2	Airborne, Direct
108	Indicator	Inner Ring	SSE	1.6	Direct
109	Indicator	Inner Ring	S	0.9	Direct
110	Indicator	Inner Ring	SSW	1.0	Direct
111	Indicator	Inner Ring	SW	0.9	Direct
112	Indicator	Inner Ring	WSW	1.0	Airborne, Direct, Vegetation
113	Indicator	Inner Ring	W	1.1	Direct
114	Indicator	Inner Ring	WNW	1.2	Direct
115	Indicator	Inner Ring	NW	1.1	Direct
116	Indicator	Inner Ring	NNW	2.0[4]	Airborne, Direct
170	Control	Upstream	WNW	**[2]	River[3]
172	Indicator	Downstream	E	**[2]	River[3]
201	Other	Outer Ring	N	5.0	Direct
202	Other	Outer Ring	NNE	4.9	Direct
203	Other	Outer Ring	NE	5.0	Direct
204	Other	Outer Ring	ENE	5.0	Direct
205	Other	Outer Ring	E	7.2	Direct
206	Other	Outer Ring	ESE	4.8	Direct
207	Other	Outer Ring	SE	4.3	Direct
208	Other	Outer Ring	SSE	4.8	Direct
209	Other	Outer Ring	S	4.4	Direct
210	Other	Outer Ring	SSW	4.3	Direct
211	Other	Outer Ring	SW	4.7	Direct
212	Other	Outer Ring	WSW	4.4	Direct
213	Other	Outer Ring	W	4.3	Direct
214	Other	Outer Ring	WNW	5.4	Direct
215	Other	Outer Ring	NW	4.4	Direct
216	Other	Outer Ring	NNW	4.8	Direct
301	Other	Toombs Central School	N	8.0	Direct

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
304	Control	State Prison	ENE	11.2	Airborne, Direct
304	Control	State Prison	ENE	10.3	Milk
309	Control	Baxley Substation	S	10.0	Airborne, Direct
416	Control	Emergency News Center	NNW	21.0	Direct, Vegetation

Notes:
[1]Direction and distance are determined from the main stack.

[2]Station 170 is located approximately 0.6 river miles upstream of the intake structure for river water, 1.1 river miles for sediment and clams, and 1.5 river miles for fish.

Station 172 is located approximately 3.0 river miles downstream of the discharge structure for river water, sediment and clams, and 1.7 river miles for fish.

The locations from which river water and sediment may be taken can be sharply defined. However, the sampling locations for clams often have to be extended over a wide area to obtain a sufficient quantity. High water adds to the difficulty in obtaining clam samples and may also make an otherwise suitable location for sediment sampling unavailable. A stretch of the river of a few miles or so is generally needed to obtain adequate fish samples. The mile locations given above represent approximations of the locations where samples are collected.

[3]River (fish or clams, shoreline sediment, and surface water)

[4]This station was shifted approximately 0.4 miles due to a highway widening project. Sector did not change. Map A-1 shows the new station location.

3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 881 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980, the Chernobyl incident in the spring of 1986 and the Fukushima accident in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2017, Be-7 was detected during the first quarter and the results will be included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions.

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.

Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station, versus an indicator station or a community station, that can be determined statistically at the 99% Confidence Level (CL). A difference

in mean values which was less than the MDD was considered to be statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

The 2017 results were compared with past results, including those obtained during pre-operation. As appropriate, results were compared with their MDC (listed in Table 3-1) and RL which is listed in Table 3-2. The required MDCs were achieved during laboratory sample analysis. No data points were excluded for violating Chauvenet's criterion.

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta 310	10	19.7 0.7-40.5 (206/206)	Inner Ring NNW 1.6 mi.	20.3 7.5-38.9 (52/52)		19.9 7.5-38.9 (104/104)
	Gamma Isotopic 24						
	Be-7	24	85.0 66.6-104.8 (16/16)	Baxley Sub. S 10 mi. (Control)	96.6 72.9-110.5 (4/4)		89.0 61.4-110.5 (8/8)
	I-131	70	NDM(c)		NDM		NDM
	Cs-134	50	NDM		NDM		NDM
	Cs-137	60	NDM		NDM		NDM
Airborne Radioiodine (fCi/m3)	I-131 310	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 145		12.5 8.0-20.6 (62/62)	Inner Ring NW 1.1 mi.	19.3 17.6-20.6 (4/4)	12.1 7.8-17.5 (71/71)	11.5 8.3-14.1 (12/12)
Milk (pCi/l)	Gamma Isotopic 24						
	I-131	1			NDM		NDM
	Cs-134	15			NDM		NDM
	Cs-137	18			NDM		NDM
	Ba-140	60			NDM		NDM
	La-140	15			NDM		NDM
Vegetation (pCi/kg-wet)	Gamma Isotopic 36						

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Be-7	729	2591 380-14626 (24/24)	Inner Ring ESE 1.1 mi.	3215 830-14626 (12/12)		1967 594-5177 (12/12)
	I-131	60	NDM				NDM
	Cs-134	60	NDM				NDM
	Cs-137	80	NDM		NDM		NDM
River Water (pCi/l)	Gamma Isotopic 12						
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	15(d)	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
	Tritium 8	3000 (e)	113 15.3-258 (4/4)	Upstream WNW ~0.6 RM from intake	151 46-261 (4/4)		151 46-261 (4/4)
Fish (pCi/kg-wet)	Gamma Isotopic 8						
	Be-7	655(d)	NDM				NDM

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Units)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Mn-54	130	NDM				NDM
	Fe-59	260	NDM				NDM
	Co-58	130	NDM				NDM
	Co-60	130	NDM				NDM
	Zn-65	260	NDM				NDM
	Cs-134	130	NDM				NDM
	Cs-137	150	NDM	Upstream WNW ~1.5 RM from intake	8.3 8.3-8.3 (1/4)		8.3 8.3-8.3 (1/4)
Sediment (pCi/kg-dry)	Gamma Isotopic 4						
	Cs-134	150	NDM				NDM
	Cs-137	180	47.5 29.5-65.4 (2/2)	Upstream WNW 1.1 RM from intake	89.6 77.8-101.4 (2/2)		89.6 77.8-101.4 (2/2)

Notes:

(a)The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.

(b) Mean and range are based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.

(c) No Detectable Measurement(s) (NDM).

(d) If a drinking water pathway were to exist, a MDC of 1pCi/L would have been used.

(e) If a drinking water pathway were to exist, a MDC of 2000 pCi/L would have been used.

Not Applicable (sample not required)

Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m3)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000[a]				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2[b]	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

[a] This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.
[b] If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule are permitted, if samples are unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolution.

Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
01/23/17-01/30/17 CR 10340817	Air station #103	(D) No air station sample was collected.	Air station was inaccessible due to flooding of the area.	Water levels reduced and sampling was resumed the following sample period.
08/07/17 TE 1010973	River sample at RM 172	(D) No river water sample collected.	Intake hose became detached from collection apparatus.	Upon discovery, intake hose was reattached and sampling was resumed.
09/11/17-09/25/17 CR 10431394	Air Station #103	(A) Air station sample lost 48 hour and 54 hours of run time during two consecutive weeks.	Air station power supply lost due to hurricane weather.	In both events, power was restored and the remainder of the samples were obtained.
3rd Qtr, 2017 CR 10482986	OSLD at Station H207	(D) OSLD not obtained	OSLD appears to have been stolen; it could not be located at the time of the changeout.	OSLD was replaced upon 3rd quarter changeout.
11/06/17-11/13/17 CR 10427749	Air Station #103	(D) Air sample not collected	Personnel performing the collection did not install the air filter or cartridge apparatus.	Corrective actions were performed under CAR 271709 and included weekly observations and increased oversight obligations.
11/28/17-12/5/17 CR 10434336	Air Station #112	(A) Sample was short by approximately 96 hours of run time.	Air station pump found to be out of service due to power failure.	Air station was returned to service upon discovery.
4th Qtr, 2017 CR 10482986	OSLDs at Stations H108 and H113	(D) OSLDs not obtained	H108 OSLD appears to have been stolen. H113 appears to have been removed during ROW tree cutting.	OSLDs were replaced upon 4th quarter changeout.

* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Lab procedures.
** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Lab

3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters are collected weekly at four indicator stations (Stations 103, 107, 112 and 116) which encircle the plant at the site periphery, and at two control stations (Station 304 and 309) which is approximately 10 miles from the main stack. At sampling locations containing a filter and cartridge series, air is continuously drawn through a glass fiber filter to retain airborne particulate and an activated charcoal canister is placed in series with the filter to adsorb radioiodine.

3.1.1 Gross Beta

As provided in Table 3-1, the 2017 annual average weekly gross beta activity was 19.7 fCi/m3 for the indicator stations. It was 0.2 fCi/m3 less than the control station average of 19.9 fCi/m3 for the year. No MDD was applied since the indicator average was less than the control.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there is close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant is not contributing significantly to the gross beta concentrations in air.

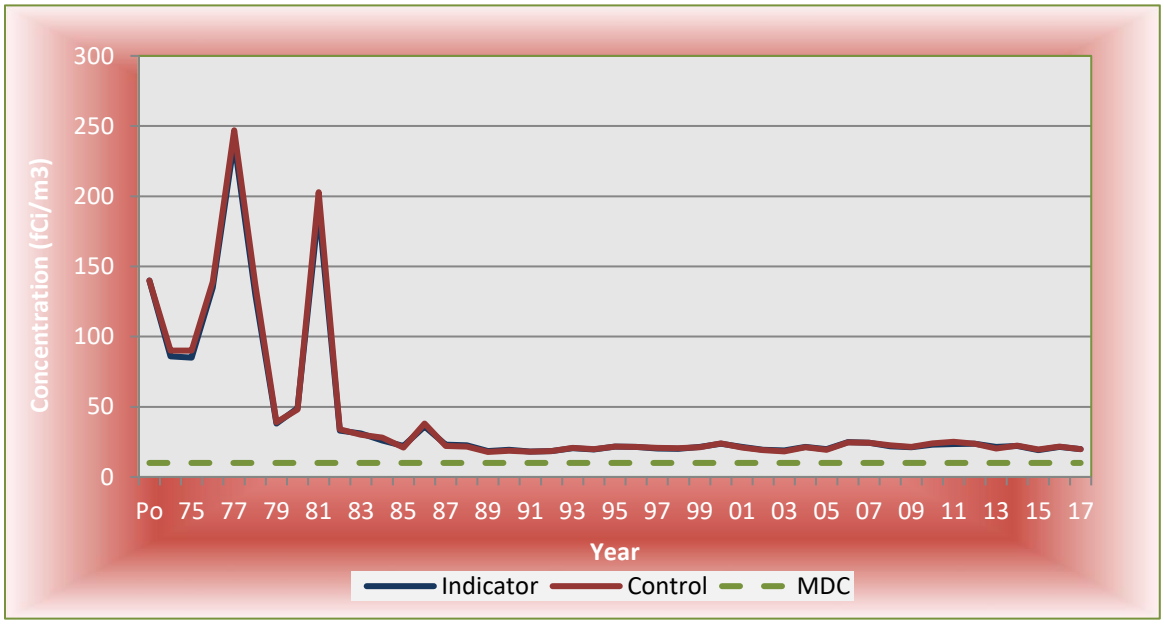
Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)
Pre-op	140	140		1996	21.3	21.4
1974	87	90		1997	20.3	20.7
1975	85	90		1998	20.0	20.5
1976	135	139		1999	21.3	21.3
1977	239	247		2000	23.6	23.9
1978	130	137		2001	21.5	21.0
1979	38	39		2002	19.3	19.2
1980	49	48		2003	18.8	18.2
1981	191	203		2004	21.4	21.3
1982	33	34		2005	19.7	19.4
1983	31	30		2006	24.9	24.7
1984	26	28		2007	24.4	24.3
1985	22	21		2008	21.8	22.5
1986	36	38		2009	21.2	21.4
1987	23	22		2010	23.1	24.0
1988	22.6	21.7		2011	23.5	25.1
1989	18.4	17.8		2012	23.7	22.7
1990	19.3	18.7		2013	21.3	20.3
1991	18.1	18		2014	22.0	22.3
1992	18.5	18.4		2015	19.1	19.6
1993	20.4	20.7		2016	21.4	21.6

Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)
1994	19.5	19.7		2017	19.7	19.9
1995	21.7	21.7				

Figure 3-1. Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates

During 2017, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters other than Be-7. While the level of Be-7 detected in plant releases was very low and only present in the first quarter, indicator and control stations all consistently show levels of Be-7 throughout the 2017 year. The indicator average in air particulate filter composites was 85.0 fCi/m3, while the control average was 89.0 fCi/m3. The MDD was not calculated because the control average was less than the indicator average; however, it is clear from the data that Be-7 is consistently present in the environment despite the occasional release of Be-7 from the plant.

On only one occasion since 1986, has a man-made radionuclide been detected in a quarterly composite. A small amount of Cs-137 (1.7 fCi/m3) was identified in the first quarter of 1991 at Station 304. The MDC and RL for Cs-137 in air are 60 and 20,000 fCi/m3, respectively.

3.2 Direct Radiation

In 2017, direct (external) radiation was measured with Optically Stimulated Luminescent (OSL) dosimeters by placing two OSL badges at each station. The gamma dose at each station is reported as the average reading of the two badges. The badges are analyzed on a quarterly basis. An inspection is performed near mid-quarter for offsite badges to assure that the badges are on-station and to replace any missing or damaged badges.

Two direct radiation stations are established in each of the 16 compass sectors, to form two concentric rings. The inner ring stations (Nos. 101 through 116) are located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring stations (Nos. 201 through 216) are located at distances of four to five miles from the plant as shown in Map A-2 in Appendix A. The stations in the East sector are a few additional miles away with regard to the other stations in their respective rings due to large swamps making normal access extremely difficult. The 16 stations forming the inner ring are designated as the indicator stations. The two-ring configuration of stations was established in accordance with NRC Branch Technical Position "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979. The three control stations (Nos. 304, 309 and 416) are located at distances greater than 10 miles from the plant as shown in Map A-2. The mean and range values presented in the "Other" column in Table 3-1 includes the outer ring stations (stations 201 through 216) as well as stations 064 and 301, which monitor special interest areas. Station 064 is located at the onsite roadside park, while Station 301 is located near the Toombs Central School. Station 210, in the outer ring, is located near the Altamaha School (the only other nearby school).

As provided in Table 3-1, the 2017 average quarterly exposure at the indicator stations (inner ring) was 12.5 mR with a range of 8.0-20.6 mR. The indicator station average was 1.0 mR higher than the control station average (11.5 mR with a range of 8.3-14.1 mR). This difference was slightly above the MDD of 0.8 mR so it is statistically discernible; however, there is very close agreement to the control values.

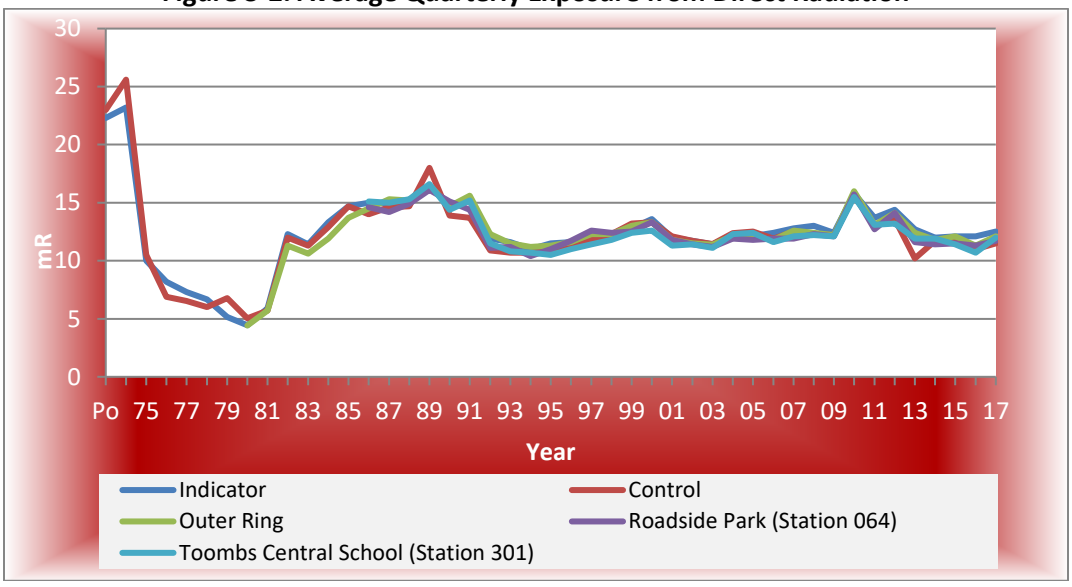
The quarterly exposures acquired at the community/other (outer ring) stations during 2017 ranged from 7.8 to 17.5 mR with an average of 12.1 mR which was 0.6 mR more than that for the control stations. However, this difference is not discernible since it is less than the MDD of 0.7 mR.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values is attributed to a change in TLDs from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change.

Table 3-5. Average Quarterly Exposure from Direct Radiation

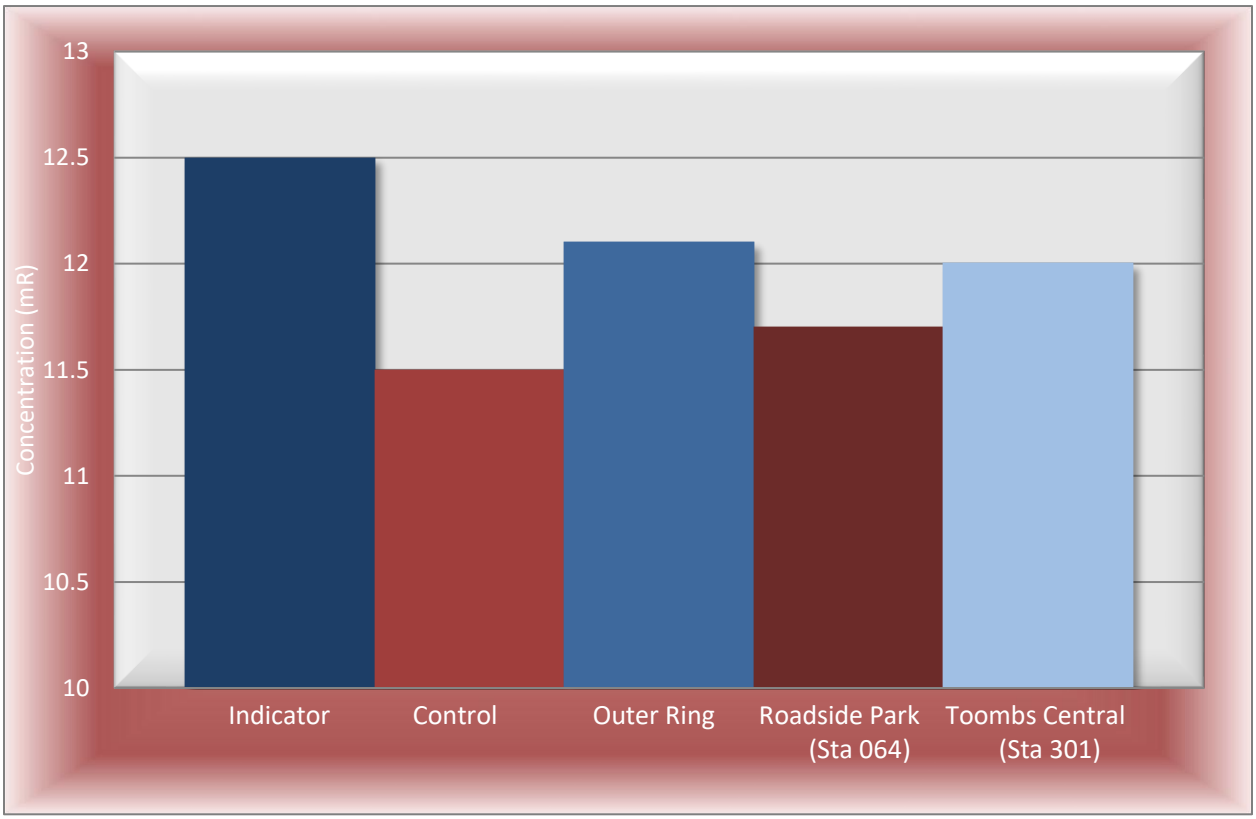
Period	Indicator (mR)	Control (mR)	Outer Ring (mR)		Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	22.3	23.0	NA		1996	11.6	11.3	11.6
1974	23.2	25.6	NA		1997	12.3	11.8	12.3
1975	10.0	10.5	NA		1998	12.1	12.3	12.3
1976	8.18	6.90	NA		1999	12.8	13.2	13.0
1977	7.31	6.52	NA		2000	13.6	13.3	13.3
1978	6.67	6.01	NA		2001	12.0	12.1	11.8
1979	5.16	6.77	NA		2002	11.7	11.7	11.5
1980	4.44	5.04	4.42		2003	11.4	11.4	11.4
1981	5.90	5.70	5.70		2004	12.2	12.4	12.2
1982	12.3	12.0	11.3		2005	12.1	12.5	12.0
1983	11.4	11.3	10.6		2006	12.4	11.9	11.8
1984	13.3	12.9	11.9		2007	12.8	12.5	12.6
1985	14.7	14.7	13.7		2008	13.0	12.3	12.4
1986	15.0	14.0	14.5		2009	12.4	12.2	12.2
1987	14.9	14.6	15.3		2010	15.8	15.6	16.0
1988	15.0	14.7	15.2		2011	19.7	19.1	19.2
1989	16.4	18.0	16.5		2012	14.4	13.6	14.1
1990	14.9	13.9	14.7		2013	12.7	10.2	12.4
1991	15.1	13.7	15.6		2014	12.0	11.7	11.8
1992	11.9	10.9	12.3		2015	12.1	11.7	12.1
1993	11.6	10.7	11.5		2016	12.1	11.0	11.3
1994	11.0	10.7	11.2		2017	12.5	11.5	12.1
1995	11.5	10.8	11.3					

Figure 3-2. Average Quarterly Exposure from Direct Radiation



The increase shown in 2010 reflects issues with the aging Panasonic TLD reader. The close agreement between the station groups supports the position that the plant is not contributing significantly to direct radiation in the environment. Figure 3-3 below provides a more detailed view of the 2017 values. The values for the special interest areas detailed below, indicate that Plant Hatch did not significantly contribute to direct radiation at those areas.

Figure 3-3. 2017 Average Exposure from Direct Radiation



3.3 Biological Media

Cs-137 was the only radionuclide analyzed across all three biological mediums. As indicated in Figure 3-4, the Cs-137 activity levels are below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

In accordance with Tables 2-1 and 2-2, milk samples are collected semi-monthly from Station 304 (the state prison dairy) which is a control station located more than 10 miles from the plant. Since 1989, efforts to locate a reliable milk sample source within five miles of the plant have been unsuccessful and the 2017 land census did not identify a milk animal within five miles of the plant.

Gamma isotopic (including I-131 and Cs-137) analyses were performed on each milk sample and there were no detectable results for gamma isotopes.

3.3.2 Vegetation

In accordance with Tables 2-1 and 2-2, vegetation samples are collected monthly for gamma isotopic analyses at two indicator locations near the site boundary (Stations 106 and 112) and at one control station located about 21 miles from the plant (Station 416). Cs-137 was not detected in any of indicator or control station samples. The man-made radionuclide Cs-137 is periodically identified in vegetation samples, and is generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima).

While Cs-137 and I-131 were periodically found in vegetation samples during pre-operation, the historical trends and the relationship between the indicator and control stations demonstrate that plant operations are having no adverse impact to the environment. The sample results have consistently been below the MDC and the RL for Cs-137 (80 and 2000 pCi/kg-wet, respectively).

Be-7 was also detected in vegetation during 2017. The indicator station average was 2.590 pCi/kg-wet. The control average was 1,967 pCi/kg-wet. The MDD between the two averages was 1,111 pCi/kg-wet, indicating that the difference between the two averages (623 pCi/kg-wet) is not statistically significant. This further illustrates the abundance of naturally-occurring Be-7 that appears in the surrounding environment.

During 2017, no other man-made gamma isotopes were detected in any Hatch REMP vegetation samples.

3.3.3 Fish

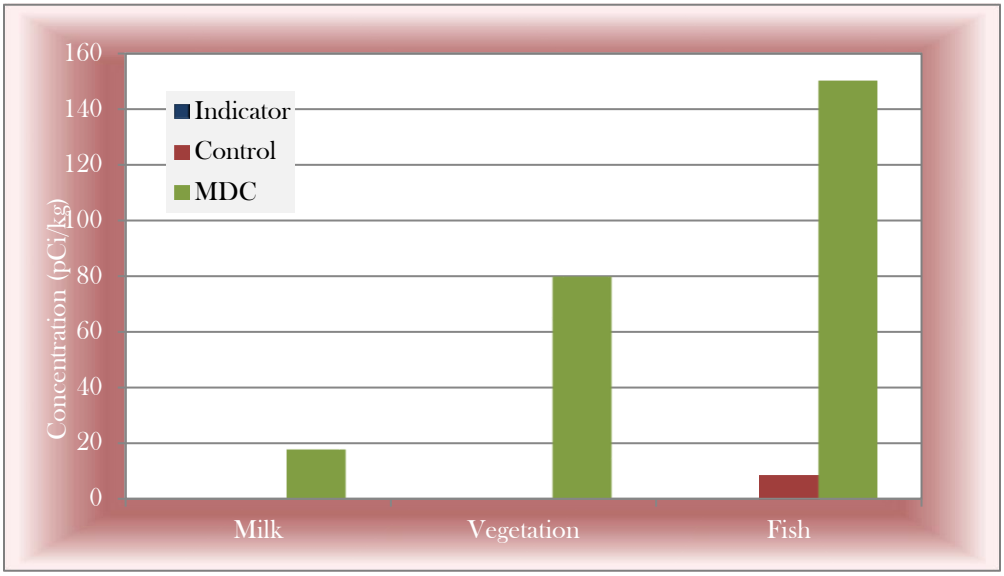
Fish samples were collected in accordance with the ODCM (as indicated in Table 2-1). For the semi-annual collections, the control location (Station 170) is located upriver of the plant intake structure, and the indicator location (Station 172) is located downriver of the plant discharge structure.

Cs-137 was detected in one sample at the control location at a value of 8.3 pCi/kg. The result is below the MDC of 150 pCi/kg and is not believed to be attributed to plant activity. Additionally, during the review of historical data, it was observed that Cs-137 is not typically detected in fish samples near Plant Hatch.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2017 biological media samples when compared to historical data. Figure 3-4 below, details the 2017 Cs-137 concentration compared to the MDC.

Figure 3-4. 2017 Biological Media Average Cs-137 Concentrations

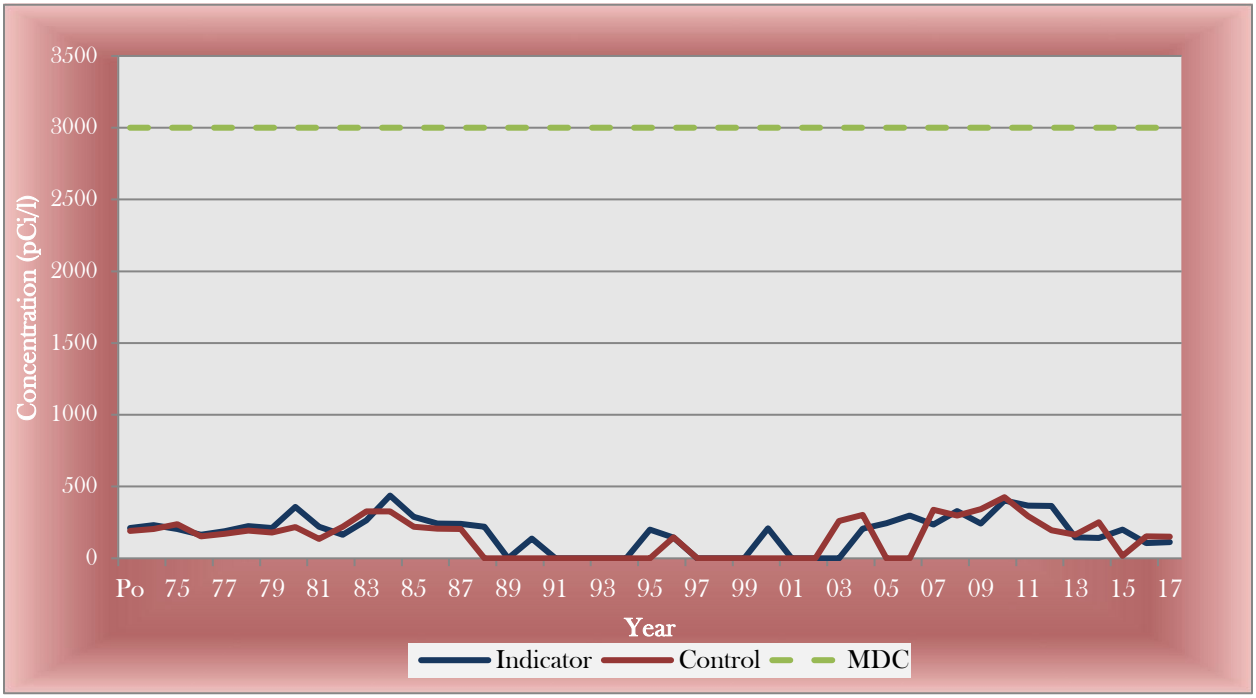


3.4 Surface Water

Composite river water samples are collected monthly at an upstream control location and at a downstream indicator location (shown on Map A-3 in Appendix A). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis is conducted on each monthly sample and the monthly aliquots are combined to form quarterly composite samples, which are analyzed for tritium.

As provided in Table 3-1, there were no positive results during 2017 from the gamma isotopic analysis of the river water samples. Also indicated in Table 3-1, the average tritium concentration found at the indicator station was 113 pCi/l which was 38 pCi/l less than the average at the control station (151 pCi/l). No MDD was calculated because the indicator average was less than the control. Historically, the relationship between the indicator and control stations has remained consistent. Figure 3-5 below details the 2017 historical average tritium concentrations in river water.

Figure 3-5. Average Annual Tritium Concentrations in River Water



3.5 Sediment

Sediment was collected along the shoreline of the Altamaha River in the spring and fall, at the upstream control station (No. 170) and the downstream indicator station (No. 172). A gamma isotopic analysis was performed on each sample. There were no man-made radionuclides detected in sediment samples, except for Cs-137, which is plotted along with biological media (Cs-137 across all detected mediums) in Section 3.3.4, and Figure 3-4. The Cs-137 average at the indicator stations was 47.5 pCi/kg which is 42.1 p/Ci/kg less than the control station average of 89.6 pCi/kg. No MDD was applied because the indicator is less than the control. The values for Cs-137 in sediment are both below the MDC of 180 pCi/kg.

3.6 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participates in an Interlaboratory Comparison Program (ICP) that satisfies the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment", February 1979. The ICP includes the required determinations (sample medium/radionuclide combinations) included in the REMP.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC)

materials traceable to the National Institute of Standards and Technology. The ICP is a third party blind testing program which provides a means to ensure independent checks are performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplies the crosscheck samples to GPCEL which performs routine laboratory analyses. Each of the specified analyses is performed three times.

The accuracy of each result is measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation is undertaken whenever the absolute value of the normalized deviation is greater than three or whenever the coefficient of variation is greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation is undertaken when the coefficient of variation exceeds the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limits

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15
* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).			

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2017 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/14/2017	64.15	64.4	2.94	1.08	7.02	-0.06
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/14/2017	74.01	69.4	1.70	1.06	5.87	1.06
Co-58	9/14/2017	98.46	93.2	3.05	1.10	6.01	0.89
Co-60	9/14/2017	211.62	209	3.04	1.53	4.15	0.30
Cr-51	9/14/2017	186.96	173	10.8	2.67	10.9	0.68
Cs-134	9/14/2017	160.43	160	3.44	1.54	4.82	0.06
Cs-137	9/14/2017	149.23	137	6.40	1.34	6.12	1.34
Fe-59	9/14/2017	108.23	100	8.51	1.03	9.38	0.72
Mn-54	9/14/2017	106.8	97.9	4.86	1.72	6.70	1.25
Zn-65	9/14/2017	170.91	147	6.19	2.02	6.56	2.13
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/14/2017	92.28	85.4	1.43	1.43	4.27	1.75
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	6/8/2017	168.15	155	5.78	2.60	6.45	1.21
Co-60	6/8/2017	214.34	191	7.33	3.19	5.45	2.00
Cr-51	6/8/2017	337.84	315	17.3	5.26	11.3	0.60
Cs-134	6/8/2017	216.43	188	7.71	3.14	5.30	2.48
Cs-137	6/8/2017	173.26	150	6.57	2.51	6.44	2.09
Fe-59	6/8/2017	126.48	115	5.58	1.92	9.39	0.97
I-131	6/8/2017	98.08	93.6	5.92	1.56	10.3	0.44
Mn-54	6/8/2017	199.41	172	6.35	2.87	5.95	2.31
Zn-65	6/8/2017	240.6	204	14.4	3.40	8.54	1.78
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	3/16/2017	316.8	280	9.48	4.67	4.76	2.44

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
	6/8/2017	302.4	270	6.51	4.51	3.34	3.21
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Ce-141	3/16/2017	152.59	145	7.32	2.43	8.12	0.61
Co-58	3/16/2017	159.58	150	7.44	2.51	7.29	0.82
Co-60	3/16/2017	192.12	183	7.22	3.06	5.92	0.80
Cr-51	3/16/2017	306.58	291	18.5	4.86	13.62	0.37
Cs-134	3/16/2017	131.24	120	6.49	2.01	6.77	1.27
Cs-137	3/16/2017	153.83	140	3.41	2.34	6.20	1.45
Fe-59	3/16/2017	133.31	129	11.3	2.16	11.23	0.29
I-131	3/16/2017	110.09	97.7	8.22	1.63	13.22	0.85
Mn-54	3/16/2017	177.8	165	6.87	2.75	6.66	1.08
Zn-65	3/16/2017	226.49	200	7.45	3.34	7.17	1.63
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	3/16/2017	10209.4	9980	64.6	167	2.25	1.00
	6/8/2017	14309	14000	78.2	233	2.05	1.05

3.7 Groundwater

To ensure compliance with NEI 07-07 (Industry Ground Water Protection Initiative – Final Guidance Document), Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs. No changes were made to the Groundwater Protection Program in 2017.

Plant Hatch maintains the following wells (Table 3-8), which are sampled at a frequency that satisfies the requirements of NEI 07-07. Table3-9 contains the results of the Groundwater Protection Program tritium results (in pCi/L). See Map A-4 in Appendix A for well locations.

Table 3-8. Groundwater Monitoring Locations

Well	Depth (Feet)	Monitoring Purpose
R1	82.9	Confined Aquifer Upgradient
R2	82.7	Confined Aquifer Near Diesel Generator Bldg.
R3	89.2	Confined Aquifer Near CST-1
R4	41	Dilution Line Near River Water Discharge Structure
R5	33.6	Between Subsurface Drain Lines Downgradient
R6	38.2	Between Subsurface Drain Lines Downgradient
NW2A	27	Water Table Near CST-2 Inside of Subsurface Drain
NW2B	27	Water Table Outside of Subsurface Drain
NW3A	26.5	Water Table Inside of Subsurface Drain
NW3B	25.3	Water Table Outside of Subsurface Drain
NW4A	27	Water Table Upgradient Inside of Subsurface Drain
NW5A	26.7	Water Table Upgradient Inside of Subsurface Drain
NW5B	26.3	Water Table Upgradient Outside of Subsurface Drain
NW6	27	Water Table Near Diesel Generator Bldg.
NW8	23	Water Table Near Diesel Generator Bldg.
NW9	26.1	Water Table Downgradient Inside of Subsurface Drain
NW10	26.2	Water Table Near CST-2
T3	18	Water Table Near Turbine Bldg.
T7	21.4	Water Table Near Diesel Generator Bldg.
T10	18.8	Water Table Near CST-1
T12	23.2	Water Table Near CST-1
T15	27.4	Water Table Near CST-1

Table 3-8. Groundwater Monitoring Locations

Well	Depth (Feet)	Monitoring Purpose
P15A	74.5	Confined Aquifer Near Turbine Bldg.
P15B	18	Water Table Near Turbine Bldg.
P17A	77	Confined Aquifer Near Diesel Generator Bldg.
P17B	14.8	Water Table Near Diesel Generator Bldg.
Deep Well 1	680	Backup Supply for Potable Water (infrequently used)
Deep Well 2	711	Plant Potable Water Supply
Deep Well 3	710	Potable Water Supply – Rec. Center, Firing Range, and Garage
GW-1[1]	19.6	Water Table downstream of CST-1 (outside CW tunnel boundary)
GW-2[1]	19.7	Water Table downstream of CST-1 (inside CW tunnel boundary)
GW-3[1]	21.0	Water Table downstream of CST-1 (outside CW tunnel boundary)

[1]Added to the Groundwater Protection Program

Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
R1	NDM	284	NDM	NDM
R2	NDM	NDM	NDM	NDM
R3	840	2,380	2,800	965
R4	NDM	NDM	NDM	NDM
R5	5,850	7,020	6,360	5,830
R6	NDM	223	283	NDM
NW2A	NDM	311	NDM	158
NW2B	NDM	NDM	202	NDM
NW3A	NDM	NDM	360	212
NW3B	NDM	261	NDM	NDM
NW4A	NDM	NDM	265	385
NW5A	NDM	NDM	NDM	NDM
NW5B	NDM	NDM	170	NDM
NW6	NDM	NDM	NDM	NDM
NW8	NDM	300	NDM	NS
NW9	NDM	388	168	281
NW10	5,520	3,750	2,020	2,160
T3	1,120	775	973	1,460
T7	212	295	NDM	430
T10	42,000	15,300	23,900	14,300
T12	23,400	21,500	22,300	21,600
T15	3,410	2,490	NS	NS
P15A	NDM	NDM	197	322

Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
P15B	1,260	1,340	1,890	NS
P17A	NDM	NDM	NDM	170
P17B	NDM	786	308	NS
Deep Well 1	NS – OOS	NS – OOS	NS – OOS	NS – OOS
Deep Well 2	NDM	NDM	222	NDM
Deep Well 3	NDM	NDM	171	NDM
GW-1	644	945	647	920
GW-2	NDM	163	301	NDM
GW-3	NDM	184	NDM	NDM

NS – No Sample, either due to field conditions (i.e. dry well) or pump OOS (out of service).
NDM – No Detectable Measurement

Plant Hatch has had historic tritium leaks into the perched aquifer from around the Unit 1 Condensate Storage Tank (CST), documented on 10 CFR 50.75(g) records. The tritium values in the wells that were found to be elevated above MDC were from previous CST and related piping leaks and are not considered present issues. Historic leaks and spills were reported in accordance with NEI 07-07.

4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted on November 14, 2017 to verify the locations of the nearest radiological receptor within five miles. The census results, shown in Table 4-1, indicated no major changes from 2016; therefore, no changes to the ODCM are required. Residents were located in each sector as identified below; no resident was identified closer than the current closest resident.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal	Beef Cattle	Garden
Distance in Miles to the Nearest Location in Each Sector				
N	2.0	None	None	3.8
NNE	2.9	None	None	None
NE	3.3	None	None	3.1
ENE	4.2	None	4.1	None
E	3.0	None	None	None
ESE	3.8	None	None	None
SE	1.8	None	2.4	None
SSE	2.0	None	3.6	2.2
S	1.0	None	2.5	1.0
SSW	1.3	None	2.1	2.5
SW	1.1	None	2.6	1.6
WSW	1.0	None	3.6	2.0
W	1.1	None	2.7	None
WNW	1.1	None	None	None
NW	3.6	None	4.5	None
NNW	1.8	None	2.8	2.9

4.2 Altamaha River Survey

A survey of the Altamaha River downstream of the plant for approximately 50 miles (approximately river miles 66.5 to 117.0) was conducted on December 18, 2017 to identify any new withdrawal of water from the river for drinking, irrigation, or construction purposes.

Irrigation equipment was identified at Clarke's Farm about ¾ mile downstream of Station #172 river water sampling station. The equipment is potentially used to irrigate crops; however, no samples were collected during the 2017 reporting year.

Correspondence from the Georgia Environmental Protection Division (EPD) on December 13, 2017, and December 19, 2017, indicated that no new agricultural or drinking water withdrawal permits had been issued at those respective times.

5 CONCLUSIONS

This report confirms SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;

2) Assess the radiological impact (if any) to the environment due to the operation of the HNP.

Based on the 2017 activities associated with the REMP, SNC offers the following conclusions:

- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any changes
- Analytical results were below reporting levels
- These values are consistent with historical results, indicating no adverse radiological environmental impacts associated with the operation of HNP

APPENDIX A

Maps

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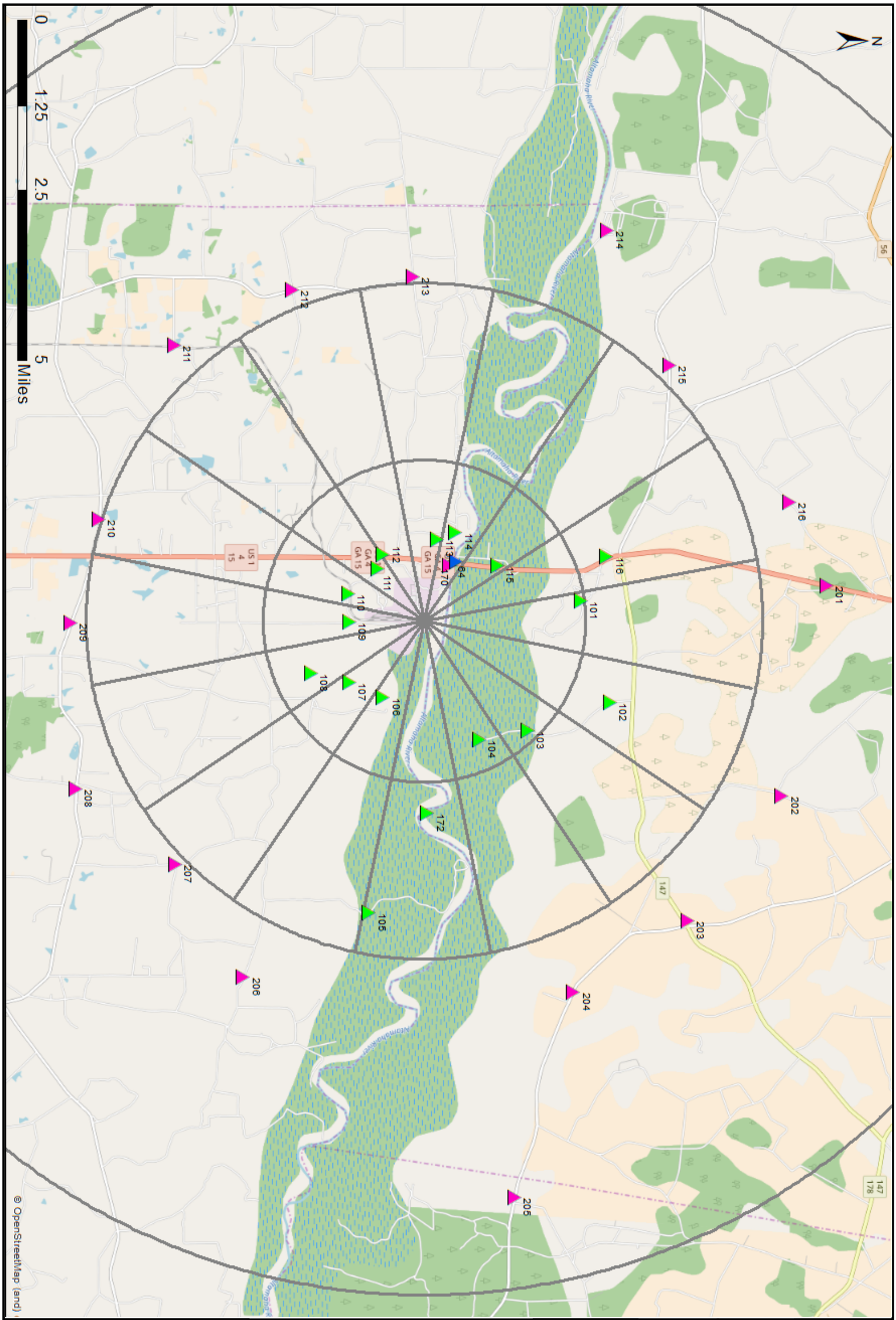

Legend:

Indicator Stations -

Control Stations -

Other Stations -

Edwin I. Hatch Nuclear Plant

2017 Annual Radiological Environmental Report

REMP Stations in Plant Vicinity

Southern Nuclear

Drawn by:	C. Groce	Appendix A
May 1, 2018		Map A-1

N

Vidalia
Alston
Hazlehurst Airport
Vidalia Regional Airport
Winge Farms Airport
Reidsville Municipal Airport
Tootle Airport
Claxton-Evans Coun Airport
Hearn Airport

0 3.75 7.5 15 Miles

Appendix A
Map A-2

Drawn by: C. Groce

April 30, 2016
May 1, 2018

Southern Nuclear

Edwin I. Hatch Nuclear Plant
2015 Annual Radiological Environmental Report
REMP Stations within 10 miles

Legend:
Indicator Stations -
Control Stations -
Other Stations -

N

R4

NW-8 R2 T6

T5 T7

NW-9

NW-6 P17B

NW7A P17A T-4

T2 T3 T-8

MN11 MN1d N5B

GW 3

N10B T16 T15 R5 R6

T14

P15B P15A

T10 T12 T13

T11 R3 NU2 GW2

NW-10

NW-2A

NW-5B NW-2B

NW-5A

N5B

NW-3A

R1 NW-4A NW-3B

P13B

0 250 500 1,000 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Edwin I. Hatch Nuclear Plant

2015 Annual Radiological Environmental Report

Facility Groundwater Wells

Legend:

GWPP Wells

Non-GWPP Wells

Southern Nuclear

Drawn by: C. Groce

April 30, 2016
May 1, 2018

Appendix A

Map A-3

APPENDIX B

Errata

There are no errata to include in the 2017 report.

APPENDIX C

Data

The following pages contain the individual data points from the 2017 reporting year. The units for the data points varies by media, as follows:

- Airborne Radioiodine and Particulates/Water/Milk – picocuries/liter (pCi/l)
- Sediment/Vegetation/Fish – picocuries/kilogram (pCi/kg)
- Direct Radiation – millirem (mR)

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Sample ID	Collect Date	Loc. ID	Nuclide	Results	95% CL	MDA	Matrix
107706001	1/3/2017	103	J-131	0	0	.01558	Air Cartridge
107879001	1/9/2017	103	J-131	0	0	.01251	Air Cartridge
107969001	1/16/2017	103	J-131	0	0	.02892	Air Cartridge
108203001	1/30/2017	103	J-131	0	0	.01081	Air Cartridge
108351001	2/6/2017	103	J-131	0	0	.01963	Air Cartridge
108444001	2/13/2017	103	J-131	0	0	.01212	Air Cartridge
108544001	2/20/2017	103	J-131	0	0	.01201	Air Cartridge
108632001	2/27/2017	103	J-131	0	0	.01693	Air Cartridge
108734001	3/6/2017	103	J-131	0	0	.02164	Air Cartridge
108836001	3/13/2017	103	J-131	0	0	.01197	Air Cartridge
108975001	3/20/2017	103	J-131	0	0	.01244	Air Cartridge
109070001	3/27/2017	103	J-131	0	0	.009804	Air Cartridge
109188001	4/3/2017	103	J-131	0	0	.02147	Air Cartridge
109318001	4/10/2017	103	J-131	0	0	.01724	Air Cartridge
109438001	4/17/2017	103	J-131	0	0	.01943	Air Cartridge
109562001	4/24/2017	103	J-131	0	0	.01313	Air Cartridge
109668001	5/1/2017	103	J-131	0	0	.01376	Air Cartridge
109804001	5/8/2017	103	J-131	0	0	.01214	Air Cartridge
109925001	5/15/2017	103	J-131	0	0	.01769	Air Cartridge
110043001	5/22/2017	103	J-131	0	0	.02413	Air Cartridge
110179001	5/30/2017	103	J-131	0	0	.01725	Air Cartridge
110283001	6/5/2017	103	J-131	0	0	.01445	Air Cartridge
110399001	6/12/2017	103	J-131	0	0	.01116	Air Cartridge
110542001	6/19/2017	103	J-131	0	0	.0216	Air Cartridge
110672001	6/26/2017	103	J-131	0	0	.01926	Air Cartridge
110815001	7/6/2017	103	J-131	0	0	.009974	Air Cartridge
110879001	7/10/2017	103	J-131	0	0	.05557	Air Cartridge
111046001	7/17/2017	103	J-131	0	0	.0132	Air Cartridge
111152001	7/24/2017	103	J-131	0	0	.02232	Air Cartridge
111270001	7/31/2017	103	J-131	0	0	.01153	Air Cartridge
111398001	8/7/2017	103	J-131	0	0	.01801	Air Cartridge
111526001	8/14/2017	103	J-131	0	0	.01803	Air Cartridge
111708001	8/22/2017	103	J-131	0	0	.01097	Air Cartridge
111814001	8/28/2017	103	J-131	0	0	.03038	Air Cartridge
111916001	9/5/2017	103	J-131	0	0	.01707	Air Cartridge
111990001	9/13/2017	103	J-131	0	0	.01953	Air Cartridge
112178001	9/18/2017	103	J-131	0	0	.02646	Air Cartridge
112323001	9/25/2017	103	J-131	0	0	.01975	Air Cartridge
112452001	10/2/2017	103	J-131	0	0	.01661	Air Cartridge
112566001	10/9/2017	103	J-131	0	0	.01367	Air Cartridge
112699001	10/17/2017	103	J-131	0	0	.01249	Air Cartridge
112764001	10/23/2017	103	J-131	0	0	.01735	Air Cartridge
112882001	10/30/2017	103	J-131	0	0	.01422	Air Cartridge
113102001	11/14/2017	103	J-131	0	0	.01485	Air Cartridge
113160001	11/21/2017	103	J-131	0	0	.01318	Air Cartridge
113266001	11/28/2017	103	J-131	0	0	.0218	Air Cartridge

113367001	12/5/2017	103	J-131	0	0	.02583	Air Cartridge
113429001	12/12/2017	103	J-131	0	0	.01782	Air Cartridge
113543001	12/19/2017	103	J-131	0	0	.02079	Air Cartridge
113561001	12/27/2017	103	J-131	0	0	.01247	Air Cartridge
107706002	1/3/2017	107	J-131	0	0	.01808	Air Cartridge
107879002	1/9/2017	107	J-131	0	0	.03266	Air Cartridge
107969002	1/16/2017	107	J-131	0	0	.0107	Air Cartridge
108096001	1/23/2017	107	J-131	0	0	.01874	Air Cartridge
108203002	1/30/2017	107	J-131	0	0	.009185	Air Cartridge
108351002	2/6/2017	107	J-131	0	0	.01217	Air Cartridge
108444002	2/13/2017	107	J-131	0	0	.01223	Air Cartridge
108544002	2/20/2017	107	J-131	0	0	.01761	Air Cartridge
108632002	2/27/2017	107	J-131	0	0	.009713	Air Cartridge
108734002	3/6/2017	107	J-131	0	0	.01465	Air Cartridge
108836002	3/13/2017	107	J-131	0	0	.00982	Air Cartridge
108975002	3/20/2017	107	J-131	0	0	.01343	Air Cartridge
109070002	3/27/2017	107	J-131	0	0	.01289	Air Cartridge
109188002	4/3/2017	107	J-131	0	0	.008952	Air Cartridge
109318002	4/10/2017	107	J-131	0	0	.01612	Air Cartridge
109438002	4/17/2017	107	J-131	0	0	.0126	Air Cartridge
109562002	4/24/2017	107	J-131	0	0	.01342	Air Cartridge
109668002	5/1/2017	107	J-131	0	0	.02147	Air Cartridge
109804002	5/8/2017	107	J-131	0	0	.009898	Air Cartridge
109925002	5/15/2017	107	J-131	0	0	.015	Air Cartridge
110043002	5/22/2017	107	J-131	0	0	.01215	Air Cartridge
110179002	5/30/2017	107	J-131	0	0	.01821	Air Cartridge
110283002	6/5/2017	107	J-131	0	0	.03314	Air Cartridge
110399002	6/12/2017	107	J-131	0	0	.01464	Air Cartridge
110542002	6/19/2017	107	J-131	0	0	.01007	Air Cartridge
110672002	6/26/2017	107	J-131	0	0	.02214	Air Cartridge
110815002	7/5/2017	107	J-131	0	0	.01653	Air Cartridge
110879002	7/10/2017	107	J-131	0	0	.03543	Air Cartridge
111046002	7/17/2017	107	J-131	0	0	.0136	Air Cartridge
111152002	7/24/2017	107	J-131	0	0	.01284	Air Cartridge
111270002	7/31/2017	107	J-131	0	0	.01551	Air Cartridge
111398002	8/7/2017	107	J-131	0	0	.01578	Air Cartridge
111526002	8/14/2017	107	J-131	0	0	.01452	Air Cartridge
111708002	8/22/2017	107	J-131	0	0	.01699	Air Cartridge
111814002	8/28/2017	107	J-131	0	0	.01447	Air Cartridge
111916002	9/5/2017	107	J-131	0	0	.01588	Air Cartridge
111990002	9/13/2017	107	J-131	0	0	.01781	Air Cartridge
112178002	9/18/2017	107	J-131	0	0	.03108	Air Cartridge
112323002	9/25/2017	107	J-131	0	0	.01713	Air Cartridge
112452002	10/2/2017	107	J-131	0	0	.01172	Air Cartridge
112566002	10/9/2017	107	J-131	0	0	.01077	Air Cartridge
112699002	10/17/2017	107	J-131	0	0	.008216	Air Cartridge
112764002	10/23/2017	107	J-131	0	0	.01749	Air Cartridge

112882002	10/30/2017	107	J-131	0	0	.01889	Air Cartridge
112998001	11/6/2017	107	J-131	0	0	.02262	Air Cartridge
113102002	11/14/2017	107	J-131	0	0	.01593	Air Cartridge
113160002	11/21/2017	107	J-131	0	0	.009876	Air Cartridge
113266002	11/28/2017	107	J-131	0	0	.01797	Air Cartridge
113367002	12/5/2017	107	J-131	0	0	.01534	Air Cartridge
113429002	12/12/2017	107	J-131	0	0	.01001	Air Cartridge
113543002	12/19/2017	107	J-131	0	0	.01204	Air Cartridge
113561002	12/27/2017	107	J-131	0	0	.01031	Air Cartridge
107706003	1/3/2017	112	J-131	0	0	.009004	Air Cartridge
107879003	1/9/2017	112	J-131	0	0	.01435	Air Cartridge
107969003	1/16/2017	112	J-131	0	0	.009424	Air Cartridge
108096002	1/23/2017	112	J-131	0	0	.0298	Air Cartridge
108203003	1/30/2017	112	J-131	0	0	.01688	Air Cartridge
108351003	2/6/2017	112	J-131	0	0	.01124	Air Cartridge
108444003	2/13/2017	112	J-131	0	0	.01433	Air Cartridge
108544003	2/20/2017	112	J-131	0	0	.01404	Air Cartridge
108632003	2/27/2017	112	J-131	0	0	.01101	Air Cartridge
108734003	3/6/2017	112	J-131	0	0	.01905	Air Cartridge
108836003	3/13/2017	112	J-131	0	0	.01434	Air Cartridge
108975003	3/20/2017	112	J-131	0	0	.01214	Air Cartridge
109070003	3/27/2017	112	J-131	0	0	.01669	Air Cartridge
109188003	4/3/2017	112	J-131	0	0	.01992	Air Cartridge
109318003	4/10/2017	112	J-131	0	0	.01124	Air Cartridge
109438003	4/17/2017	112	J-131	0	0	.01084	Air Cartridge
109562003	4/24/2017	112	J-131	0	0	.01164	Air Cartridge
109668003	5/1/2017	112	J-131	0	0	.01277	Air Cartridge
109804003	5/8/2017	112	J-131	0	0	.0188	Air Cartridge
109925003	5/15/2017	112	J-131	0	0	.01359	Air Cartridge
110043003	5/22/2017	112	J-131	0	0	.0142	Air Cartridge
110179003	5/30/2017	112	J-131	0	0	.007357	Air Cartridge
110283003	6/5/2017	112	J-131	0	0	.01332	Air Cartridge
110399003	6/12/2017	112	J-131	0	0	.01909	Air Cartridge
110542003	6/19/2017	112	J-131	0	0	.008234	Air Cartridge
110672003	6/26/2017	112	J-131	0	0	.01123	Air Cartridge
110815003	7/5/2017	112	J-131	0	0	.008724	Air Cartridge
110879003	7/10/2017	112	J-131	0	0	.01695	Air Cartridge
111046003	7/17/2017	112	J-131	0	0	.009307	Air Cartridge
111152003	7/24/2017	112	J-131	0	0	.01933	Air Cartridge
111270003	7/31/2017	112	J-131	0	0	.01416	Air Cartridge
111398003	8/7/2017	112	J-131	0	0	.01169	Air Cartridge
111526003	8/14/2017	112	J-131	0	0	.0109	Air Cartridge
111708003	8/22/2017	112	J-131	0	0	.01032	Air Cartridge
111814003	8/28/2017	112	J-131	0	0	.01689	Air Cartridge
111916003	9/5/2017	112	J-131	0	0	.007841	Air Cartridge
111990003	9/13/2017	112	J-131	0	0	.01121	Air Cartridge
112178003	9/18/2017	112	J-131	0	0	.02403	Air Cartridge

112323003	9/25/2017	112	J-131	0	0	.01161	Air Cartridge
112452003	10/2/2017	112	J-131	0	0	.008826	Air Cartridge
112566003	10/9/2017	112	J-131				Air Cartridge
112699003	10/17/2017	112	J-131	0	0	.01497	Air Cartridge
112764003	10/23/2017	112	J-131	0	0	.0214	Air Cartridge
112882003	10/30/2017	112	J-131	0	0	.01083	Air Cartridge
112998002	11/6/2017	112	J-131	0	0	.01533	Air Cartridge
113102003	11/14/2017	112	J-131	0	0	.009784	Air Cartridge
113160003	11/21/2017	112	J-131	0	0	.02055	Air Cartridge
113266003	11/28/2017	112	J-131	0	0	.03273	Air Cartridge
113367003	12/5/2017	112	J-131	0	0	.01812	Air Cartridge
113429003	12/12/2017	112	J-131	0	0	.01326	Air Cartridge
113543003	12/19/2017	112	J-131	0	0	.01086	Air Cartridge
113561003	12/27/2017	112	J-131	0	0	.01216	Air Cartridge
107706004	1/3/2017	116	J-131	0	0	.01245	Air Cartridge
107879004	1/9/2017	116	J-131	0	0	.01573	Air Cartridge
107969004	1/16/2017	116	J-131	0	0	.01675	Air Cartridge
108096003	1/23/2017	116	J-131	0	0	.01254	Air Cartridge
108203004	1/30/2017	116	J-131	0	0	.02167	Air Cartridge
108351004	2/6/2017	116	J-131	0	0	.01215	Air Cartridge
108444004	2/13/2017	116	J-131	0	0	.0252	Air Cartridge
108544004	2/20/2017	116	J-131	0	0	.01222	Air Cartridge
108632004	2/27/2017	116	J-131	0	0	.01724	Air Cartridge
108734004	3/6/2017	116	J-131	0	0	.02595	Air Cartridge
108836004	3/13/2017	116	J-131	0	0	.016	Air Cartridge
108975004	3/20/2017	116	J-131	0	0	.01479	Air Cartridge
109070004	3/27/2017	116	J-131	0	0	.01782	Air Cartridge
109188004	4/3/2017	116	J-131	0	0	.009	Air Cartridge
109318004	4/10/2017	116	J-131	0	0	.0123	Air Cartridge
109438004	4/17/2017	116	J-131	0	0	.008212	Air Cartridge
109562004	4/24/2017	116	J-131	0	0	.01375	Air Cartridge
109668004	5/1/2017	116	J-131	0	0	.01564	Air Cartridge
109804004	5/8/2017	116	J-131	0	0	.01774	Air Cartridge
109925004	5/15/2017	116	J-131	0	0	.01252	Air Cartridge
110043004	5/22/2017	116	J-131	0	0	.02177	Air Cartridge
110179004	5/30/2017	116	J-131	0	0	.01094	Air Cartridge
110283004	6/5/2017	116	J-131	0	0	.02813	Air Cartridge
110399004	6/12/2017	116	J-131	0	0	.01168	Air Cartridge
110542004	6/19/2017	116	J-131	0	0	.01727	Air Cartridge
110672004	6/26/2017	116	J-131	0	0	.01255	Air Cartridge
110815004	7/5/2017	116	J-131	0	0	.0112	Air Cartridge
110879004	7/10/2017	116	J-131	0	0	.01984	Air Cartridge
111046004	7/17/2017	116	J-131	0	0	.01919	Air Cartridge
111152004	7/24/2017	116	J-131	0	0	.02117	Air Cartridge
111270004	7/31/2017	116	J-131	0	0	.008366	Air Cartridge
111398004	8/7/2017	116	J-131	0	0	.01634	Air Cartridge
111526004	8/14/2017	116	J-131	0	0	.01441	Air Cartridge

111708004	8/22/2017	116	J-131	0	0	.01661	Air Cartridge
111814004	8/28/2017	116	J-131	0	0	.01889	Air Cartridge
111916004	9/5/2017	116	J-131	0	0	.0138	Air Cartridge
111990004	9/13/2017	116	J-131	0	0	.01491	Air Cartridge
112178004	9/18/2017	116	J-131	0	0	.01435	Air Cartridge
112323004	9/25/2017	116	J-131	0	0	.01238	Air Cartridge
112452004	10/2/2017	116	J-131	0	0	.012	Air Cartridge
112566004	10/9/2017	116	J-131	0	0	.02498	Air Cartridge
112699004	10/17/2017	116	J-131	0	0	.004764	Air Cartridge
112764004	10/23/2017	116	J-131	0	0	.02533	Air Cartridge
112882004	10/30/2017	116	J-131	0	0	.02339	Air Cartridge
112998003	11/6/2017	116	J-131	0	0	.02912	Air Cartridge
113102004	11/14/2017	116	J-131	0	0	.02108	Air Cartridge
113160004	11/21/2017	116	J-131	0	0	.01152	Air Cartridge
113266004	11/28/2017	116	J-131	0	0	.0126	Air Cartridge
113367004	12/5/2017	116	J-131	0	0	.01078	Air Cartridge
113429004	12/12/2017	116	J-131	0	0	.02943	Air Cartridge
113543004	12/19/2017	116	J-131	0	0	.005335	Air Cartridge
113561004	12/27/2017	116	J-131	0	0	.02059	Air Cartridge
107706005	1/3/2017	304	J-131	0	0	.01253	Air Cartridge
107879005	1/9/2017	304	J-131	0	0	.01544	Air Cartridge
107969005	1/16/2017	304	J-131	0	0	.01345	Air Cartridge
108096004	1/23/2017	304	J-131	0	0	.01571	Air Cartridge
108203005	1/30/2017	304	J-131	0	0	.009267	Air Cartridge
108351005	2/6/2017	304	J-131	0	0	.01698	Air Cartridge
108444005	2/13/2017	304	J-131	0	0	.01719	Air Cartridge
108544005	2/20/2017	304	J-131	0	0	.01792	Air Cartridge
108632005	2/27/2017	304	J-131	0	0	.01205	Air Cartridge
108734005	3/6/2017	304	J-131	0	0	.01584	Air Cartridge
108836005	3/13/2017	304	J-131	0	0	.01542	Air Cartridge
108975005	3/20/2017	304	J-131	0	0	.01927	Air Cartridge
109070005	3/27/2017	304	J-131	0	0	.01242	Air Cartridge
109188005	4/3/2017	304	J-131	0	0	.01796	Air Cartridge
109318005	4/10/2017	304	J-131	0	0	.012	Air Cartridge
109438005	4/17/2017	304	J-131	0	0	.01185	Air Cartridge
109562005	4/24/2017	304	J-131	0	0	.01483	Air Cartridge
109668005	5/1/2017	304	J-131	0	0	.01178	Air Cartridge
109804005	5/8/2017	304	J-131	0	0	.0198	Air Cartridge
109925005	5/15/2017	304	J-131	0	0	.01731	Air Cartridge
110043005	5/22/2017	304	J-131	0	0	.02304	Air Cartridge
110179005	5/30/2017	304	J-131	0	0	.01016	Air Cartridge
110283005	6/5/2017	304	J-131	0	0	.02432	Air Cartridge
110399005	6/12/2017	304	J-131	0	0	.01421	Air Cartridge
110542005	6/19/2017	304	J-131	0	0	.01288	Air Cartridge
110672005	6/26/2017	304	J-131	0	0	.01189	Air Cartridge
110815005	7/6/2017	304	J-131	0	0	.01086	Air Cartridge
110879005	7/10/2017	304	J-131	0	0	.016	Air Cartridge

111046005	7/17/2017	304	J-131	0	0	.01319	Air Cartridge
111152005	7/24/2017	304	J-131	0	0	.02309	Air Cartridge
111270005	7/31/2017	304	J-131	0	0	.01201	Air Cartridge
111398005	8/7/2017	304	J-131	0	0	.01953	Air Cartridge
111526005	8/14/2017	304	J-131	0	0	.01434	Air Cartridge
111708005	8/22/2017	304	J-131	0	0	.01732	Air Cartridge
111814005	8/28/2017	304	J-131	0	0	.01409	Air Cartridge
111916005	9/5/2017	304	J-131	0	0	.01067	Air Cartridge
111990005	9/13/2017	304	J-131	0	0	.0098	Air Cartridge
112178005	9/18/2017	304	J-131	0	0	.01691	Air Cartridge
112323005	9/25/2017	304	J-131	0	0	.009365	Air Cartridge
112452005	10/2/2017	304	J-131	0	0	.008998	Air Cartridge
112566005	10/9/2017	304	J-131	0	0	.01538	Air Cartridge
112699005	10/17/2017	304	J-131	0	0	.01502	Air Cartridge
112764005	10/23/2017	304	J-131	0	0	.01993	Air Cartridge
112882005	10/30/2017	304	J-131	0	0	.01153	Air Cartridge
112998004	11/6/2017	304	J-131	0	0	.01269	Air Cartridge
113102005	11/14/2017	304	J-131	0	0	.0133	Air Cartridge
113160005	11/21/2017	304	J-131	0	0	.02197	Air Cartridge
113266005	11/28/2017	304	J-131	0	0	.01255	Air Cartridge
113367005	12/5/2017	304	J-131	0	0	.01283	Air Cartridge
113429005	12/12/2017	304	J-131	0	0	.02204	Air Cartridge
113543005	12/19/2017	304	J-131	0	0	.02122	Air Cartridge
113561005	12/27/2017	304	J-131	0	0	.01656	Air Cartridge
107706006	1/3/2017	309	J-131	0	0	.01856	Air Cartridge
107879006	1/9/2017	309	J-131	0	0	.01594	Air Cartridge
107969006	1/16/2017	309	J-131	0	0	.02672	Air Cartridge
108096005	1/23/2017	309	J-131	0	0	.01645	Air Cartridge
108203006	1/30/2017	309	J-131	0	0	.01141	Air Cartridge
108351006	2/6/2017	309	J-131	0	0	.01272	Air Cartridge
108444006	2/13/2017	309	J-131	0	0	.02496	Air Cartridge
108544006	2/20/2017	309	J-131	0	0	.02286	Air Cartridge
108632006	2/27/2017	309	J-131	0	0	.01262	Air Cartridge
108734006	3/6/2017	309	J-131	0	0	.01315	Air Cartridge
108836006	3/13/2017	309	J-131	0	0	.01605	Air Cartridge
108975006	3/20/2017	309	J-131	0	0	.01369	Air Cartridge
109070006	3/27/2017	309	J-131	0	0	.01304	Air Cartridge
109188006	4/3/2017	309	J-131	0	0	.0058	Air Cartridge
109318006	4/10/2017	309	J-131	0	0	.01007	Air Cartridge
109438006	4/17/2017	309	J-131	0	0	.009454	Air Cartridge
109562006	4/24/2017	309	J-131	0	0	.01311	Air Cartridge
109668006	5/1/2017	309	J-131	0	0	.0149	Air Cartridge
109804006	5/8/2017	309	J-131	0	0	.01845	Air Cartridge
109925006	5/15/2017	309	J-131	0	0	.01129	Air Cartridge
110043006	5/22/2017	309	J-131	0	0	.0174	Air Cartridge
110179006	5/30/2017	309	J-131	0	0	.009869	Air Cartridge
110283006	6/5/2017	309	J-131	0	0	.01524	Air Cartridge

110399006	6/12/2017	309	J-131	0	0	.01136	Air Cartridge
110542006	6/19/2017	309	J-131	0	0	.01236	Air Cartridge
110672006	6/26/2017	309	J-131	0	0	.01208	Air Cartridge
110815006	7/6/2017	309	J-131	0	0	.01456	Air Cartridge
110879006	7/10/2017	309	J-131	0	0	.03881	Air Cartridge
111046006	7/17/2017	309	J-131	0	0	.01335	Air Cartridge
111152006	7/24/2017	309	J-131	0	0	.01577	Air Cartridge
111270006	7/31/2017	309	J-131	0	0	.0123	Air Cartridge
111398006	8/7/2017	309	J-131	0	0	.01966	Air Cartridge
111526006	8/14/2017	309	J-131	0	0	.01422	Air Cartridge
111708006	8/22/2017	309	J-131	0	0	.01308	Air Cartridge
111814006	8/28/2017	309	J-131	0	0	.01424	Air Cartridge
111916006	9/5/2017	309	J-131	0	0	.01188	Air Cartridge
111990006	9/13/2017	309	J-131	0	0	.01219	Air Cartridge
112178006	9/18/2017	309	J-131	0	0	.0123	Air Cartridge
112323006	9/25/2017	309	J-131	0	0	.0158	Air Cartridge
112452006	10/2/2017	309	J-131	0	0	.01126	Air Cartridge
112566006	10/9/2017	309	J-131				Air Cartridge
112699006	10/17/2017	309	J-131	0	0	.01521	Air Cartridge
112764006	10/23/2017	309	J-131	0	0	.01475	Air Cartridge
112882006	10/30/2017	309	J-131	0	0	.009013	Air Cartridge
112998005	11/6/2017	309	J-131	0	0	.01009	Air Cartridge
113102006	11/14/2017	309	J-131	0	0	.01866	Air Cartridge
113160006	11/21/2017	309	J-131	0	0	.02269	Air Cartridge
113266006	11/28/2017	309	J-131	0	0	.01984	Air Cartridge
113367006	12/5/2017	309	J-131	0	0	.01547	Air Cartridge
113429006	12/12/2017	309	J-131	0	0	.01006	Air Cartridge
113543006	12/19/2017	309	J-131	0	0	.009487	Air Cartridge
113561006	12/27/2017	309	J-131	0	0	.01949	Air Cartridge
107705001	1/3/2017	103	GROSSBETA	.01109	.003637	.01414	Air Filter
107877001	1/9/2017	103	GROSSBETA	.01619	.004548	.02001	Air Filter
107968001	1/16/2017	103	GROSSBETA	.01388	.003754	.01704	Air Filter
108202001	1/30/2017	103	GROSSBETA	.01319	.002724	.01547	Air Filter
108350001	2/6/2017	103	GROSSBETA	.02632	.005	.03052	Air Filter
108443001	2/13/2017	103	GROSSBETA	.01786	.004322	.02148	Air Filter
108543001	2/20/2017	103	GROSSBETA	.01997	.004601	.02383	Air Filter
108631001	2/27/2017	103	GROSSBETA	.01624	.004158	.01973	Air Filter
108733001	3/6/2017	103	GROSSBETA	.01932	.004493	.02309	Air Filter
108835001	3/13/2017	103	GROSSBETA	.02115	.004579	.02499	Air Filter
108968001	3/20/2017	103	GROSSBETA	.01975	.00452	.02354	Air Filter
109069001	3/27/2017	103	GROSSBETA	.0217	.004779	.02571	Air Filter
109187001	4/3/2017	103	GROSSBETA	.02061	.004596	.02446	Air Filter
109317001	4/10/2017	103	GROSSBETA	.01291	.003765	.01607	Air Filter
109436001	4/17/2017	103	GROSSBETA	.02213	.004792	.02615	Air Filter
109561001	4/24/2017	103	GROSSBETA	.01854	.004398	.02223	Air Filter
109667001	5/1/2017	103	GROSSBETA	.01618	.004169	.01968	Air Filter
109803001	5/8/2017	103	GROSSBETA	.02127	.004652	.02518	Air Filter

109924001	5/15/2017	103	GROSSBETA	.02496	.005041	.02919	Air Filter
110042001	5/22/2017	103	GROSSBETA	.01939	.004375	.02306	Air Filter
110178001	5/30/2017	103	GROSSBETA	.01732	.003965	.02065	Air Filter
110282001	6/5/2017	103	GROSSBETA	.01762	.004816	.02167	Air Filter
110398001	6/12/2017	103	GROSSBETA	.01424	.003866	.01748	Air Filter
110541001	6/19/2017	103	GROSSBETA	.01786	.004414	.02157	Air Filter
110671001	6/26/2017	103	GROSSBETA	.01132	.003559	.01431	Air Filter
110814001	7/6/2017	103	GROSSBETA	.01792	.003483	.02084	Air Filter
110878001	7/10/2017	103	GROSSBETA	.009375	.004872	.01346	Air Filter
111045001	7/17/2017	103	GROSSBETA	.007958	.003083	.01055	Air Filter
111151001	7/24/2017	103	GROSSBETA	.01157	.003609	.0146	Air Filter
111269001	7/31/2017	103	GROSSBETA	.01365	.003786	.01682	Air Filter
111397001	8/7/2017	103	GROSSBETA	.01774	.004302	.02135	Air Filter
111523001	8/14/2017	103	GROSSBETA	.01092	.003519	.01387	Air Filter
111707001	8/22/2017	103	GROSSBETA	.01469	.004155	.01817	Air Filter
111813001	8/28/2017	103	GROSSBETA	.01989	.005002	.02409	Air Filter
111915001	9/5/2017	103	GROSSBETA	.01429	.003665	.01736	Air Filter
111989001	9/13/2017	103	GROSSBETA	.01919	.004893	.0233	Air Filter
112177001	9/18/2017	103	GROSSBETA	.03066	.009526	.03865	Air Filter
112322001	9/25/2017	103	GROSSBETA	.03762	.005922	.04259	Air Filter
112451001	10/2/2017	103	GROSSBETA	.02193	.004582	.02577	Air Filter
112565001	10/9/2017	103	GROSSBETA	.01468	.003163	.01733	Air Filter
112698001	10/17/2017	103	GROSSBETA	.01286	.002499	.01495	Air Filter
112762001	10/23/2017	103	GROSSBETA	.0179	.003489	.02082	Air Filter
112881001	10/30/2017	103	GROSSBETA	.0197	.003284	.02246	Air Filter
113101001	11/14/2017	103	GROSSBETA	.02732	.003435	.03021	Air Filter
113159001	11/21/2017	103	GROSSBETA	.03151	.004126	.03497	Air Filter
113265001	11/28/2017	103	GROSSBETA	.03572	.004129	.03919	Air Filter
113366001	12/5/2017	103	GROSSBETA	.03661	.00424	.04017	Air Filter
113428001	12/12/2017	103	GROSSBETA	.0249	.003575	.0279	Air Filter
113542001	12/19/2017	103	GROSSBETA	.03179	.003917	.03507	Air Filter
113560001	12/27/2017	103	GROSSBETA	.02215	.003198	.02483	Air Filter
107705002	1/3/2017	107	GROSSBETA	.01837	.004521	.02216	Air Filter
107877002	1/9/2017	107	GROSSBETA	.02324	.005298	.02769	Air Filter
107968002	1/16/2017	107	GROSSBETA	.009551	.003377	.01238	Air Filter
108095001	1/23/2017	107	GROSSBETA	.01031	.003679	.0134	Air Filter
108202002	1/30/2017	107	GROSSBETA	.02063	.005068	.02489	Air Filter
108350002	2/6/2017	107	GROSSBETA	.02059	.00454	.0244	Air Filter
108443002	2/13/2017	107	GROSSBETA	.01959	.004514	.02338	Air Filter
108543002	2/20/2017	107	GROSSBETA	.02298	.005001	.02718	Air Filter
108631002	2/27/2017	107	GROSSBETA	.01577	.004253	.01934	Air Filter
108733002	3/6/2017	107	GROSSBETA	.02187	.00486	.02595	Air Filter
108835002	3/13/2017	107	GROSSBETA	.01617	.004176	.01968	Air Filter
108968002	3/20/2017	107	GROSSBETA	.02049	.004628	.02437	Air Filter
109069002	3/27/2017	107	GROSSBETA	.02747	.005391	.03199	Air Filter
109187002	4/3/2017	107	GROSSBETA	.0228	.004845	.02686	Air Filter
109317002	4/10/2017	107	GROSSBETA	.01625	.004269	.01983	Air Filter

109436002	4/17/2017	107	GROSSBETA	.02259	.005739	.02741	Air Filter
109561002	4/24/2017	107	GROSSBETA	.02267	.004852	.02674	Air Filter
109667002	5/1/2017	107	GROSSBETA	.01967	.004594	.02353	Air Filter
109803002	5/8/2017	107	GROSSBETA	.01755	.004371	.02122	Air Filter
109924002	5/15/2017	107	GROSSBETA	.0276	.005305	.03205	Air Filter
110042002	5/22/2017	107	GROSSBETA	.02226	.004753	.02625	Air Filter
110178002	5/30/2017	107	GROSSBETA	.01677	.003944	.02008	Air Filter
110282002	6/5/2017	107	GROSSBETA	.01759	.004898	.0217	Air Filter
110398002	6/12/2017	107	GROSSBETA	.01174	.003648	.0148	Air Filter
110541002	6/19/2017	107	GROSSBETA	.01463	.004114	.01808	Air Filter
110671002	6/26/2017	107	GROSSBETA	.009065	.003371	.01189	Air Filter
110814002	7/5/2017	107	GROSSBETA	.02149	.003988	.02484	Air Filter
110878002	7/10/2017	107	GROSSBETA	.0121	.004862	.01618	Air Filter
111045002	7/17/2017	107	GROSSBETA	.005179	.002774	.007507	Air Filter
111151002	7/24/2017	107	GROSSBETA	.01422	.003944	.01753	Air Filter
111269002	7/31/2017	107	GROSSBETA	.01331	.003841	.01653	Air Filter
111397002	8/7/2017	107	GROSSBETA	.01429	.004003	.01765	Air Filter
111523002	8/14/2017	107	GROSSBETA	.01016	.003552	.01314	Air Filter
111707002	8/22/2017	107	GROSSBETA	.01711	.00441	.02081	Air Filter
111813002	8/28/2017	107	GROSSBETA	.02237	.005298	.02682	Air Filter
111915002	9/5/2017	107	GROSSBETA	.01615	.003894	.01942	Air Filter
111989002	9/13/2017	107	GROSSBETA	.01801	.004038	.0214	Air Filter
112177002	9/18/2017	107	GROSSBETA	.02674	.006333	.03205	Air Filter
112322002	9/25/2017	107	GROSSBETA	.0376	.005937	.04258	Air Filter
112451002	10/2/2017	107	GROSSBETA	.02492	.004916	.02905	Air Filter
112565002	10/9/2017	107	GROSSBETA	.01501	.003184	.01769	Air Filter
112698002	10/17/2017	107	GROSSBETA	.01065	.002402	.01267	Air Filter
112762002	10/23/2017	107	GROSSBETA	.02113	.00372	.02425	Air Filter
112881002	10/30/2017	107	GROSSBETA	.01843	.003257	.02117	Air Filter
112997001	11/6/2017	107	GROSSBETA	.02575	.003647	.02881	Air Filter
113101002	11/14/2017	107	GROSSBETA	.02529	.003373	.02812	Air Filter
113159002	11/21/2017	107	GROSSBETA	.03059	.004121	.03405	Air Filter
113265002	11/28/2017	107	GROSSBETA	.03344	.004079	.03686	Air Filter
113366002	12/5/2017	107	GROSSBETA	.03914	.004428	.04286	Air Filter
113428002	12/12/2017	107	GROSSBETA	.02257	.003494	.0255	Air Filter
113542002	12/19/2017	107	GROSSBETA	.03074	.003911	.03402	Air Filter
113560002	12/27/2017	107	GROSSBETA	.02114	.003205	.02383	Air Filter
107705003	1/3/2017	112	GROSSBETA	.01091	.003487	.01383	Air Filter
107877003	1/9/2017	112	GROSSBETA	.02132	.004828	.02537	Air Filter
107968003	1/16/2017	112	GROSSBETA	.01008	.003279	.01284	Air Filter
108095002	1/23/2017	112	GROSSBETA	.009796	.003346	.0126	Air Filter
108202003	1/30/2017	112	GROSSBETA	.02134	.004834	.0254	Air Filter
108350003	2/6/2017	112	GROSSBETA	.02568	.004747	.02966	Air Filter
108443003	2/13/2017	112	GROSSBETA	.02065	.004389	.02433	Air Filter
108543003	2/20/2017	112	GROSSBETA	.02347	.004798	.02749	Air Filter
108631003	2/27/2017	112	GROSSBETA	.015	.003906	.01828	Air Filter
108733003	3/6/2017	112	GROSSBETA	.02193	.004618	.02581	Air Filter

108835003	3/13/2017	112	GROSSBETA	.01882	.004229	.02236	Air Filter
108968003	3/20/2017	112	GROSSBETA	.01813	.004177	.02163	Air Filter
109069003	3/27/2017	112	GROSSBETA	.02266	.004659	.02657	Air Filter
109187003	4/3/2017	112	GROSSBETA	.02066	.004392	.02435	Air Filter
109317003	4/10/2017	112	GROSSBETA	.01297	.003669	.01605	Air Filter
109436003	4/17/2017	112	GROSSBETA	.02314	.004787	.02715	Air Filter
109561003	4/24/2017	112	GROSSBETA	.02071	.004432	.02443	Air Filter
109667003	5/1/2017	112	GROSSBETA	.01136	.003488	.01428	Air Filter
109803003	5/8/2017	112	GROSSBETA	.01808	.004217	.02162	Air Filter
109924003	5/15/2017	112	GROSSBETA	.0236	.004765	.0276	Air Filter
110042003	5/22/2017	112	GROSSBETA	.0221	.00449	.02587	Air Filter
110178003	5/30/2017	112	GROSSBETA	.01623	.003738	.01936	Air Filter
110282003	6/5/2017	112	GROSSBETA	.01602	.004461	.01976	Air Filter
110398003	6/12/2017	112	GROSSBETA	.01036	.003338	.01316	Air Filter
110541003	6/19/2017	112	GROSSBETA	.01191	.003644	.01497	Air Filter
110671003	6/26/2017	112	GROSSBETA	.0147	.003818	.0179	Air Filter
110814003	7/5/2017	112	GROSSBETA	.02202	.003901	.02529	Air Filter
110878003	7/10/2017	112	GROSSBETA	.01608	.005018	.0203	Air Filter
111045003	7/17/2017	112	GROSSBETA	.01043	.003293	.01319	Air Filter
111151003	7/24/2017	112	GROSSBETA	.01432	.003793	.0175	Air Filter
111269003	7/31/2017	112	GROSSBETA	.0146	.00377	.01777	Air Filter
111397003	8/7/2017	112	GROSSBETA	.01397	.003804	.01717	Air Filter
111523003	8/14/2017	112	GROSSBETA	.01163	.003573	.01463	Air Filter
111707003	8/22/2017	112	GROSSBETA	.0171	.004154	.02059	Air Filter
111813003	8/28/2017	112	GROSSBETA	.01689	.004544	.0207	Air Filter
111915003	9/5/2017	112	GROSSBETA	.0203	.004099	.02374	Air Filter
111989003	9/13/2017	112	GROSSBETA	.0194	.003963	.02273	Air Filter
112177003	9/18/2017	112	GROSSBETA	.02519	.005925	.03016	Air Filter
112322003	9/25/2017	112	GROSSBETA	.03691	.005632	.04163	Air Filter
112451003	10/2/2017	112	GROSSBETA	.02247	.004547	.02629	Air Filter
112565003	10/9/2017	112	GROSSBETA	.0155	.002984	.01801	Air Filter
112698003	10/17/2017	112	GROSSBETA	.01245	.002389	.01446	Air Filter
112762003	10/23/2017	112	GROSSBETA	.01904	.003447	.02193	Air Filter
112881003	10/30/2017	112	GROSSBETA	.01824	.003139	.02088	Air Filter
112997002	11/6/2017	112	GROSSBETA	.02736	.003588	.03038	Air Filter
113101003	11/14/2017	112	GROSSBETA	.02739	.003345	.0302	Air Filter
113159003	11/21/2017	112	GROSSBETA	.03687	.004254	.04044	Air Filter
113265003	11/28/2017	112	GROSSBETA	.00074	.003776	.003909	Air Filter
113366003	12/5/2017	112	GROSSBETA	.03964	.005366	.04414	Air Filter
113428003	12/12/2017	112	GROSSBETA	.02634	.003556	.02932	Air Filter
113542003	12/19/2017	112	GROSSBETA	.03737	.004086	.0408	Air Filter
113560003	12/27/2017	112	GROSSBETA	.02171	.003101	.02431	Air Filter
107705004	1/3/2017	116	GROSSBETA	.01473	.004126	.01819	Air Filter
107877004	1/9/2017	116	GROSSBETA	.02723	.005638	.03196	Air Filter
107968004	1/16/2017	116	GROSSBETA	.009869	.003489	.0128	Air Filter
108095003	1/23/2017	116	GROSSBETA	.01183	.00383	.01505	Air Filter
108202004	1/30/2017	116	GROSSBETA	.02432	.005407	.02886	Air Filter

108350004	2/6/2017	116	GROSSBETA	.01881	.00434	.02245	Air Filter
108443004	2/13/2017	116	GROSSBETA	.02181	.004746	.0258	Air Filter
108543004	2/20/2017	116	GROSSBETA	.02571	.005257	.03012	Air Filter
108631004	2/27/2017	116	GROSSBETA	.01678	.004334	.02042	Air Filter
108733004	3/6/2017	116	GROSSBETA	.02259	.004928	.02673	Air Filter
108835004	3/13/2017	116	GROSSBETA	.01858	.004407	.02228	Air Filter
108968004	3/20/2017	116	GROSSBETA	.01876	.004476	.02252	Air Filter
109069004	3/27/2017	116	GROSSBETA	.01907	.004582	.02291	Air Filter
109187004	4/3/2017	116	GROSSBETA	.01833	.004405	.02203	Air Filter
109317004	4/10/2017	116	GROSSBETA	.01342	.003913	.0167	Air Filter
109436004	4/17/2017	116	GROSSBETA	.02413	.005106	.02842	Air Filter
109561004	4/24/2017	116	GROSSBETA	.01895	.00456	.02277	Air Filter
109667004	5/1/2017	116	GROSSBETA	.01622	.004289	.01982	Air Filter
109803004	5/8/2017	116	GROSSBETA	.01781	.004401	.02151	Air Filter
109924004	5/15/2017	116	GROSSBETA	.02849	.005399	.03302	Air Filter
110042004	5/22/2017	116	GROSSBETA	.02319	.004841	.02725	Air Filter
110178004	5/30/2017	116	GROSSBETA	.01406	.003685	.01715	Air Filter
110282004	6/5/2017	116	GROSSBETA	.01313	.00444	.01686	Air Filter
110398004	6/12/2017	116	GROSSBETA	.01134	.003608	.01436	Air Filter
110541004	6/19/2017	116	GROSSBETA	.01424	.004085	.01767	Air Filter
110671004	6/26/2017	116	GROSSBETA	.01025	.003533	.01322	Air Filter
110814004	7/5/2017	116	GROSSBETA	.02196	.004442	.02568	Air Filter
110878004	7/10/2017	116	GROSSBETA	.01059	.003966	.01392	Air Filter
111045004	7/17/2017	116	GROSSBETA	.007656	.003136	.01029	Air Filter
111151004	7/24/2017	116	GROSSBETA	.01271	.003787	.01589	Air Filter
111269004	7/31/2017	116	GROSSBETA	.01426	.003956	.01758	Air Filter
111397004	8/7/2017	116	GROSSBETA	.01293	.003896	.0162	Air Filter
111523004	8/14/2017	116	GROSSBETA	.01371	.003945	.01702	Air Filter
111707004	8/22/2017	116	GROSSBETA	.01889	.004589	.02274	Air Filter
111813004	8/28/2017	116	GROSSBETA	.02136	.005289	.0258	Air Filter
111915004	9/5/2017	116	GROSSBETA	.01615	.003953	.01947	Air Filter
111989004	9/13/2017	116	GROSSBETA	.02256	.004469	.02632	Air Filter
112177004	9/18/2017	116	GROSSBETA	.03502	.007198	.04106	Air Filter
112322004	9/25/2017	116	GROSSBETA	.04045	.006192	.04565	Air Filter
112451004	10/2/2017	116	GROSSBETA	.02485	.004952	.02901	Air Filter
112565004	10/9/2017	116	GROSSBETA	.01411	.003164	.01677	Air Filter
112698004	10/17/2017	116	GROSSBETA	.01346	.002617	.01566	Air Filter
112762004	10/23/2017	116	GROSSBETA	.01968	.003685	.02277	Air Filter
112881004	10/30/2017	116	GROSSBETA	.01653	.003003	.01906	Air Filter
112997003	11/6/2017	116	GROSSBETA	.02409	.003589	.02711	Air Filter
113101004	11/14/2017	116	GROSSBETA	.03008	.003611	.03311	Air Filter
113159004	11/21/2017	116	GROSSBETA	.03588	.004423	.03959	Air Filter
113265004	11/28/2017	116	GROSSBETA	.03841	.00433	.04204	Air Filter
113366004	12/5/2017	116	GROSSBETA	.03695	.004316	.04057	Air Filter
113428004	12/12/2017	116	GROSSBETA	.02619	.00379	.02937	Air Filter
113542004	12/19/2017	116	GROSSBETA	.0317	.003977	.03504	Air Filter
113560004	12/27/2017	116	GROSSBETA	.01952	.003085	.02211	Air Filter

107705005	1/3/2017	304	GROSSBETA	.01631	.004321	.01993	Air Filter
107877005	1/9/2017	304	GROSSBETA	.0215	.005036	.02572	Air Filter
107968005	1/16/2017	304	GROSSBETA	.01014	.003433	.01302	Air Filter
108095004	1/23/2017	304	GROSSBETA	.008137	.003334	.01094	Air Filter
108202005	1/30/2017	304	GROSSBETA	.02933	.00576	.03416	Air Filter
108350005	2/6/2017	304	GROSSBETA	.02037	.004493	.02414	Air Filter
108443005	2/13/2017	304	GROSSBETA	.02387	.004907	.02799	Air Filter
108543005	2/20/2017	304	GROSSBETA	.02667	.00526	.03108	Air Filter
108631005	2/27/2017	304	GROSSBETA	.01608	.004224	.01963	Air Filter
108733005	3/6/2017	304	GROSSBETA	.0241	.004991	.02829	Air Filter
108835005	3/13/2017	304	GROSSBETA	.01628	.00417	.01978	Air Filter
108968005	3/20/2017	304	GROSSBETA	.01831	.004399	.022	Air Filter
109069005	3/27/2017	304	GROSSBETA	.02256	.004909	.02668	Air Filter
109187005	4/3/2017	304	GROSSBETA	.0182	.004406	.0219	Air Filter
109317005	4/10/2017	304	GROSSBETA	.01097	.003596	.01398	Air Filter
109436005	4/17/2017	304	GROSSBETA	.02349	.00494	.02763	Air Filter
109561005	4/24/2017	304	GROSSBETA	.01772	.004264	.0213	Air Filter
109667005	5/1/2017	304	GROSSBETA	.01468	.004023	.01806	Air Filter
109803005	5/8/2017	304	GROSSBETA	.02161	.004697	.02555	Air Filter
109924005	5/15/2017	304	GROSSBETA	.0251	.005018	.02932	Air Filter
110042005	5/22/2017	304	GROSSBETA	.02719	.005111	.03148	Air Filter
110178005	5/30/2017	304	GROSSBETA	.01811	.003966	.02144	Air Filter
110282005	6/5/2017	304	GROSSBETA	.01666	.00473	.02063	Air Filter
110398005	6/12/2017	304	GROSSBETA	.0105	.003473	.01342	Air Filter
110541005	6/19/2017	304	GROSSBETA	.0166	.004233	.02015	Air Filter
110671005	6/26/2017	304	GROSSBETA	.008828	.003283	.01158	Air Filter
110814005	7/6/2017	304	GROSSBETA	.02059	.003874	.02385	Air Filter
110878005	7/10/2017	304	GROSSBETA	.01189	.005071	.01615	Air Filter
111045005	7/17/2017	304	GROSSBETA	.007999	.003099	.0106	Air Filter
111151005	7/24/2017	304	GROSSBETA	.009901	.003335	.0127	Air Filter
111269005	7/31/2017	304	GROSSBETA	.0177	.004199	.02123	Air Filter
111397005	8/7/2017	304	GROSSBETA	.01435	.003943	.01766	Air Filter
111523005	8/14/2017	304	GROSSBETA	.01264	.003794	.01582	Air Filter
111707005	8/22/2017	304	GROSSBETA	.01657	.004269	.02015	Air Filter
111813005	8/28/2017	304	GROSSBETA	.01361	.004331	.01724	Air Filter
111915005	9/5/2017	304	GROSSBETA	.01865	.004097	.02209	Air Filter
111989005	9/13/2017	304	GROSSBETA	.01694	.003897	.02021	Air Filter
112177005	9/18/2017	304	GROSSBETA	.02753	.006301	.03282	Air Filter
112322005	9/25/2017	304	GROSSBETA	.03849	.005927	.04346	Air Filter
112451005	10/2/2017	304	GROSSBETA	.02493	.004845	.02899	Air Filter
112565005	10/9/2017	304	GROSSBETA	.01466	.00311	.01727	Air Filter
112698005	10/17/2017	304	GROSSBETA	.01118	.002436	.01322	Air Filter
112762005	10/23/2017	304	GROSSBETA	.02074	.003739	.02387	Air Filter
112881005	10/30/2017	304	GROSSBETA	.01688	.003129	.0195	Air Filter
112997004	11/6/2017	304	GROSSBETA	.02283	.003479	.02575	Air Filter
113101005	11/14/2017	304	GROSSBETA	.02582	.003369	.02865	Air Filter
113159005	11/21/2017	304	GROSSBETA	.02878	.004025	.03216	Air Filter

113265005	11/28/2017	304	GROSSBETA	.03526	.004155	.03875	Air Filter
113366005	12/5/2017	304	GROSSBETA	.0366	.00426	.04017	Air Filter
113428005	12/12/2017	304	GROSSBETA	.02865	.003816	.03186	Air Filter
113542005	12/19/2017	304	GROSSBETA	.03132	.003928	.03461	Air Filter
113560005	12/27/2017	304	GROSSBETA	.02452	.003369	.02735	Air Filter
107705006	1/3/2017	309	GROSSBETA	.01081	.003744	.01395	Air Filter
107877006	1/9/2017	309	GROSSBETA	.02527	.005479	.02987	Air Filter
107968006	1/16/2017	309	GROSSBETA	.01106	.003645	.01412	Air Filter
108095005	1/23/2017	309	GROSSBETA	.009878	.003698	.01298	Air Filter
108202006	1/30/2017	309	GROSSBETA	.02335	.005289	.02779	Air Filter
108350006	2/6/2017	309	GROSSBETA	.02469	.005	.02889	Air Filter
108443006	2/13/2017	309	GROSSBETA	.02474	.005141	.02905	Air Filter
108543006	2/20/2017	309	GROSSBETA	.02251	.005053	.02675	Air Filter
108631006	2/27/2017	309	GROSSBETA	.02366	.005123	.02796	Air Filter
108733006	3/6/2017	309	GROSSBETA	.02703	.005422	.03158	Air Filter
108835006	3/13/2017	309	GROSSBETA	.01663	.004223	.02017	Air Filter
108968006	3/20/2017	309	GROSSBETA	.02159	.004816	.02564	Air Filter
109069006	3/27/2017	309	GROSSBETA	.02697	.005427	.03152	Air Filter
109187006	4/3/2017	309	GROSSBETA	.0184	.004557	.02223	Air Filter
109317006	4/10/2017	309	GROSSBETA	.01442	.00412	.01788	Air Filter
109436006	4/17/2017	309	GROSSBETA	.02232	.004834	.02638	Air Filter
109561006	4/24/2017	309	GROSSBETA	.02009	.004544	.0239	Air Filter
109667006	5/1/2017	309	GROSSBETA	.0181	.004381	.02178	Air Filter
109803006	5/8/2017	309	GROSSBETA	.01884	.004423	.02255	Air Filter
109924006	5/15/2017	309	GROSSBETA	.02337	.004873	.02746	Air Filter
110042006	5/22/2017	309	GROSSBETA	.02219	.004685	.02612	Air Filter
110178006	5/30/2017	309	GROSSBETA	.01886	.00408	.02229	Air Filter
110282006	6/5/2017	309	GROSSBETA	.01397	.004427	.01769	Air Filter
110398006	6/12/2017	309	GROSSBETA	.01018	.00341	.01304	Air Filter
110541006	6/19/2017	309	GROSSBETA	.01603	.004192	.01955	Air Filter
110671006	6/26/2017	309	GROSSBETA	.01035	.003471	.01327	Air Filter
110814006	7/6/2017	309	GROSSBETA	.01843	.003565	.02142	Air Filter
110878006	7/10/2017	309	GROSSBETA	.011	.005013	.0152	Air Filter
111045006	7/17/2017	309	GROSSBETA	.007507	.003075	.01009	Air Filter
111151006	7/24/2017	309	GROSSBETA	.01229	.003661	.01536	Air Filter
111269006	7/31/2017	309	GROSSBETA	.01804	.00428	.02164	Air Filter
111397006	8/7/2017	309	GROSSBETA	.01303	.0038	.01622	Air Filter
111523006	8/14/2017	309	GROSSBETA	.01061	.003555	.01359	Air Filter
111707006	8/22/2017	309	GROSSBETA	.01676	.004287	.02036	Air Filter
111813006	8/28/2017	309	GROSSBETA	.0175	.004752	.02149	Air Filter
111915006	9/5/2017	309	GROSSBETA	.01634	.003856	.01957	Air Filter
111989006	9/13/2017	309	GROSSBETA	.01997	.004216	.02351	Air Filter
112177006	9/18/2017	309	GROSSBETA	.0219	.005739	.02672	Air Filter
112322006	9/25/2017	309	GROSSBETA	.03797	.005959	.04298	Air Filter
112451006	10/2/2017	309	GROSSBETA	.02221	.00459	.02606	Air Filter
112565006	10/9/2017	309	GROSSBETA	.01325	.003023	.01578	Air Filter
112698006	10/17/2017	309	GROSSBETA	.0121	.002515	.01421	Air Filter

112762006	10/23/2017	309	GROSSBETA	.02139	.003739	.02453	Air Filter
112881006	10/30/2017	309	GROSSBETA	.01762	.0032	.0203	Air Filter
112997005	11/6/2017	309	GROSSBETA	.02735	.003744	.0305	Air Filter
113101006	11/14/2017	309	GROSSBETA	.02438	.00332	.02717	Air Filter
113159006	11/21/2017	309	GROSSBETA	.03409	.004301	.0377	Air Filter
113265006	11/28/2017	309	GROSSBETA	.03245	.004012	.03582	Air Filter
113366006	12/5/2017	309	GROSSBETA	.03886	.004431	.04257	Air Filter
113428006	12/12/2017	309	GROSSBETA	.02428	.00361	.02731	Air Filter
113542006	12/19/2017	309	GROSSBETA	.03052	.003891	.03378	Air Filter
113560006	12/27/2017	309	GROSSBETA	.01788	.002975	.02038	Air Filter
109218001	3/27/2017	103	BE-7	.09473	.02388	0	Air Filter Composite
109218001	3/27/2017	103	CS-134	0	0	.001499	Air Filter Composite
109218001	3/27/2017	103	CS-137	0	0	.002281	Air Filter Composite
109218001	3/27/2017	103	J-131	0	0	.002381	Air Filter Composite
110816001	6/26/2017	103	BE-7	.09739	.01763	0	Air Filter Composite
110816001	6/26/2017	103	CS-134	0	0	.0007406	Air Filter Composite
110816001	6/26/2017	103	CS-137	0	0	.0005069	Air Filter Composite
110816001	6/26/2017	103	J-131	0	0	.003263	Air Filter Composite
112485001	9/25/2017	103	BE-7	.07688	.02164	0	Air Filter Composite
112485001	9/25/2017	103	CS-134	0	0	.001103	Air Filter Composite
112485001	9/25/2017	103	CS-137	0	0	.00138	Air Filter Composite
112485001	9/25/2017	103	J-131	0	0	.002049	Air Filter Composite
113799001	12/27/2017	103	BE-7	.1048	.02755	0	Air Filter Composite
113799001	12/27/2017	103	CS-134	0	0	.001099	Air Filter Composite
113799001	12/27/2017	103	CS-137	0	0	.00137	Air Filter Composite
113799001	12/27/2017	103	J-131	0	0	.006267	Air Filter Composite
109218002	3/27/2017	107	BE-7	.07994	.01973	0	Air Filter Composite
109218002	3/27/2017	107	CS-134	0	0	.001138	Air Filter Composite
109218002	3/27/2017	107	CS-137	0	0	.0009601	Air Filter Composite
109218002	3/27/2017	107	J-131	0	0	.002542	Air Filter Composite
110816002	6/26/2017	107	BE-7	.09715	.01782	0	Air Filter Composite
110816002	6/26/2017	107	CS-134	0	0	.0008884	Air Filter Composite
110816002	6/26/2017	107	CS-137	0	0	.001257	Air Filter Composite
110816002	6/26/2017	107	J-131	0	0	.001534	Air Filter Composite
112485002	9/25/2017	107	BE-7	.09053	.01967	0	Air Filter Composite
112485002	9/25/2017	107	CS-134	0	0	.001103	Air Filter Composite
112485002	9/25/2017	107	CS-137	0	0	.0009313	Air Filter Composite
112485002	9/25/2017	107	J-131	0	0	.002711	Air Filter Composite
113799002	12/27/2017	107	BE-7	.07542	.0175	0	Air Filter Composite
113799002	12/27/2017	107	CS-134	0	0	.001179	Air Filter Composite
113799002	12/27/2017	107	CS-137	0	0	.001582	Air Filter Composite
113799002	12/27/2017	107	J-131	0	0	.004226	Air Filter Composite
109218003	3/27/2017	112	BE-7	.09985	.0234	0	Air Filter Composite
109218003	3/27/2017	112	CS-134	0	0	.000964	Air Filter Composite
109218003	3/27/2017	112	CS-137	0	0	.001205	Air Filter Composite
109218003	3/27/2017	112	J-131	0	0	.001778	Air Filter Composite
110816003	6/26/2017	112	BE-7	.08331	.01569	0	Air Filter Composite

110816003	6/26/2017	112	CS-134	0	0	.0005755	Air Filter Composite
110816003	6/26/2017	112	CS-137	0	0	.0006053	Air Filter Composite
110816003	6/26/2017	112	J-131	0	0	.002912	Air Filter Composite
112485003	9/25/2017	112	BE-7	.08407	.01946	0	Air Filter Composite
112485003	9/25/2017	112	CS-134	0	0	.0008789	Air Filter Composite
112485003	9/25/2017	112	CS-137	0	0	.0008604	Air Filter Composite
112485003	9/25/2017	112	J-131	0	0	.003189	Air Filter Composite
113799003	12/27/2017	112	BE-7	.07253	.01987	0	Air Filter Composite
113799003	12/27/2017	112	CS-134	0	0	.002101	Air Filter Composite
113799003	12/27/2017	112	CS-137	0	0	.001282	Air Filter Composite
113799003	12/27/2017	112	J-131	0	0	.004234	Air Filter Composite
109218004	3/27/2017	116	BE-7	.08123	.01956	0	Air Filter Composite
109218004	3/27/2017	116	CS-134	0	0	.0007767	Air Filter Composite
109218004	3/27/2017	116	CS-137	0	0	.001837	Air Filter Composite
109218004	3/27/2017	116	J-131	0	0	.001965	Air Filter Composite
110816004	6/26/2017	116	BE-7	.08566	.0236	0	Air Filter Composite
110816004	6/26/2017	116	CS-134	0	0	.001068	Air Filter Composite
110816004	6/26/2017	116	CS-137	0	0	.001329	Air Filter Composite
110816004	6/26/2017	116	J-131	0	0	.002621	Air Filter Composite
112485004	9/25/2017	116	BE-7	.07003	.02303	0	Air Filter Composite
112485004	9/25/2017	116	CS-134	0	0	.001091	Air Filter Composite
112485004	9/25/2017	116	CS-137	0	0	.001365	Air Filter Composite
112485004	9/25/2017	116	J-131	0	0	.003892	Air Filter Composite
113799004	12/27/2017	116	BE-7	.06664	.0203	0	Air Filter Composite
113799004	12/27/2017	116	CS-134	0	0	.00186	Air Filter Composite
113799004	12/27/2017	116	CS-137	0	0	.001301	Air Filter Composite
113799004	12/27/2017	116	J-131	0	0	.002921	Air Filter Composite
109218005	3/27/2017	304	BE-7	.1075	.02499	0	Air Filter Composite
109218005	3/27/2017	304	CS-134	0	0	.001045	Air Filter Composite
109218005	3/27/2017	304	CS-137	0	0	.001306	Air Filter Composite
109218005	3/27/2017	304	J-131	0	0	.00345	Air Filter Composite
110816005	6/26/2017	304	BE-7	.0945	.02013	0	Air Filter Composite
110816005	6/26/2017	304	CS-134	0	0	.0009008	Air Filter Composite
110816005	6/26/2017	304	CS-137	0	0	.0008784	Air Filter Composite
110816005	6/26/2017	304	J-131	0	0	.002795	Air Filter Composite
112485005	9/25/2017	304	BE-7	.06144	.01423	0	Air Filter Composite
112485005	9/25/2017	304	CS-134	0	0	.001065	Air Filter Composite
112485005	9/25/2017	304	CS-137	0	0	.0008311	Air Filter Composite
112485005	9/25/2017	304	J-131	0	0	.001314	Air Filter Composite
113799005	12/27/2017	304	BE-7	.06166	.01673	0	Air Filter Composite
113799005	12/27/2017	304	CS-134	0	0	.001542	Air Filter Composite
113799005	12/27/2017	304	CS-137	0	0	.0008797	Air Filter Composite
113799005	12/27/2017	304	J-131	0	0	.004192	Air Filter Composite
109218006	3/27/2017	309	BE-7	.1105	.02258	0	Air Filter Composite
109218006	3/27/2017	309	CS-134	0	0	.0007976	Air Filter Composite
109218006	3/27/2017	309	CS-137	0	0	.0009845	Air Filter Composite
109218006	3/27/2017	309	J-131	0	0	.002622	Air Filter Composite

110816006	6/26/2017	309	BE-7	.09926	.01691	0	Air Filter Composite
110816006	6/26/2017	309	CS-134	0	0	.001037	Air Filter Composite
110816006	6/26/2017	309	CS-137	0	0	.000513	Air Filter Composite
110816006	6/26/2017	309	J-131	0	0	.001923	Air Filter Composite
112485006	9/25/2017	309	BE-7	.07289	.01736	0	Air Filter Composite
112485006	9/25/2017	309	CS-134	0	0	.0007381	Air Filter Composite
112485006	9/25/2017	309	CS-137	0	0	.001151	Air Filter Composite
112485006	9/25/2017	309	J-131	0	0	.001885	Air Filter Composite
113799006	12/27/2017	309	BE-7	.1039	.02484	0	Air Filter Composite
113799006	12/27/2017	309	CS-134	0	0	.001028	Air Filter Composite
113799006	12/27/2017	309	CS-137	0	0	.00128	Air Filter Composite
113799006	12/27/2017	309	J-131	0	0	.002893	Air Filter Composite
109949001	5/16/2017	170	BE-7	0	0	126.47	Fish
109949001	5/16/2017	170	CO-58	0	0	14.4621	Fish
109949001	5/16/2017	170	CO-60	0	0	10.251	Fish
109949001	5/16/2017	170	CS-134	0	0	9.21476	Fish
109949001	5/16/2017	170	CS-137	0	0	27.2122	Fish
109949001	5/16/2017	170	FE-59	0	0	31.9258	Fish
109949001	5/16/2017	170	K-40	3513.13	542.54	0	Fish
109949001	5/16/2017	170	MN-54	0	0	23.545	Fish
109949001	5/16/2017	170	ZN-65	0	0	25.3561	Fish
109949002	5/16/2017	170	BE-7	0	0	78.6969	Fish
109949002	5/16/2017	170	CO-58	0	0	8.1944	Fish
109949002	5/16/2017	170	CO-60	0	0	12.2411	Fish
109949002	5/16/2017	170	CS-134	0	0	7.14975	Fish
109949002	5/16/2017	170	CS-137	8.3337	4.53059	0	Fish
109949002	5/16/2017	170	FE-59	0	0	15.3862	Fish
109949002	5/16/2017	170	K-40	3397.23	371.658	0	Fish
109949002	5/16/2017	170	MN-54	0	0	5.33275	Fish
109949002	5/16/2017	170	ZN-65	0	0	29.807	Fish
112757001	10/23/2017	170	BE-7	0	0	131.388	Fish
112757001	10/23/2017	170	CO-58	0	0	13.0712	Fish
112757001	10/23/2017	170	CO-60	0	0	30.0395	Fish
112757001	10/23/2017	170	CS-134	0	0	18.3646	Fish
112757001	10/23/2017	170	CS-137	0	0	24.8839	Fish
112757001	10/23/2017	170	FE-59	0	0	32.7227	Fish
112757001	10/23/2017	170	K-40	4137.38	591.753	0	Fish
112757001	10/23/2017	170	MN-54	0	0	8.65723	Fish
112757001	10/23/2017	170	ZN-65	0	0	33.6393	Fish
112757002	10/23/2017	170	BE-7	0	0	83.0091	Fish
112757002	10/23/2017	170	CO-58	0	0	14.7401	Fish
112757002	10/23/2017	170	CO-60	0	0	9.71926	Fish
112757002	10/23/2017	170	CS-134	0	0	7.3881	Fish
112757002	10/23/2017	170	CS-137	0	0	16.3362	Fish
112757002	10/23/2017	170	FE-59	0	0	17.585	Fish
112757002	10/23/2017	170	K-40	3836	449.68	0	Fish
112757002	10/23/2017	170	MN-54	0	0	11.8723	Fish

112757002	10/23/2017	170	ZN-65	0	0	30.0902	Fish
109949003	5/16/2017	172	BE-7	0	0	81.5327	Fish
109949003	5/16/2017	172	CO-58	0	0	15.8845	Fish
109949003	5/16/2017	172	CO-60	0	0	15.3725	Fish
109949003	5/16/2017	172	CS-134	0	0	7.07387	Fish
109949003	5/16/2017	172	CS-137	0	0	15.6896	Fish
109949003	5/16/2017	172	FE-59	0	0	13.1805	Fish
109949003	5/16/2017	172	K-40	2912.37	443.776	0	Fish
109949003	5/16/2017	172	MN-54	0	0	8.35432	Fish
109949003	5/16/2017	172	ZN-65	0	0	21.3427	Fish
109949004	5/16/2017	172	BE-7	0	0	90.3299	Fish
109949004	5/16/2017	172	CO-58	0	0	18.206	Fish
109949004	5/16/2017	172	CO-60	0	0	14.4314	Fish
109949004	5/16/2017	172	CS-134	0	0	14.8083	Fish
109949004	5/16/2017	172	CS-137	0	0	26.1869	Fish
109949004	5/16/2017	172	FE-59	0	0	30.7921	Fish
109949004	5/16/2017	172	K-40	3423.69	541.437	0	Fish
109949004	5/16/2017	172	MN-54	0	0	9.56798	Fish
109949004	5/16/2017	172	ZN-65	0	0	41.1293	Fish
112757003	10/23/2017	172	BE-7	0	0	111.52	Fish
112757003	10/23/2017	172	CO-58	0	0	7.36396	Fish
112757003	10/23/2017	172	CO-60	0	0	18.3234	Fish
112757003	10/23/2017	172	CS-134	0	0	12.7648	Fish
112757003	10/23/2017	172	CS-137	0	0	18.0462	Fish
112757003	10/23/2017	172	FE-59	0	0	30.5578	Fish
112757003	10/23/2017	172	K-40	3417.51	453.804	0	Fish
112757003	10/23/2017	172	MN-54	0	0	8.67728	Fish
112757003	10/23/2017	172	ZN-65	0	0	40.3657	Fish
112757004	10/23/2017	172	BE-7	0	0	107.761	Fish
112757004	10/23/2017	172	CO-58	0	0	16.1747	Fish
112757004	10/23/2017	172	CO-60	0	0	14.0764	Fish
112757004	10/23/2017	172	CS-134	0	0	11.89	Fish
112757004	10/23/2017	172	CS-137	0	0	10.7327	Fish
112757004	10/23/2017	172	FE-59	0	0	24.2581	Fish
112757004	10/23/2017	172	K-40	3295.2	508.194	0	Fish
112757004	10/23/2017	172	MN-54	0	0	11.3398	Fish
112757004	10/23/2017	172	ZN-65	0	0	49.6785	Fish
109663001	5/1/2017	170	Be-7	1862.75	317.825	0	Sediment
109663001	5/1/2017	170	Co-60	0	0	26.786	Sediment
109663001	5/1/2017	170	Cs-134	0	0	35.368	Sediment
109663001	5/1/2017	170	Cs-137	101.425	39.887	0	Sediment
109663001	5/1/2017	170	K-40	9415.82	975.499	0	Sediment
113000001	11/6/2017	170	Be-7	1322.93	293.713	0	Sediment
113000001	11/6/2017	170	Co-60	0	0	36.126	Sediment
113000001	11/6/2017	170	Cs-134	0	0	27.856	Sediment
113000001	11/6/2017	170	Cs-137	77.762	41.363	0	Sediment
113000001	11/6/2017	170	K-40	10352.1	1109.54	0	Sediment

109663002	5/1/2017	172	Be-7	582.503	150.754	0	Sediment
109663002	5/1/2017	172	Co-60	0	0	13.218	Sediment
109663002	5/1/2017	172	Cs-134	0	0	14.427	Sediment
109663002	5/1/2017	172	Cs-137	29.545	12.162	0	Sediment
109663002	5/1/2017	172	K-40	10723.3	881.953	0	Sediment
113000002	11/6/2017	172	Be-7	1065.75	275.972	0	Sediment
113000002	11/6/2017	172	Co-60	0	0	42.646	Sediment
113000002	11/6/2017	172	Cs-134	0	0	27.575	Sediment
113000002	11/6/2017	172	Cs-137	65.391	33.026	0	Sediment
113000002	11/6/2017	172	K-40	11627.9	1164.21	0	Sediment
108199003	1/30/2017	106	BE-7	14626.3	1225.11	0	Vegetation
108199003	1/30/2017	106	CS-134	0	0	15.1523	Vegetation
108199003	1/30/2017	106	CS-137	40.5714	20.2806	0	Vegetation
108199003	1/30/2017	106	J-131	0	0	33.9412	Vegetation
108199003	1/30/2017	106	K-40	624.107	371.523	0	Vegetation
108626002	2/27/2017	106	BE-7	830.389	108.035	0	Vegetation
108626002	2/27/2017	106	CS-134	0	0	5.65387	Vegetation
108626002	2/27/2017	106	CS-137	29.4225	9.95236	0	Vegetation
108626002	2/27/2017	106	J-131	0	0	9.88564	Vegetation
108626002	2/27/2017	106	K-40	1658.17	227.074	0	Vegetation
109065002	3/27/2017	106	BE-7	909.126	195.032	0	Vegetation
109065002	3/27/2017	106	CS-134	0	0	19.8422	Vegetation
109065002	3/27/2017	106	CS-137	0	0	27.0506	Vegetation
109065002	3/27/2017	106	J-131	0	0	14.7542	Vegetation
109065002	3/27/2017	106	K-40	1688.42	345.788	0	Vegetation
109555002	4/24/2017	106	BE-7	2306.86	242.086	0	Vegetation
109555002	4/24/2017	106	CS-134	0	0	10.1024	Vegetation
109555002	4/24/2017	106	CS-137	58.4221	15.0909	0	Vegetation
109555002	4/24/2017	106	J-131	0	0	10.3412	Vegetation
109555002	4/24/2017	106	K-40	2866.85	324.91	0	Vegetation
110173003	5/30/2017	106	BE-7	1570.69	329.315	0	Vegetation
110173003	5/30/2017	106	CS-134	0	0	31.9141	Vegetation
110173003	5/30/2017	106	CS-137	29.3705	17.4378	0	Vegetation
110173003	5/30/2017	106	J-131	0	0	41.0814	Vegetation
110173003	5/30/2017	106	K-40	3807.07	713.498	0	Vegetation
110665002	6/26/2017	106	BE-7	1566.54	214.776	0	Vegetation
110665002	6/26/2017	106	CS-134	0	0	10.7143	Vegetation
110665002	6/26/2017	106	CS-137	82.4244	19.8644	0	Vegetation
110665002	6/26/2017	106	J-131	0	0	17.2382	Vegetation
110665002	6/26/2017	106	K-40	2858.51	432.656	0	Vegetation
111141002	7/24/2017	106	BE-7	2866.55	344.635	0	Vegetation
111141002	7/24/2017	106	CS-134	0	0	11.9253	Vegetation
111141002	7/24/2017	106	CS-137	114.809	20.7113	0	Vegetation
111141002	7/24/2017	106	J-131	0	0	20.0035	Vegetation
111141002	7/24/2017	106	K-40	1615.41	412.506	0	Vegetation
111786002	8/28/2017	106	BE-7	3163.89	303.076	0	Vegetation
111786002	8/28/2017	106	CS-134	0	0	12.6163	Vegetation

111786002	8/28/2017	106	CS-137	110.681	25.9957	0	Vegetation
111786002	8/28/2017	106	J-131	0	0	17.3189	Vegetation
111786002	8/28/2017	106	K-40	2537.66	388.222	0	Vegetation
112297002	9/25/2017	106	BE-7	2738.33	344.081	0	Vegetation
112297002	9/25/2017	106	CS-134	0	0	21.7052	Vegetation
112297002	9/25/2017	106	CS-137	145.234	29.0958	0	Vegetation
112297002	9/25/2017	106	J-131	0	0	31.7965	Vegetation
112297002	9/25/2017	106	K-40	2061.46	473.298	0	Vegetation
112883003	10/30/2017	106	BE-7	2810.66	286.39	0	Vegetation
112883003	10/30/2017	106	CS-134	0	0	14.7407	Vegetation
112883003	10/30/2017	106	CS-137	439.497	36.3739	0	Vegetation
112883003	10/30/2017	106	J-131	0	0	22.3661	Vegetation
112883003	10/30/2017	106	K-40	1673.2	326.635	0	Vegetation
113264003	11/28/2017	106	BE-7	3868.2	370.522	0	Vegetation
113264003	11/28/2017	106	CS-134	0	0	15.3437	Vegetation
113264003	11/28/2017	106	CS-137	292.066	29.047	0	Vegetation
113264003	11/28/2017	106	J-131	0	0	19.2541	Vegetation
113264003	11/28/2017	106	K-40	1703.08	321.169	0	Vegetation
113562003	12/27/2017	106	BE-7	1323.51	155.263	0	Vegetation
113562003	12/27/2017	106	CS-134	0	0	6.16541	Vegetation
113562003	12/27/2017	106	CS-137	20.9376	8.6205	0	Vegetation
113562003	12/27/2017	106	J-131	0	0	9.35584	Vegetation
113562003	12/27/2017	106	K-40	1019.23	171.143	0	Vegetation
108199002	1/30/2017	112	BE-7	4000.48	394.185	0	Vegetation
108199002	1/30/2017	112	CS-134	0	0	14.4462	Vegetation
108199002	1/30/2017	112	CS-137	0	0	11.5359	Vegetation
108199002	1/30/2017	112	J-131	0	0	11.9374	Vegetation
108199002	1/30/2017	112	K-40	3125.5	441.875	0	Vegetation
108626003	2/27/2017	112	BE-7	513.14	102.65	0	Vegetation
108626003	2/27/2017	112	CS-134	0	0	11.7869	Vegetation
108626003	2/27/2017	112	CS-137	15.6417	9.35699	0	Vegetation
108626003	2/27/2017	112	J-131	0	0	16.5621	Vegetation
108626003	2/27/2017	112	K-40	1919.34	306.419	0	Vegetation
109065003	3/27/2017	112	BE-7	380.312	152.16	0	Vegetation
109065003	3/27/2017	112	CS-134	0	0	20.2967	Vegetation
109065003	3/27/2017	112	CS-137	0	0	25.3165	Vegetation
109065003	3/27/2017	112	J-131	0	0	20.843	Vegetation
109065003	3/27/2017	112	K-40	2151.55	411.405	0	Vegetation
109555003	4/24/2017	112	BE-7	548.94	179.293	0	Vegetation
109555003	4/24/2017	112	CS-134	0	0	19.0213	Vegetation
109555003	4/24/2017	112	CS-137	0	0	13.5035	Vegetation
109555003	4/24/2017	112	J-131	0	0	26.5828	Vegetation
109555003	4/24/2017	112	K-40	4174.82	529.971	0	Vegetation
110173002	5/30/2017	112	BE-7	996.176	257.354	0	Vegetation
110173002	5/30/2017	112	CS-134	0	0	37.216	Vegetation
110173002	5/30/2017	112	CS-137	0	0	34.2465	Vegetation
110173002	5/30/2017	112	J-131	0	0	29.6901	Vegetation

110173002	5/30/2017	112	K-40	4571.98	818.184	0	Vegetation
110665003	6/26/2017	112	BE-7	814.773	162.168	0	Vegetation
110665003	6/26/2017	112	CS-134	0	0	11.9238	Vegetation
110665003	6/26/2017	112	CS-137	0	0	21.3952	Vegetation
110665003	6/26/2017	112	J-131	0	0	18.4718	Vegetation
110665003	6/26/2017	112	K-40	3464.47	480.678	0	Vegetation
111141003	7/24/2017	112	BE-7	4155.42	401.954	0	Vegetation
111141003	7/24/2017	112	CS-134	0	0	14.6402	Vegetation
111141003	7/24/2017	112	CS-137	30.1821	15.3846	0	Vegetation
111141003	7/24/2017	112	J-131	0	0	22.8356	Vegetation
111141003	7/24/2017	112	K-40	3288.34	443.741	0	Vegetation
111786003	8/28/2017	112	BE-7	2080.37	251.073	0	Vegetation
111786003	8/28/2017	112	CS-134	0	0	14.8711	Vegetation
111786003	8/28/2017	112	CS-137	15.241	8.11381	0	Vegetation
111786003	8/28/2017	112	J-131	0	0	22.4405	Vegetation
111786003	8/28/2017	112	K-40	3887.47	518.827	0	Vegetation
112297003	9/25/2017	112	BE-7	2619.5	266.39	0	Vegetation
112297003	9/25/2017	112	CS-134	0	0	12.2523	Vegetation
112297003	9/25/2017	112	CS-137	29.4807	14.5378	0	Vegetation
112297003	9/25/2017	112	J-131	0	0	20.0546	Vegetation
112297003	9/25/2017	112	K-40	4017.85	434.879	0	Vegetation
112883002	10/30/2017	112	BE-7	3667.47	359.375	0	Vegetation
112883002	10/30/2017	112	CS-134	0	0	17.9324	Vegetation
112883002	10/30/2017	112	CS-137	47.2607	15.6241	0	Vegetation
112883002	10/30/2017	112	J-131	0	0	18.0209	Vegetation
112883002	10/30/2017	112	K-40	2610.06	396.114	0	Vegetation
113264002	11/28/2017	112	BE-7	2896.68	420.306	0	Vegetation
113264002	11/28/2017	112	CS-134	0	0	33.2264	Vegetation
113264002	11/28/2017	112	CS-137	38.9759	14.9856	0	Vegetation
113264002	11/28/2017	112	J-131	0	0	23.6973	Vegetation
113264002	11/28/2017	112	K-40	3770.81	667.025	0	Vegetation
113562002	12/27/2017	112	BE-7	920.319	230.904	0	Vegetation
113562002	12/27/2017	112	CS-134	0	0	19.8127	Vegetation
113562002	12/27/2017	112	CS-137	0	0	21.4485	Vegetation
113562002	12/27/2017	112	J-131	0	0	34.1892	Vegetation
113562002	12/27/2017	112	K-40	1562.22	345.178	0	Vegetation
108199001	1/30/2017	416	BE-7	5176.62	537.738	0	Vegetation
108199001	1/30/2017	416	CS-134	0	0	21.9108	Vegetation
108199001	1/30/2017	416	CS-137	0	0	37.8339	Vegetation
108199001	1/30/2017	416	J-131	0	0	33.512	Vegetation
108199001	1/30/2017	416	K-40	2634.88	564.3	0	Vegetation
108626001	2/27/2017	416	BE-7	1536.18	206.71	0	Vegetation
108626001	2/27/2017	416	CS-134	0	0	16.2139	Vegetation
108626001	2/27/2017	416	CS-137	0	0	29.8885	Vegetation
108626001	2/27/2017	416	J-131	0	0	19.4636	Vegetation
108626001	2/27/2017	416	K-40	3885.28	491.221	0	Vegetation
109065001	3/27/2017	416	BE-7	1694.8	227.67	0	Vegetation

109065001	3/27/2017	416	CS-134	0	0	19.8687	Vegetation
109065001	3/27/2017	416	CS-137	0	0	23.025	Vegetation
109065001	3/27/2017	416	J-131	0	0	21.0433	Vegetation
109065001	3/27/2017	416	K-40	6031.76	607.658	0	Vegetation
109555001	4/24/2017	416	BE-7	593.742	142.92	0	Vegetation
109555001	4/24/2017	416	CS-134	0	0	10.383	Vegetation
109555001	4/24/2017	416	CS-137	0	0	14.9122	Vegetation
109555001	4/24/2017	416	J-131	0	0	16.6265	Vegetation
109555001	4/24/2017	416	K-40	5723.39	568.211	0	Vegetation
110173001	5/30/2017	416	BE-7	895.717	269.008	0	Vegetation
110173001	5/30/2017	416	CS-134	0	0	26.5247	Vegetation
110173001	5/30/2017	416	CS-137	0	0	39.2355	Vegetation
110173001	5/30/2017	416	J-131	0	0	30.7054	Vegetation
110173001	5/30/2017	416	K-40	4656	755.03	0	Vegetation
110665001	6/26/2017	416	BE-7	732.456	165.557	0	Vegetation
110665001	6/26/2017	416	CS-134	0	0	12.1045	Vegetation
110665001	6/26/2017	416	CS-137	0	0	27.4212	Vegetation
110665001	6/26/2017	416	J-131	0	0	31.3363	Vegetation
110665001	6/26/2017	416	K-40	2712.58	453.064	0	Vegetation
111141001	7/24/2017	416	BE-7	1839.38	268.507	0	Vegetation
111141001	7/24/2017	416	CS-134	0	0	15.8912	Vegetation
111141001	7/24/2017	416	CS-137	0	0	26.8725	Vegetation
111141001	7/24/2017	416	J-131	0	0	19.128	Vegetation
111141001	7/24/2017	416	K-40	2531.07	441.005	0	Vegetation
111786001	8/28/2017	416	BE-7	1766.05	273.61	0	Vegetation
111786001	8/28/2017	416	CS-134	0	0	25.8333	Vegetation
111786001	8/28/2017	416	CS-137	0	0	29.6608	Vegetation
111786001	8/28/2017	416	J-131	0	0	28.4249	Vegetation
111786001	8/28/2017	416	K-40	3078.1	492.825	0	Vegetation
112297001	9/25/2017	416	BE-7	1904.34	254.76	0	Vegetation
112297001	9/25/2017	416	CS-134	0	0	16.9161	Vegetation
112297001	9/25/2017	416	CS-137	0	0	21.4089	Vegetation
112297001	9/25/2017	416	J-131	0	0	21.0942	Vegetation
112297001	9/25/2017	416	K-40	2925.51	466.417	0	Vegetation
112883001	10/30/2017	416	BE-7	3280.9	415.783	0	Vegetation
112883001	10/30/2017	416	CS-134	0	0	30.047	Vegetation
112883001	10/30/2017	416	CS-137	0	0	37.7828	Vegetation
112883001	10/30/2017	416	J-131	0	0	42.2105	Vegetation
112883001	10/30/2017	416	K-40	3274.21	621.889	0	Vegetation
113264001	11/28/2017	416	BE-7	2983.21	293.026	0	Vegetation
113264001	11/28/2017	416	CS-134	0	0	16.6375	Vegetation
113264001	11/28/2017	416	CS-137	0	0	21.5214	Vegetation
113264001	11/28/2017	416	J-131	0	0	18.2488	Vegetation
113264001	11/28/2017	416	K-40	3973.88	445.855	0	Vegetation
113562001	12/27/2017	416	BE-7	1205.32	212.079	0	Vegetation
113562001	12/27/2017	416	CS-134	0	0	18.5134	Vegetation
113562001	12/27/2017	416	CS-137	0	0	25.2988	Vegetation

113562001	12/27/2017	416	J-131	0	0	16.042	Vegetation
113562001	12/27/2017	416	K-40	1448.73	274.352	0	Vegetation
107714001	1/3/2017	170	BA-140	0	0	21.9057	Water
107714001	1/3/2017	170	BE-7	0	0	39.9176	Water
107714001	1/3/2017	170	CO-58	0	0	4.31813	Water
107714001	1/3/2017	170	CO-60	0	0	7.81929	Water
107714001	1/3/2017	170	CS-134	0	0	3.63029	Water
107714001	1/3/2017	170	CS-137	0	0	6.30313	Water
107714001	1/3/2017	170	FE-59	0	0	12.2011	Water
107714001	1/3/2017	170	J-131	0	0	9.07142	Water
107714001	1/3/2017	170	K-40	0	0	106.165	Water
107714001	1/3/2017	170	LA-140	0	0	4.15356	Water
107714001	1/3/2017	170	MN-54	0	0	8.05595	Water
107714001	1/3/2017	170	NB-95	0	0	7.70377	Water
107714001	1/3/2017	170	RA-226	0	0	0	Water
107714001	1/3/2017	170	RA-228	0	0	0	Water
107714001	1/3/2017	170	ZN-65	0	0	12.6773	Water
107714001	1/3/2017	170	ZR-95	0	0	9.64562	Water
107751001	1/3/2017	170	H3	-221	178	149	Water
108327001	2/6/2017	170	BA-140	0	0	20.2907	Water
108327001	2/6/2017	170	BE-7	0	0	33.8724	Water
108327001	2/6/2017	170	CO-58	0	0	3.33386	Water
108327001	2/6/2017	170	CO-60	0	0	5.14293	Water
108327001	2/6/2017	170	CS-134	0	0	5.01678	Water
108327001	2/6/2017	170	CS-137	0	0	5.77664	Water
108327001	2/6/2017	170	FE-59	0	0	4.60415	Water
108327001	2/6/2017	170	J-131	0	0	7.11011	Water
108327001	2/6/2017	170	K-40	0	0	93.1252	Water
108327001	2/6/2017	170	LA-140	0	0	4.9921	Water
108327001	2/6/2017	170	MN-54	0	0	4.1734	Water
108327001	2/6/2017	170	NB-95	0	0	3.43175	Water
108327001	2/6/2017	170	RA-226	0	0	0	Water
108327001	2/6/2017	170	RA-228	0	0	0	Water
108327001	2/6/2017	170	ZN-65	0	0	11.8014	Water
108327001	2/6/2017	170	ZR-95	0	0	11.095	Water
108718001	3/6/2017	170	BA-140	0	0	27.4323	Water
108718001	3/6/2017	170	BE-7	0	0	54.9659	Water
108718001	3/6/2017	170	CO-58	0	0	3.70668	Water
108718001	3/6/2017	170	CO-60	0	0	8.85081	Water
108718001	3/6/2017	170	CS-134	0	0	4.65626	Water
108718001	3/6/2017	170	CS-137	0	0	5.41581	Water
108718001	3/6/2017	170	FE-59	0	0	10.3928	Water
108718001	3/6/2017	170	J-131	0	0	7.21644	Water
108718001	3/6/2017	170	K-40	0	0	118.246	Water
108718001	3/6/2017	170	LA-140	0	0	5.56956	Water
108718001	3/6/2017	170	MN-54	0	0	5.78653	Water
108718001	3/6/2017	170	NB-95	0	0	5.12613	Water

108718001	3/6/2017	170	RA-226	0	0	0	Water
108718001	3/6/2017	170	RA-228	0	0	0	Water
108718001	3/6/2017	170	ZN-65	0	0	12.8257	Water
108718001	3/6/2017	170	ZR-95	0	0	6.69274	Water
109186001	4/3/2017	170	BA-140	0	0	24.248	Water
109186001	4/3/2017	170	BE-7	0	0	71.3889	Water
109186001	4/3/2017	170	CO-58	0	0	3.1245	Water
109186001	4/3/2017	170	CO-60	0	0	6.20744	Water
109186001	4/3/2017	170	CS-134	0	0	6.84031	Water
109186001	4/3/2017	170	CS-137	0	0	7.70967	Water
109186001	4/3/2017	170	FE-59	0	0	4.58887	Water
109186001	4/3/2017	170	J-131	0	0	8.5813	Water
109186001	4/3/2017	170	K-40	0	0	103.404	Water
109186001	4/3/2017	170	LA-140	0	0	9.44189	Water
109186001	4/3/2017	170	MN-54	0	0	7.36088	Water
109186001	4/3/2017	170	NB-95	0	0	6.42599	Water
109186001	4/3/2017	170	RA-226	0	0	0	Water
109186001	4/3/2017	170	RA-228	0	0	0	Water
109186001	4/3/2017	170	ZN-65	0	0	7.59855	Water
109186001	4/3/2017	170	ZR-95	0	0	12.1126	Water
109238001	4/4/2017	170	H3	0	0	261	Water
109662001	5/1/2017	170	BA-140	0	0	17.9073	Water
109662001	5/1/2017	170	BE-7	0	0	66.5062	Water
109662001	5/1/2017	170	CO-58	0	0	3.9425	Water
109662001	5/1/2017	170	CO-60	0	0	7.76198	Water
109662001	5/1/2017	170	CS-134	0	0	8.69166	Water
109662001	5/1/2017	170	CS-137	0	0	5.32264	Water
109662001	5/1/2017	170	FE-59	0	0	9.9464	Water
109662001	5/1/2017	170	J-131	0	0	4.36863	Water
109662001	5/1/2017	170	K-40	0	0	114.881	Water
109662001	5/1/2017	170	LA-140	0	0	5.82335	Water
109662001	5/1/2017	170	MN-54	0	0	3.33433	Water
109662001	5/1/2017	170	NB-95	0	0	8.29466	Water
109662001	5/1/2017	170	RA-226	0	0	0	Water
109662001	5/1/2017	170	RA-228	0	0	0	Water
109662001	5/1/2017	170	ZN-65	0	0	14.783	Water
109662001	5/1/2017	170	ZR-95	0	0	7.2327	Water
110260001	6/5/2017	170	BA-140	0	0	27.9058	Water
110260001	6/5/2017	170	BE-7	0	0	75.0576	Water
110260001	6/5/2017	170	CO-58	0	0	5.70208	Water
110260001	6/5/2017	170	CO-60	0	0	6.07974	Water
110260001	6/5/2017	170	CS-134	0	0	4.24754	Water
110260001	6/5/2017	170	CS-137	0	0	8.27711	Water
110260001	6/5/2017	170	FE-59	0	0	9.51553	Water
110260001	6/5/2017	170	J-131	0	0	8.89875	Water
110260001	6/5/2017	170	K-40	0	0	143.256	Water
110260001	6/5/2017	170	LA-140	0	0	4.63796	Water

110260001	6/5/2017	170	MN-54	0	0	9.545	Water
110260001	6/5/2017	170	NB-95	0	0	4.27777	Water
110260001	6/5/2017	170	RA-226	0	0	0	Water
110260001	6/5/2017	170	RA-228	0	0	0	Water
110260001	6/5/2017	170	ZN-65	0	0	17.8095	Water
110260001	6/5/2017	170	ZR-95	0	0	13.6855	Water
110802001	7/6/2017	170	BA-140	0	0	26.1277	Water
110802001	7/6/2017	170	BE-7	0	0	55.5596	Water
110802001	7/6/2017	170	CO-58	0	0	6.91568	Water
110802001	7/6/2017	170	CO-60	0	0	8.31915	Water
110802001	7/6/2017	170	CS-134	0	0	4.67853	Water
110802001	7/6/2017	170	CS-137	0	0	6.36665	Water
110802001	7/6/2017	170	FE-59	0	0	9.14041	Water
110802001	7/6/2017	170	J-131	0	0	7.31451	Water
110802001	7/6/2017	170	K-40	0	0	132.592	Water
110802001	7/6/2017	170	LA-140	0	0	3.27734	Water
110802001	7/6/2017	170	MN-54	0	0	8.40835	Water
110802001	7/6/2017	170	NB-95	0	0	9.50955	Water
110802001	7/6/2017	170	RA-226	0	0	0	Water
110802001	7/6/2017	170	RA-228	0	0	0	Water
110802001	7/6/2017	170	ZN-65	0	0	6.0825	Water
110802001	7/6/2017	170	ZR-95	0	0	7.18766	Water
110870001	7/6/2017	170	H3	-45.8	167	140	Water
111392001	8/7/2017	170	BA-140	0	0	13.8891	Water
111392001	8/7/2017	170	BE-7	0	0	31.6925	Water
111392001	8/7/2017	170	CO-58	0	0	6.47216	Water
111392001	8/7/2017	170	CO-60	0	0	7.25584	Water
111392001	8/7/2017	170	CS-134	0	0	6.16429	Water
111392001	8/7/2017	170	CS-137	0	0	6.54048	Water
111392001	8/7/2017	170	FE-59	0	0	12.7005	Water
111392001	8/7/2017	170	J-131	0	0	7.72248	Water
111392001	8/7/2017	170	K-40	0	0	130.745	Water
111392001	8/7/2017	170	LA-140	0	0	7.8513	Water
111392001	8/7/2017	170	MN-54	0	0	6.92475	Water
111392001	8/7/2017	170	NB-95	0	0	7.33679	Water
111392001	8/7/2017	170	RA-226	0	0	0	Water
111392001	8/7/2017	170	RA-228	0	0	0	Water
111392001	8/7/2017	170	ZN-65	0	0	18.172	Water
111392001	8/7/2017	170	ZR-95	0	0	9.61077	Water
111884001	9/5/2017	170	BA-140	0	0	18.7424	Water
111884001	9/5/2017	170	BE-7	0	0	53.8336	Water
111884001	9/5/2017	170	CO-58	0	0	7.79088	Water
111884001	9/5/2017	170	CO-60	0	0	2.81988	Water
111884001	9/5/2017	170	CS-134	0	0	5.79163	Water
111884001	9/5/2017	170	CS-137	0	0	3.72291	Water
111884001	9/5/2017	170	FE-59	0	0	11.1646	Water
111884001	9/5/2017	170	J-131	0	0	5.69239	Water

111884001	9/5/2017	170	K-40	0	0	104.265	Water
111884001	9/5/2017	170	LA-140	0	0	3.04988	Water
111884001	9/5/2017	170	MN-54	0	0	6.87198	Water
111884001	9/5/2017	170	NB-95	0	0	4.38299	Water
111884001	9/5/2017	170	RA-226	0	0	0	Water
111884001	9/5/2017	170	RA-228	0	0	0	Water
111884001	9/5/2017	170	ZN-65	0	0	6.33854	Water
111884001	9/5/2017	170	ZR-95	0	0	8.58483	Water
112432001	10/2/2017	170	BA-140	0	0	22.2369	Water
112432001	10/2/2017	170	BE-7	0	0	44.4818	Water
112432001	10/2/2017	170	CO-58	0	0	6.02607	Water
112432001	10/2/2017	170	CO-60	0	0	9.28883	Water
112432001	10/2/2017	170	CS-134	0	0	3.09646	Water
112432001	10/2/2017	170	CS-137	0	0	5.30505	Water
112432001	10/2/2017	170	FE-59	0	0	9.59512	Water
112432001	10/2/2017	170	J-131	0	0	8.73071	Water
112432001	10/2/2017	170	K-40	0	0	116.599	Water
112432001	10/2/2017	170	LA-140	0	0	4.15267	Water
112432001	10/2/2017	170	MN-54	0	0	7.02302	Water
112432001	10/2/2017	170	NB-95	0	0	6.27587	Water
112432001	10/2/2017	170	RA-226	0	0	0	Water
112432001	10/2/2017	170	RA-228	0	0	0	Water
112432001	10/2/2017	170	ZN-65	0	0	14.1713	Water
112432001	10/2/2017	170	ZR-95	0	0	5.31037	Water
112456001	10/2/2017	170	H3	-77.6	159	133	Water
112999001	11/6/2017	170	BA-140	0	0	23.9445	Water
112999001	11/6/2017	170	BE-7	0	0	27.0745	Water
112999001	11/6/2017	170	CO-58	0	0	3.50698	Water
112999001	11/6/2017	170	CO-60	0	0	6.72138	Water
112999001	11/6/2017	170	CS-134	0	0	6.4224	Water
112999001	11/6/2017	170	CS-137	0	0	8.0991	Water
112999001	11/6/2017	170	FE-59	0	0	6.74472	Water
112999001	11/6/2017	170	J-131	0	0	8.93517	Water
112999001	11/6/2017	170	K-40	0	0	125.937	Water
112999001	11/6/2017	170	LA-140	0	0	4.36356	Water
112999001	11/6/2017	170	MN-54	0	0	6.48129	Water
112999001	11/6/2017	170	NB-95	0	0	3.90919	Water
112999001	11/6/2017	170	RA-226	0	0	0	Water
112999001	11/6/2017	170	RA-228	0	0	0	Water
112999001	11/6/2017	170	ZN-65	0	0	13.612	Water
112999001	11/6/2017	170	ZR-95	0	0	6.29403	Water
113368001	12/5/2017	170	BA-140	0	0	14.1088	Water
113368001	12/5/2017	170	BE-7	0	0	45.2693	Water
113368001	12/5/2017	170	CO-58	0	0	5.08374	Water
113368001	12/5/2017	170	CO-60	0	0	1.86531	Water
113368001	12/5/2017	170	CS-134	0	0	4.68898	Water
113368001	12/5/2017	170	CS-137	0	0	6.74029	Water

113368001	12/5/2017	170	FE-59	0	0	12.7976	Water
113368001	12/5/2017	170	J-131	0	0	6.60065	Water
113368001	12/5/2017	170	K-40	0	0	97.4931	Water
113368001	12/5/2017	170	LA-140	0	0	4.80892	Water
113368001	12/5/2017	170	MN-54	0	0	4.08895	Water
113368001	12/5/2017	170	NB-95	0	0	2.90085	Water
113368001	12/5/2017	170	RA-226	0	0	0	Water
113368001	12/5/2017	170	RA-228	0	0	0	Water
113368001	12/5/2017	170	ZN-65	0	0	5.35252	Water
113368001	12/5/2017	170	ZR-95	0	0	10.756	Water
107714002	1/4/2017	172	BA-140	0	0	16.0978	Water
107714002	1/4/2017	172	BE-7	0	0	52.4108	Water
107714002	1/4/2017	172	CO-58	0	0	4.28585	Water
107714002	1/4/2017	172	CO-60	0	0	7.50557	Water
107714002	1/4/2017	172	CS-134	0	0	4.09725	Water
107714002	1/4/2017	172	CS-137	0	0	4.88472	Water
107714002	1/4/2017	172	FE-59	0	0	5.90595	Water
107714002	1/4/2017	172	J-131	0	0	5.93663	Water
107714002	1/4/2017	172	K-40	0	0	64.4256	Water
107714002	1/4/2017	172	LA-140	0	0	6.41791	Water
107714002	1/4/2017	172	MN-54	0	0	4.46541	Water
107714002	1/4/2017	172	NB-95	0	0	5.49521	Water
107714002	1/4/2017	172	RA-226	0	0	0	Water
107714002	1/4/2017	172	RA-228	0	0	0	Water
107714002	1/4/2017	172	ZN-65	0	0	7.84717	Water
107714002	1/4/2017	172	ZR-95	0	0	11.3841	Water
107751002	1/4/2017	172	H3	26	183	180	Water
108327002	2/6/2017	172	BA-140	0	0	16.3911	Water
108327002	2/6/2017	172	BE-7	0	0	61.4845	Water
108327002	2/6/2017	172	CO-58	0	0	5.9339	Water
108327002	2/6/2017	172	CO-60	0	0	4.03403	Water
108327002	2/6/2017	172	CS-134	0	0	5.49611	Water
108327002	2/6/2017	172	CS-137	0	0	7.32282	Water
108327002	2/6/2017	172	FE-59	0	0	13.7784	Water
108327002	2/6/2017	172	J-131	0	0	9.91892	Water
108327002	2/6/2017	172	K-40	0	0	124.583	Water
108327002	2/6/2017	172	LA-140	0	0	11.9563	Water
108327002	2/6/2017	172	MN-54	0	0	5.8159	Water
108327002	2/6/2017	172	NB-95	0	0	7.74996	Water
108327002	2/6/2017	172	RA-226	0	0	0	Water
108327002	2/6/2017	172	RA-228	0	0	0	Water
108327002	2/6/2017	172	ZN-65	0	0	11.1252	Water
108327002	2/6/2017	172	ZR-95	0	0	12.8502	Water
108718002	3/6/2017	172	BA-140	0	0	25.658	Water
108718002	3/6/2017	172	BE-7	0	0	43.9102	Water
108718002	3/6/2017	172	CO-58	0	0	6.10467	Water
108718002	3/6/2017	172	CO-60	0	0	7.72343	Water

108718002	3/6/2017	172	CS-134	0	0	5.6558	Water
108718002	3/6/2017	172	CS-137	0	0	8.20159	Water
108718002	3/6/2017	172	FE-59	0	0	7.94356	Water
108718002	3/6/2017	172	J-131	0	0	6.61485	Water
108718002	3/6/2017	172	K-40	0	0	91.9052	Water
108718002	3/6/2017	172	LA-140	0	0	9.88824	Water
108718002	3/6/2017	172	MN-54	0	0	4.98351	Water
108718002	3/6/2017	172	NB-95	0	0	3.08869	Water
108718002	3/6/2017	172	RA-226	0	0	0	Water
108718002	3/6/2017	172	RA-228	0	0	0	Water
108718002	3/6/2017	172	ZN-65	0	0	14.7588	Water
108718002	3/6/2017	172	ZR-95	0	0	4.62284	Water
109186002	4/4/2017	172	BA-140	0	0	28.5761	Water
109186002	4/4/2017	172	BE-7	0	0	53.169	Water
109186002	4/4/2017	172	CO-58	0	0	5.54954	Water
109186002	4/4/2017	172	CO-60	0	0	6.83746	Water
109186002	4/4/2017	172	CS-134	0	0	6.42265	Water
109186002	4/4/2017	172	CS-137	0	0	3.22086	Water
109186002	4/4/2017	172	FE-59	0	0	9.19411	Water
109186002	4/4/2017	172	J-131	0	0	3.72674	Water
109186002	4/4/2017	172	K-40	0	0	107.628	Water
109186002	4/4/2017	172	LA-140	0	0	8.43181	Water
109186002	4/4/2017	172	MN-54	0	0	5.30913	Water
109186002	4/4/2017	172	NB-95	0	0	6.07151	Water
109186002	4/4/2017	172	RA-226	0	0	0	Water
109186002	4/4/2017	172	RA-228	0	0	0	Water
109186002	4/4/2017	172	ZN-65	0	0	9.65407	Water
109186002	4/4/2017	172	ZR-95	0	0	9.76665	Water
109238002	4/4/2017	172	H3	258	178	--	Water
109662002	5/1/2017	172	BA-140	0	0	16.0659	Water
109662002	5/1/2017	172	BE-7	0	0	73.3464	Water
109662002	5/1/2017	172	CO-58	0	0	7.34468	Water
109662002	5/1/2017	172	CO-60	0	0	4.34821	Water
109662002	5/1/2017	172	CS-134	0	0	6.27696	Water
109662002	5/1/2017	172	CS-137	0	0	6.98379	Water
109662002	5/1/2017	172	FE-59	0	0	9.08458	Water
109662002	5/1/2017	172	J-131	0	0	5.61198	Water
109662002	5/1/2017	172	K-40	0	0	101.724	Water
109662002	5/1/2017	172	LA-140	0	0	10.9797	Water
109662002	5/1/2017	172	MN-54	0	0	5.00642	Water
109662002	5/1/2017	172	NB-95	0	0	4.31273	Water
109662002	5/1/2017	172	RA-226	0	0	0	Water
109662002	5/1/2017	172	RA-228	0	0	0	Water
109662002	5/1/2017	172	ZN-65	0	0	15.3502	Water
109662002	5/1/2017	172	ZR-95	0	0	12.6456	Water
110260002	6/5/2017	172	BA-140	0	0	25.8072	Water
110260002	6/5/2017	172	BE-7	0	0	36.0762	Water

110260002	6/5/2017	172	CO-58	0	0	7.46876	Water
110260002	6/5/2017	172	CO-60	0	0	7.45957	Water
110260002	6/5/2017	172	CS-134	0	0	3.71208	Water
110260002	6/5/2017	172	CS-137	0	0	7.56435	Water
110260002	6/5/2017	172	FE-59	0	0	13.4109	Water
110260002	6/5/2017	172	J-131	0	0	8.67606	Water
110260002	6/5/2017	172	K-40	0	0	146.966	Water
110260002	6/5/2017	172	LA-140	0	0	10.606	Water
110260002	6/5/2017	172	MN-54	0	0	7.36862	Water
110260002	6/5/2017	172	NB-95	0	0	6.51961	Water
110260002	6/5/2017	172	RA-226	0	0	0	Water
110260002	6/5/2017	172	RA-228	0	0	0	Water
110260002	6/5/2017	172	ZN-65	0	0	11.5712	Water
110260002	6/5/2017	172	ZR-95	0	0	6.91995	Water
110802002	7/6/2017	172	BA-140	0	0	15.7619	Water
110802002	7/6/2017	172	BE-7	0	0	60.1137	Water
110802002	7/6/2017	172	CO-58	0	0	4.47114	Water
110802002	7/6/2017	172	CO-60	0	0	7.30526	Water
110802002	7/6/2017	172	CS-134	0	0	5.50489	Water
110802002	7/6/2017	172	CS-137	0	0	4.21975	Water
110802002	7/6/2017	172	FE-59	0	0	8.48695	Water
110802002	7/6/2017	172	J-131	0	0	5.45947	Water
110802002	7/6/2017	172	K-40	0	0	108.478	Water
110802002	7/6/2017	172	LA-140	0	0	10.3664	Water
110802002	7/6/2017	172	MN-54	0	0	7.97194	Water
110802002	7/6/2017	172	NB-95	0	0	6.55692	Water
110802002	7/6/2017	172	RA-226	0	0	0	Water
110802002	7/6/2017	172	RA-228	0	0	0	Water
110802002	7/6/2017	172	ZN-65	0	0	5.95989	Water
110802002	7/6/2017	172	ZR-95	0	0	13.439	Water
110870002	7/6/2017	172	H3	-15.3	168	141	Water
111884002	9/5/2017	172	BA-140	0	0	25.2258	Water
111884002	9/5/2017	172	BE-7	0	0	31.9584	Water
111884002	9/5/2017	172	CO-58	0	0	3.53804	Water
111884002	9/5/2017	172	CO-60	0	0	8.43466	Water
111884002	9/5/2017	172	CS-134	0	0	3.32945	Water
111884002	9/5/2017	172	CS-137	0	0	7.89074	Water
111884002	9/5/2017	172	FE-59	0	0	6.23078	Water
111884002	9/5/2017	172	J-131	0	0	8.86427	Water
111884002	9/5/2017	172	K-40	0	0	135.424	Water
111884002	9/5/2017	172	LA-140	0	0	9.26891	Water
111884002	9/5/2017	172	MN-54	0	0	5.43741	Water
111884002	9/5/2017	172	NB-95	0	0	9.07868	Water
111884002	9/5/2017	172	RA-226	0	0	0	Water
111884002	9/5/2017	172	RA-228	0	0	0	Water
111884002	9/5/2017	172	ZN-65	0	0	7.8629	Water
111884002	9/5/2017	172	ZR-95	0	0	12.1086	Water

112432002	10/3/2017	172	BA-140	0	0	14.3151	Water
112432002	10/3/2017	172	BE-7	0	0	21.917	Water
112432002	10/3/2017	172	CO-58	0	0	4.80639	Water
112432002	10/3/2017	172	CO-60	0	0	5.42482	Water
112432002	10/3/2017	172	CS-134	0	0	3.11277	Water
112432002	10/3/2017	172	CS-137	0	0	2.76865	Water
112432002	10/3/2017	172	FE-59	0	0	11.4415	Water
112432002	10/3/2017	172	J-131	0	0	2.89457	Water
112432002	10/3/2017	172	K-40	0	0	89.2803	Water
112432002	10/3/2017	172	LA-140	0	0	4.4314	Water
112432002	10/3/2017	172	MN-54	0	0	5.28141	Water
112432002	10/3/2017	172	NB-95	0	0	2.77947	Water
112432002	10/3/2017	172	RA-226	0	0	0	Water
112432002	10/3/2017	172	RA-228	0	0	0	Water
112432002	10/3/2017	172	ZN-65	0	0	4.51273	Water
112432002	10/3/2017	172	ZR-95	0	0	7.86039	Water
112456002	10/3/2017	172	H3	154	164	292	Water
112999002	11/6/2017	172	BA-140	0	0	10.4423	Water
112999002	11/6/2017	172	BE-7	0	0	32.5496	Water
112999002	11/6/2017	172	CO-58	0	0	3.5821	Water
112999002	11/6/2017	172	CO-60	0	0	4.74921	Water
112999002	11/6/2017	172	CS-134	0	0	2.65645	Water
112999002	11/6/2017	172	CS-137	0	0	5.9609	Water
112999002	11/6/2017	172	FE-59	0	0	6.35399	Water
112999002	11/6/2017	172	J-131	0	0	5.00995	Water
112999002	11/6/2017	172	K-40	0	0	88.6648	Water
112999002	11/6/2017	172	LA-140	0	0	4.03548	Water
112999002	11/6/2017	172	MN-54	0	0	4.85745	Water
112999002	11/6/2017	172	NB-95	0	0	4.62414	Water
112999002	11/6/2017	172	RA-226	0	0	0	Water
112999002	11/6/2017	172	RA-228	0	0	0	Water
112999002	11/6/2017	172	ZN-65	0	0	6.29267	Water
112999002	11/6/2017	172	ZR-95	0	0	4.67885	Water
113368002	12/6/2017	172	BA-140	0	0	27.0006	Water
113368002	12/6/2017	172	BE-7	0	0	53.9931	Water
113368002	12/6/2017	172	CO-58	0	0	4.57461	Water
113368002	12/6/2017	172	CO-60	0	0	3.26272	Water
113368002	12/6/2017	172	CS-134	0	0	4.01955	Water
113368002	12/6/2017	172	CS-137	0	0	3.5907	Water
113368002	12/6/2017	172	FE-59	0	0	10.2018	Water
113368002	12/6/2017	172	J-131	0	0	5.1699	Water
113368002	12/6/2017	172	K-40	0	0	85.22	Water
113368002	12/6/2017	172	LA-140	0	0	9.26395	Water
113368002	12/6/2017	172	MN-54	0	0	3.8311	Water
113368002	12/6/2017	172	NB-95	0	0	6.86332	Water
113368002	12/6/2017	172	RA-226	0	0	0	Water
113368002	12/6/2017	172	RA-228	0	0	0	Water

113368002	12/6/2017	172	ZN-65	0	0	11.3999	Water
113368002	12/6/2017	172	ZR-95	0	0	5.65071	Water

Direct Radiation

	Q1	Q2	Q3	Q4
H064A	13.522	12.250	11.563	9.534
H101A	13.114	12.724	11.809	9.261
H102A	14.467	12.329	12.377	10.342
H103A	12.594	12.817	12.354	11.735
H104A	17.619	16.770	17.371	14.221
H105A	13.096	13.613	13.497	11.900
H106A	11.263	11.162	11.033	10.656
H107A	11.749	11.248	9.145	9.138
H108A	15.150	11.966	12.850	--
H109A	13.799	13.057	10.708	11.552
H110A	13.619	12.653	13.196	10.503
H111A	11.950	10.984	10.836	7.999
H112A	11.327	11.339	12.352	8.737
H113A	12.834	10.988	11.072	--
H114A	12.450	13.001	13.648	12.613
H115A	20.273	20.591	18.727	17.591
H116A	10.623	10.302	9.835	9.072
H201A	15.910	13.977	13.358	10.674
H202A	12.352	11.635	10.191	10.391
H203A	16.936	14.948	15.567	14.301
H204A	13.639	13.265	11.496	9.984
H205A	13.900	12.745	13.358	10.338
H206A	10.487	10.925	8.895	8.665
H207A	11.480	11.578	--	7.880
H208A	11.869	11.427	11.122	10.129
H209A	11.769	9.567	11.563	7.791
H210A	10.338	9.838	8.911	8.797
H211A	12.592	11.891	11.428	10.531
H212A	11.484	12.318	11.071	9.033
H213A	12.745	11.602	10.490	11.105
H214A	16.522	17.023	17.503	14.514
H215A	16.537	15.740	17.368	13.374
H216A	12.447	13.542	12.016	9.271
H301A	14.169	12.624	10.697	10.311
H304A	14.101	11.583	10.412	11.058
H309A	12.050	10.067	11.478	8.304
H416A	13.337	12.551	12.939	10.355

Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2017

Enclosure 2

Farley Annual Radiological Environmental Operating Report for 2017

JOSEPH M. FARLEY NUCLEAR PLANT
2017 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Southern Nuclear

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LIST OF ACRONYMS

ADEM	Alabama Department of Environmental Management
APC	Alabama Power Company
AREOR	Annual Radiological Environmental Operating Report
ASTM	American Society for Testing and Materials
CL	Confidence Level
EPA	Environmental Protection Agency
GA EPD	State of Georgia Environmental Protection Division
FNP	Joseph M. Farley Nuclear Plant
GPCEL	Georgia Power Company Environmental Laboratory
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWe	MegaWatts Electric
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSL	Optically Stimulated Luminescence
Po	Preoperation
PWR	Pressurized Water Reactor
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
TLD	Thermoluminescent Dosimeter
TS	Technical Specification

1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) is conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 2017 are reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP are to:

1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
2) Assess the radiological impact (if any) to the environment due to the operation of the Joseph M. Farley Nuclear Plant (FNP).

The assessments include comparisons between results of analyses of samples obtained at locations where radiological levels are not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels are more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

FNP is owned by Alabama Power Company (APC) and operated by Southern Nuclear Operating Company (SNC). The plant is located in Houston County, Alabama approximately fifteen miles east of Dothan, Alabama on the west bank of the Chattahoochee River. Unit 1, a Westinghouse Electric Corporation Pressurized Water Reactor (PWR) with a licensed core thermal power output of 2775 MegaWatts thermal (MWt), achieved initial criticality on August 9, 1977 and was declared "commercial" on December 1, 1977. Unit 2, also a 2775 MWt Westinghouse PWR, achieved initial criticality on May 8, 1981 and was declared "commercial" on July 30, 1981.

The preoperational stage of the REMP began with initial sample collections in January of 1975. The transition from the preoperational to the operational stage of the REMP was marked by Unit 1 initial criticality.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results and an assessment of any radiological impacts to the environment as well as the results from the Interlaboratory Comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5

2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed in order to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, the locations of the sampling stations are depicted on Maps A-1 through A-3 of the station locations included in the Appendix A of this report. Any Errata from previous reports are provided in Appendix B.

Plant personnel collect some samples, while others are collected by Alabama Power Company Environmental Affairs field team. The Georgia Power Environmental (GPCEL) lab analyzes all REMP samples.

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	Forty routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each compass sector in the general area of the site boundary; An outer ring of stations, one in each compass sector at approximately 5 miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations	Quarterly	Gamma dose, quarterly
Airborne Radioiodine and Particulates	Samples from eight locations: Three locations close to the site boundary in different sectors; Three community stations; within 8 miles Two control locations near population centers, approximately 15 and 18 miles away	Continuous sampler operation with sample collection weekly	Particulate sampler: Analyze for gross beta radioactivity ≥ 24 hours following filter change. Perform gamma isotopic analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite sample (by location) quarterly. Radioiodine canister: I-131 analysis, weekly (One community station)
Waterborne			
Surface[3]	One sample upriver One sample downriver	Composite sample over one month period[4]	Gamma isotopic analysis[2], monthly Composite for tritium analysis, quarterly

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Groundwater	Off-site monitoring includes one indicator station and one control station See Table 3-8 and Map A-4 in Appendix A for on-site well locations. These are part of the GWPP (NEI 07-07).	Quarterly Frequency based on GWPP	Off-site wells are analyzed only for Gamma Isotopic, I-131, & tritium Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment[7]	• One sample from downriver area with existing or potential recreational value • One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis[2], semiannually
Ingestion			
Milk	Two samples from milking animals[5] at control locations at a distance of about 10 miles or more	Bimonthly	Gamma isotopic analysis[2,6], bimonthly
Fish[8]	• One bottom feeding fish and one game fish both upstream and downstream	Semiannually During spring/fall spawning season	Gamma isotopic analysis[2] on edible portions, semiannually Gamma isotopic analysis[2] on edible portions, annually.
Grass or Leafy Vegetation	• One sample from two onsite locations near the site boundary in different sectors • One sample from a control location at a distance of about 18 miles	Monthly during growing season	Gamma isotopic analysis[2,6], monthly

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Notes: [1]Airborne particulate sample filters shall be analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples is greater than 10 times the yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples. [2]Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility. [3]Upriver sample is taken at a distance beyond significant influence of the discharge. Downriver samples are taken beyond but near the mixing zone. [4]Composite sample aliquots shall be collected at time intervals that are very short (e.g., hourly) relative to the compositing period (e.g., monthly) to assure obtaining a representative sample. [5]A milking animal is a cow or goat producing milk for human consumption, no milk animals were found within five miles of the plant. [6]If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed. [7]These collections are normally made at river mile 41.3 for the indicator station and river mile 47.8 for the control station; however, due to river bottom sediment shifting caused by high flows, dredging, etc., collections may be made from river mile 40 to 42 for the indicator station and from river mile 47 to 49 for the control station. [8] Since several miles of river water may be needed to obtain adequate fish samples, these river mile positions represent the approximate locations from which the fish are taken. Collections for the indicator station should be from river mile 37.5 to 42.5 and for the control station from river mile 47 to 52.			

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
0501	Indicator	River Intake Structure (Spare)	ESE	0.8	Airborne
0701	Indicator	South-southeast Perimeter	SSE	1.0	Airborne
1101	Indicator	Plant Entrance	WSW	0.9	Airborne
1601	Indicator	North Perimeter	N	0.8	Airborne
0215	Control	Blakely GA	NE	15	Airborne, Direct
0718[3]	Control	Neals Landing, FL	SSE	18	Airborne, Direct
1218	Control	Dothan, AL	W	18	Airborne, Direct, Vegetation
0703	Community	GA Pacific Paper Co.	SSE	3	Airborne, Direct
1108	Community	Ashford, AL	WSW	8	Airborne
1605	Community	Columbia, AL	N	5	Airborne, Direct
0101	Indicator	Plant Perimeter	NNE	0.9	Direct
0201	Indicator	Plant Perimeter	NE	1.0	Direct
0301	Indicator	Plant Perimeter	ENE	0.9	Direct
0401	Indicator	Plant Perimeter	E	0.8	Direct
0501	Indicator	Plant Perimeter	ESE	0.8	Direct
0601	Indicator	Plant Perimeter	SE	1.1	Direct
0701	Indicator	Plant Perimeter	SSE	1.0	Direct, Vegetation
0801	Indicator	Plant Perimeter	S	1.0	Direct
0901	Indicator	Plant Perimeter	SSW	1.0	Direct
1001	Indicator	Plant Perimeter	SW	0.9	Direct
1101	Indicator	Plant Perimeter	WSW	0.9	Direct
1201	Indicator	Plant Perimeter	W	0.8	Direct
1301	Indicator	Plant Perimeter	WNW	0.8	Direct
1401	Indicator	Plant Perimeter	NW	1.1	Direct
1501	Indicator	Plant Perimeter	NNW	0.9	Direct
1601	Indicator	Plant Perimeter	N	0.8	Direct, Vegetation
1215	Control	Dothan, AL	W	15	Direct
1311	Control	Webb, AL	W	11	Direct
1612	Control	Haleburg, AL	WNW	12	Direct
1001	Community	Whatley Residence	SW	12	Direct
1108	Community	Ashford, AL	WSW	8.0	Direct
WRI	Indicator	Downstream of plant discharge, approximately RM 40	S	3.0	River Water
WRB	Control	Upstream of plant intake, approximately RM 47	NNE	3.0	River Water
WGI-07	Indicator	Paper Mill Well	SSE	4.0	Groundwater
WGB-10	Control	Whatley Residence	SW	1.2	Groundwater

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
RSI	Indicator	Downstream of plant discharge at Smith's Bend (RM 41)	S	4.0	Sediment
RSB	Control	Upstream of plant intake at Andrews Lock and Dam (RM 48)	N	4.0	Sediment
MB-0714	Control[2]	Robert Weir Dairy, Donaldsonville, GA	SSE	14	Milk
FGI & FGB	Indicator	Downstream of plant discharge at Smith's Bend (RM 41)	S	4.0	Fish
FGB & FBB	Control	Upstream of plant intake at Andrews Lock and Dam (RM 48)	N	4.0	Fish
0104	Community	Early Co., GA	NNE	4.0	Direct
0204	Community	Early Co., GA	NE	4.0	Direct
0304	Community	Early Co., GA	ENE	4.0	Direct
0405	Community	Early Co., GA	E	5.0	Direct
0505	Community	Early Co., GA	ESE	5.0	Direct
0605	Community	Early Co., GA	SE	5.0	Direct
0805	Community	Houston Co., AL	S	5.0	Direct
0904	Community	Houston Co., AL	SSW	4.0	Direct
1005	Community	Houston Co., AL	SW	5.0	Direct
1104	Community	Houston Co., AL	WSW	4.0	Direct
1204	Community	Houston Co., AL	W	4.0	Direct
1304	Community	Houston Co., AL	WNW	4.0	Direct
1404	Community	Houston Co., AL	NW	4.0	Direct
1504	Community	Houston Co., AL	NNW	4.0	Direct

Notes:
[1]Direction and distance are determined as the mid-point between the Unit 1 and Unit 2 vent stacks.
[2] No milk animals were found within five miles of the plant, control sample not collected since 2009.
[3] Spare, per the ODCM

3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 1,019 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980, the Chernobyl incident in the spring of 1986 and the Fukushima accident in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2017, BE-7 was detected during the fourth quarter and the results will be included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions.

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.

Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station versus an indicator or a community station, that can be determined statistically at the 99% Confidence Level (CL). A difference in mean values which was less than the MDD was considered statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

The 2017 results were compared with previous results, including those obtained during pre-operation. As appropriate, results were evaluated against the MDCs (listed in Table 3-1) and RLs (listed in Table 3-2). The required MDCs were achieved during laboratory sample analysis. No data points were excluded for violating Chauvenet's criterion.

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta 416	10	20.7 4.9-45.0 (156/156)	Ashford, AL WSW 8 mi. Community	24.2 7.2-250.4 (52/52)	22.1 6.4-250.4 (156/156)	18.9 4.6-38.6 (104/104)
	Gamma Isotopic 32						
	Be-7	24	90.8 77.8-107 (12/12)	South Perimeter SSE 1.0 mi. Indicator	95.4 78.9-107 (4/4)	79.8 65.3-94.7 (12/12)	79.2 66.0-95.9 (8/8)
	I-131	70	NDM(c)		NDM	NDM	NDM
	Cs-134	50	NDM		NDM	NDM	NDM
	Cs-137	60	NDM		NDM	NDM	NDM
Airborne Radioiodine(fCi/m3)	I-131 312	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 160		16.9 9.5-28.2 (64/64)	Plant Perimeter, E 0.8 mi Indicator	25.4 21.7-28.2 (4/4)	14.2 10.4-18.7 (72/72)	16.9 11.9-24.9 (24/24)
Milk (pCi/l)	Gamma Isotopic 0						
	I-131	1					
	Cs-134	15					
	Cs-137	18					
	Ba-140	60					
	La-140	15					
Vegetation (pCi/kg-wet)	Gamma Isotopic 36						

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Be-7	729	1352 427-3169 (24/24)	North Perimeter N 0.8 Indicator	1451 610-3169 (12/12)		1317 507-3370 (12/12)
	I-131	60	NDM				NDM
	Cs-134	60	NDM				NDM
	Cs-137	80	NDM	Dothan, AL W 18 mi. Control	8.4 7.6-9.1 (2/12)		8.4 7.6-9.1 (2/12)
River Water (pCi/l)	Gamma Isotopic 26						
	Mn-54	15	NDM		NDM	NDM	NDM
	Fe-59	30	NDM		NDM	NDM	NDM
	Co-58	15	NDM		NDM	NDM	NDM
	Co-60	15	NDM		NDM	NDM	NDM
	Zn-65	30	NDM		NDM	NDM	NDM
	Zr-95	30	NDM		NDM	NDM	NDM
	Nb-95	15	NDM		NDM	NDM	NDM
	I-131	15	NDM		NDM	NDM	NDM
	Cs-134	15	NDM		NDM	NDM	NDM
	Cs-137	18	NDM		NDM		
	Ba-140	60	NDM		NDM		
	La-140	15	NDM		NDM		
	Tritium 8	3000	190.7 175-204 (3/4)	Paper Mill (RM 40) Indicator	190.7 175-204 (3/4)		141.6 15.2-268 (2/4)
Off-site Groundwater	Gamma Isotopic 8						

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	15	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
	Tritium 8	2000	66.7 23.5-133 (4/4)	Paper Mill Well SSE 4 mi. Indicator	66.7 23.5-133 (4/4)		57.2 10.3-104 (2/4)
Bottom Feeding Fish (pCi/kg-wet)	Gamma Isotopic 4						
	Mn-54	130	NDM		NDM		NDM
	Fe-59	260	NDM		NDM		NDM
	Co-58	130	NDM		NDM		NDM
	Co-60	130	NDM		NDM		NDM
	Zn-65	260	NDM		NDM		NDM
	Cs-134	130	NDM		NDM		NDM
	Cs-137	150	14.9 14.9-14.9 (1/2)	Downstream of plant discharge near Smith's Bend (RM 41) - Indicator	14.9 14.9-14.9 (1/2)		NDM

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Game Fish (pCi/kg-wet)	Gamma Isotopic 4						
	Mn-54	130	NDM		NDM		NDM
	Fe-59	260	NDM		NDM		NDM
	Co-58	130	NDM		NDM		NDM
	Co-60	130	NDM		NDM		NDM
	Zn-65	260	NDM		NDM		NDM
	Cs-134	130	NDM		NDM		NDM
	Cs-137	150	21.0 17.1-24.9 (2/2)	Downstream of plant discharge near Smith's Bend (RM 41) - Indicator	21.0 17.1-24.9 (2/2)		NDM
Sediment (pCi/kg-dry)	Gamma Isotopic 4						
	Co-60	70	NDM		NDM		NDM
	Cs-134	150	NDM		NDM		NDM
	Cs-137	180	NDM		NDM		NDM

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		

Notes:

(a)The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.

(b) Mean and range are based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.

(c) No Detectable Measurement(s) (NDM).

(d) The Georgia Power Company Environmental Laboratory has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.

(e) Item 3 of ODCM Table 4-1 implies that an I-131 analysis is not required to be performed on water samples when the dose calculated from the consumption of water is less than 1 mrem per year. However, I-131 analyses have been performed on the finished drinking water samples.

(f) "Other" stations, as identified in the "Station Type" column of Table 2-2, are "Community" and/or "Special" stations.

Not Applicable (sample not required)

Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m3)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000[a]				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2[b]	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

[a] This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.
[b] If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule are permitted, if samples are unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolutions.

Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
12/27/16 - 01/04/17 CR 10314374	PI-1601/II-1601 0.8 mile - N	(A) Non-representative sample of airborne iodine and particulates	Lost 15.5 hours of sample time due to storms taking out equipment supplying power to station.	Station operation satisfactory after normal power restored.
01/17/17 - 01/24/17 CR 10322190	PI-1601/II-1601 0.8 mile - N	(A) Non-representative sample of airborne iodine and particulates	Lost 53.9 hours of sample time due to lightning strike to transformer supplying power to station.	Station operation satisfactory after normal power restored.
03/21/17 - 03/28/17 CR 10348596	PI-1601/II-1601 0.8 mile - N	(A) Non-representative sample of airborne iodine and particulates	Lost 45.2 hours of sample time due to loss of power to transmission lines feeding station.	Station operation satisfactory after normal power restored.
04/11/17 - 04/18/17 CR 10355691	PB-0215/IB-0215 15 miles - NE	(A) Non-representative sample of airborne iodine and particulates	Lost 86.8 hours of sample time after local breaker on sampler tripped off due to power spike.	Station operation satisfactory after normal power restored.
4/18/17 – 04/25/17 CR 10358196	PB-1218/IB-1218 18 miles - W	(A) Non-representative sample of airborne iodine and particulates	Lost 158.6 hours of sample time after local breaker on sampler tripped off due to power spike.	Station operation satisfactory after normal power restored.
06/13/17 – 06/20/17 CR 10379027	PC-1108 8 miles - WSW	(A) Non-representative sample of airborne iodine and particulates	Lost 158.8 hours of sample time after local breaker on sampler tripped off during thunderstorm.	Station operation satisfactory after normal power restored.
08/08/17 - 08/15/17 CR 10398803	PB-0215/IB-0215 15 miles - NE	(A) Non-representative sample of airborne iodine and particulates	Lost 89.5 hours of sample time after local breaker on sampler tripped off during thunderstorm.	Station operation satisfactory after normal power restored.
08/15/17 - 08/22/17 CR 10400976	PC-1108 8 miles - WSW	(A) Low air flow measurement on totalizer display	Flow turbine not operating correctly, due to fine debris passing through sampler	Sample flow verified adequate; starting flowrate (48 LPM) used in volume estimation for the sample period. Flow turbine restored to normal function.
09/05/17 - 09/13/17 CR 10408500	PC-1605 5 miles - N	(A) Non-representative sample of airborne particulates	Lost 50.8 hours of sample time due to maintenance outage on transformer supplying power to station	Alternate power supply used during remainder of maintenance outage, then return to normal power.
10/24/17 - 10/31/17 CR 10426179	PB-1218/IB-1218 18 miles - W	(A) Non-representative sample of airborne iodine and particulates	Lost 147.2 hours of sample time after local breaker on sampler tripped off due to power spike.	Station operation satisfactory after normal power restored.

* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Labs procedures.
** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Labs

3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters are collected weekly at three indicator stations (Stations 0701, 1101, and 1601) which encircle the plant at the site periphery, at three community station (0703, 1108, and 1605) approximately three to eight miles from the plant, and at three control stations (0215 and 1218) which range from approximately 15 to 18 miles from the plant. At each location, air is continuously drawn through a glass fiber filter to retain airborne particulate. An activated charcoal canister is also placed in series with the particulate filter to adsorb radioiodine at each indicator/control station and at community station 0703 in Cedar Springs, GA for comparison purposes with EPD.

3.1.1 Gross Beta

As provided in Table 3-1, the 2017 annual average weekly gross beta activity was 20.7 fCi/m3 for the indicator stations. It was 1.8 fCi/m3 greater than the control station average of 18.9 fCi/m3 for the year. The difference is less than the calculated MDD of 2.6 fCi/L, so the difference is not statistically discernible.

The 2017 annual average weekly gross beta activity at the community stations was 22.1 fCi/m3 which was 3.2 fCi/m3 more than the control station average. This difference was less than the MDD calculated at 6.0 fCi/m3.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there is close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant is not contributing significantly to the gross beta concentrations in air.

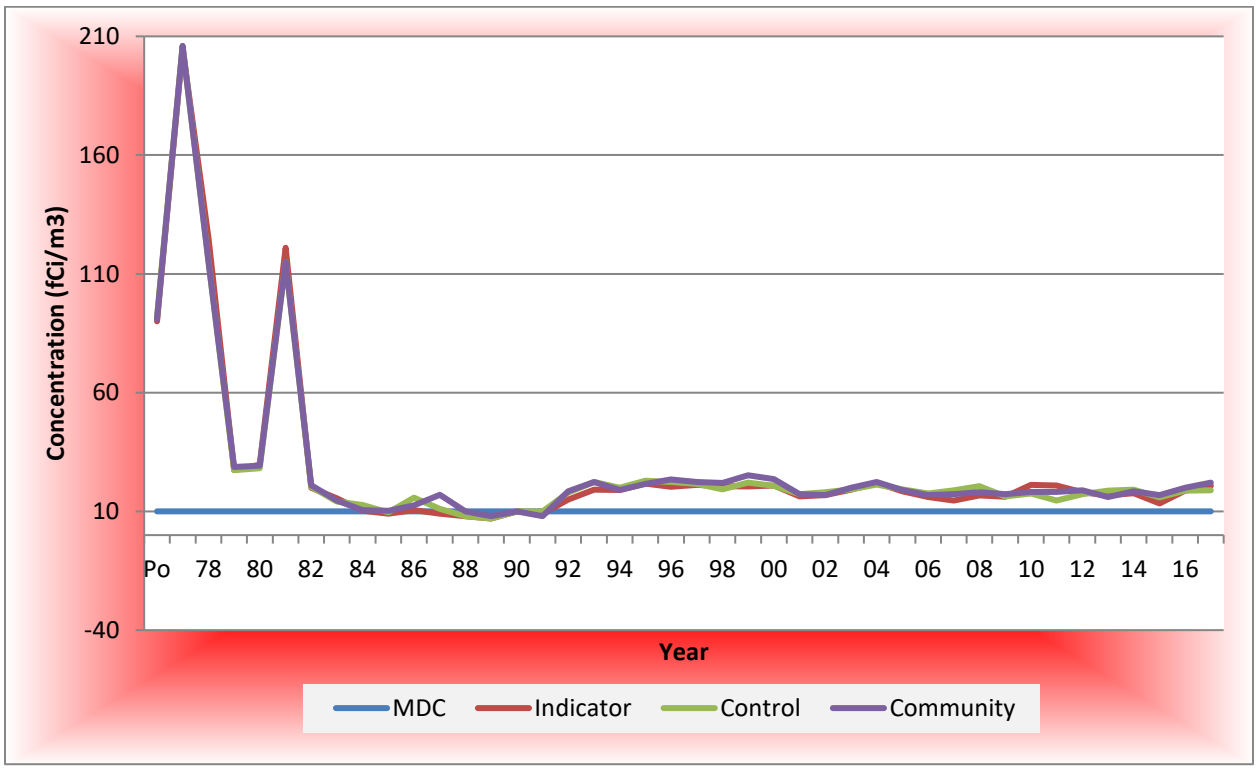
Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
Pre-op	90	92	91		1997	21.1	21.6	22.4
1977	205	206	206		1998	20.6	19.3	22.0
1978	125	115	115		1999	20.5	22.1	25.2
1979	27.3	27.3	28.7		2000	20.9	20.8	23.6
1980	29.7	28.1	29.2		2001	16.3	17.2	17.3
1981	121	115	115		2002	16.8	18	16.8
1982	20.0	20.4	21.0		2003	19.1	19.3	19.9
1983	15.5	14.1	14.5		2004	22.0	21.3	22.4
1984	10.2	12.6	10.5		2005	18.4	19.3	19.0
1985	9.0	9.6	10.3		2006	16.1	17.5	16.8
1986	10.5	15.8	12.5		2007	14.5	18.9	17.3
1987	9.0	11.0	17.0		2008	16.7	20.6	18.0
1988	8	8	10		2009	16.2	16.3	17.3

Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
1989	7	7	8		2010	21.2	17.5	18.2
1990	10	10	10		2011	20.9	14.5	18.2
1991	9	10	8		2012	18.0	17.3	18.9
1992	15	17.9	18.5		2013	16.7	18.7	16.1
1993	19.1	22.3	22.4		2014	17.7	19.1	18.5
1994	19.0	20.0	19.0		2015	13.4	15.9	16.8
1995	21.7	22.9	21.6		2016	18.7	18.8	19.9
1996	20.3	22.3	23.5		2017	20.7	18.9	22.1

Figure 3-1. Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates and Radioiodine

During 2017, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters other than Be-7. While the level of Be-7 detected in plant releases during the fourth quarter, the indicator, control and community stations all consistently show levels of Be-7 throughout the 2017 year. The indicator average in

air particulate filter composites was 90.8 fCi/ m3, while the control and community averages were 79.2 fCi/ m3 and 79.8 fCi/m3, respectively. The MDD between the indicator and control was calculated to be 6.5 fCi/m3, indicating that there was a statistically significant difference between the two averages; however, it is clear from the data that Be-7 is only periodically released as a result of plant activity and plant operations are not negatively affecting the surrounding environment.

I-131 was not detected in the air cartridges at either the indicator or control stations in 2017. Historically, gamma isotopes have been detected as a result of offsite events. During pre-operation, Cs-137 was occasionally detected.

3.2 Direct Radiation

In 2017, direct (external) radiation was measured with Optically Stimulated Luminescent (OSL) dosimeters by placing two OSL badges at each station. The gamma dose at each station is reported as the average reading of the two badges. The badges are analyzed on a quarterly basis. An inspection is performed near mid-quarter for offsite badges to assure that the badges are on-station and to replace any missing or damaged badges.

Two direct radiation stations are established in each of the 16 compass sectors, to form two concentric rings. The inner ring (Stations 0101 through 1601) is located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring (Stations 0104 through 1605) is located at approximately 5 miles (varying distances) from the plant as shown in Map A-2 in Appendix A. The 16 stations forming the inner ring are designated as the indicator stations. The two-ring configuration of stations was established in accordance with NRC Branch Technical Position “An Acceptable Radiological Environmental Monitoring Program”, Revision 1, November 1979. The six control stations (Stations 0215, 0718, 1215, 1218, 1311 and 1612) are located at varying distances greater than 10 miles from the plant as shown in Map A-3 in Appendix A. Monitored special interest areas consist of the following: Station 1001 which is the nearest residence to the plant, and Station 1108 in the town of Ashford, Alabama. The mean and range values presented in the “Other” column in Table 3-1 includes the outer ring stations (stations 0104 through 1605) as well as stations 1001 and 1108.

As provided in Table 3-1, the 2017 average quarterly exposure at the indicator stations (inner ring) was 16.9 mR with a range of 14.4 to 25.4 mR. The indicator station average was equal to the control station average (16.9 mR; range 13.7-23.0 mR). The MDD does not apply since the average values were the same. These values are consistent with historical readings, where the indicator and control are closely correlated.

The quarterly exposures acquired at the community/other (outer ring) stations during 2017 ranged from 11.3 to 17.2 mR with an average of 14.2 mR which was 2.7 mR less than that of the control stations (16.9 mR). Again, the MDD does not apply since the average is less than that of the control average.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values is attributed to a change in TLDs from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change. The increase shown in 2010 reflects issues with the aging Panasonic TLD reader. The close agreement between the station groups supports the position that the plant is not contributing significantly to direct radiation in the environment.

Figure 3-3 provides a more detailed view of the 2017 values. The values for the indicator and special interest areas detailed below indicate that Plant Farley did not significantly contribute to direct radiation at those areas.

Table 3-5. Average Quarterly Exposure from Direct Radiation (Historical)

Period	Indicator (mR)	Control (mR)	Outer Ring (mR)		Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	12.6	11.4	10.1		1997	15.3	13.9	11.9
1977	10.6	12.2	10.6		1998	16.2	14.6	13.9
1978	15	13.5	12		1999	14.7	13.4	12.6
1979	20.3	18.7	15.2		2000	15.5	14.1	13.5
1980	21.9	21.6	18.5		2001	14.9	13.4	12.7
1981	16.5	14.9	14.5		2002	14.1	12.6	11.9
1982	15.5	14.7	13		2003	15.2	13.6	12.9
1983	20.2	20.2	17.4		2004	14.3	12.9	12.1
1984	18.3	16.9	15.3		2005	14.7	13.4	12.5
1985	21.9	22	18		2006	15.2	13.6	12.9
1986	17.8	17.7	15.1		2007	14.6	13.3	12.5
1987	20.8	20.0	18.0		2008	15.0	13.7	12.9
1988	21.5	19.9	18.5		2009	15.2	13.6	12.8
1989	18.0	16.2	15.3		2010	17.8	16.7	15.5
1990	18.9	16.4	15.8		2011	21.0	19.9	18.4
1991	18.4	16.1	16.1		2012	17.4	15.8	14.7
1992	16.1	13.6	13.5		2013	16.5	15.1	13.8
1993	17.4	15.9	15.6		2014	16.7	15.7	14.1
1994	15.0	13.0	12.0		2015	17.1	15.6	14.4
1995	14.0	12.5	11.8		2016	16.3	15.2	13.9
1996	14.2	12.7	11.9		2017	16.9	16.9	14.2

Figure 3-2. Average Quarterly Exposure from Direct Radiation

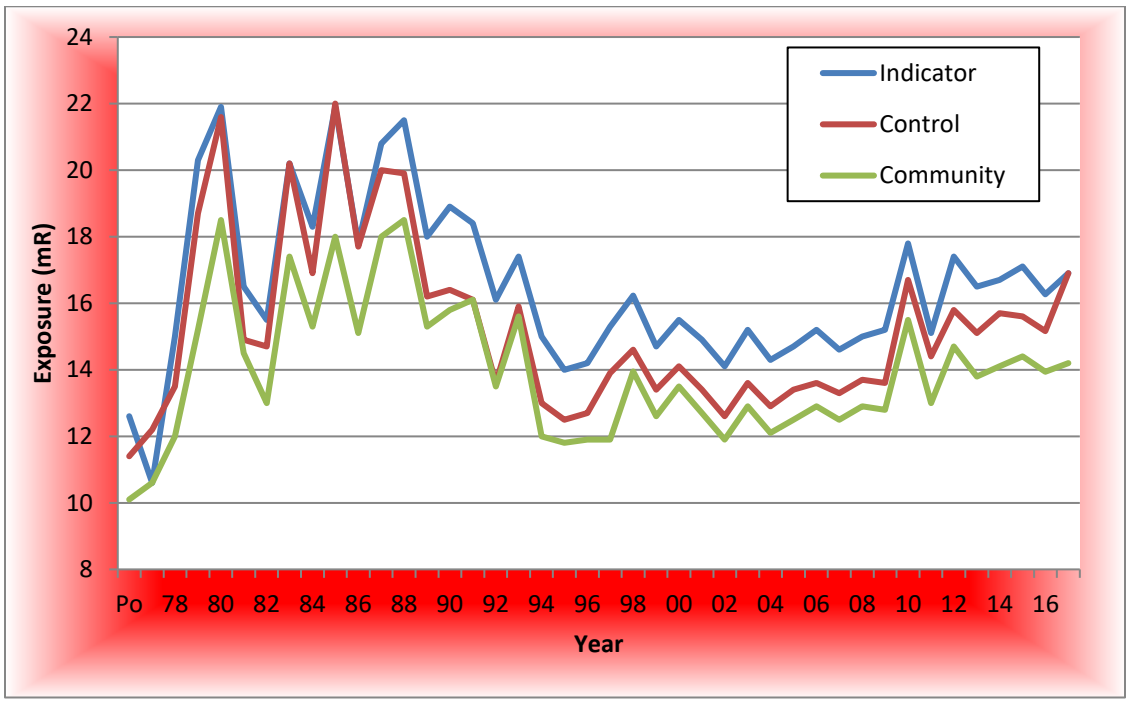
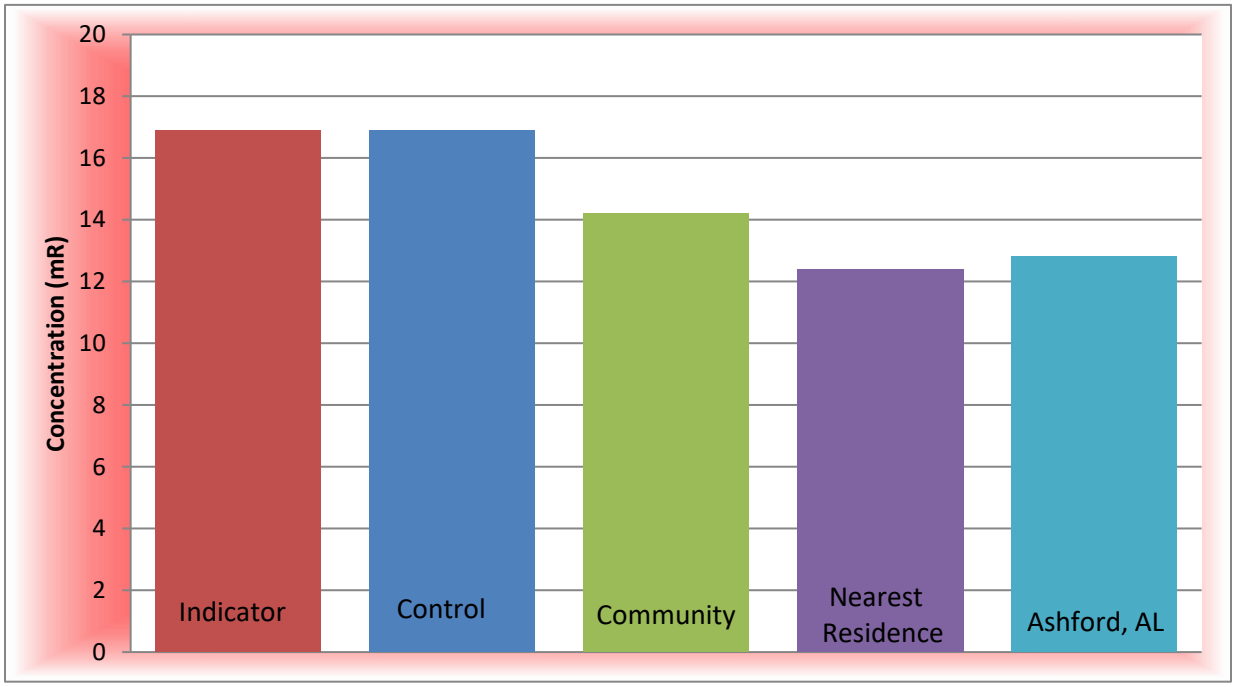


Figure 3-3. 2017 Average Exposure from Direct Radiation in Select Locations



3.3 Biological Media

Cs-137 was the only radionuclide detected in two of the three biological media. As indicated in Figure 3-4, the Cs-137 activity levels are below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

Milk samples had been collected biweekly from a control location until the end of 2009 when the dairy would no longer provide samples. No indicator station (a location within five miles of the plant) has been available for milk sampling since 1987. As discussed in Section 4.0, no milk animals were found within five miles of the plant during the 2017 land use census and no milk sampling was performed during the reporting year.

3.3.2 Vegetation

In accordance with Table 2-1 and 2-2, forage samples are collected every four weeks at two indicator stations on the plant perimeter, and at one control station located approximately 18 miles west of the plant, in Dothan. The man-made radionuclide Cs-137 is periodically identified in vegetation samples, and is generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima).

During 2017, Cs-137 was identified in two samples at the control station, FB-1218-M1 (Dothan, Alabama). The control station average was 8.35 pCi/L (with a range of 7.6-9.1 pCi/L). This average is based only on the detectable values; all other results were below detection limits. No environmental concerns are noted since the results are well below the RL of 2,000 pCi/L for Cs-137 in vegetation.

Be-7 was also detected in vegetation during 2017. The indicator station average was 1,351 pCi/kg-wet. The control average was 1,317 pCi/kg-wet. The MDD between the two averages was 336 pCi/kg-wet, indicating that the difference between the two averages is not statistically significant. This further illustrates the abundance of naturally-occurring Be-7 present in the surrounding environment.

3.3.3 Fish

Two types of fish (bottom-feeding and game) are collected semiannually from the Chattahoochee River at a control station several miles upstream of the plant intake structure and at an indicator station a few miles downstream of the plant discharge structure. These locations are shown in Map A-3 in Appendix A.

3.3.3.1 Bottom Feeding Species

Cs-137 was identified in one sample during a single sampling event with a value of 14.9 pCi/kg. While the control samples did not contain Cs-137, the indicator value is below the MDC (50 pCi/kg) and the RL (2,000 pCi/kg), is consistent with past sample results and is not considered attributable to plant activity.

3.3.3.2 Game Species

Cs-127 was identified in two samples from location FGI-S5 (indicator) at an average value of 21.0 pCi/kg. The control location upstream of the discharge did not contain Cs-137 in the samples. Additionally, the detected indicator values are below the MDC (50 pCi/kg) and the RL (2,000 pCi/kg), are consistent with past sample results and are not considered attributable to plant activity.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2017 biological media samples when compared to historical data. Cs-137 was occasionally present in biological media, as with previous sample results; however, the detections are consistently below both the MDC or RL. No other reportable radionuclides were found from the gamma isotopic analysis of biological media samples in 2017.

3.4 Off-site Groundwater

There are no true indicator sources of offsite ground water near Plant Farley. A well, located approximately four miles south-southeast of the plant on the east bank of the Chattahoochee River, serves Georgia Pacific Paper Company as a source of potable water and is designated as the indicator station. A deep well located about 1.2 miles southwest of the plant, which supplies water to the Whatley residence, is designated as the control station. Samples are collected quarterly and analyzed for gamma isotopic, I-131 and tritium as specified in Table 2-1. In 2017, there were no radionuclides detected in any of the ground water samples from either sample station, apart from tritium.

Since 2004, tritium has been identified at very low concentrations (near the instrument detection level) and close to environmental background levels in off-site groundwater. In 2017, tritium was detected in indicator station WGI-07 at an average of 67 pCi/L (range of 24-133 pCi/L). It was also detected in two of the four quarterly samples at the control station at an average of 57 pCi/L (range of 10-104 pCi/L). These results are very close to the instrument detection limitations and are at concentrations well below the MDC and RL for tritium in drinking water (2,000 and 20,000 pCi/l, respectively). These values represent background conditions for tritium in drinking water and are not attributable to plant activity.

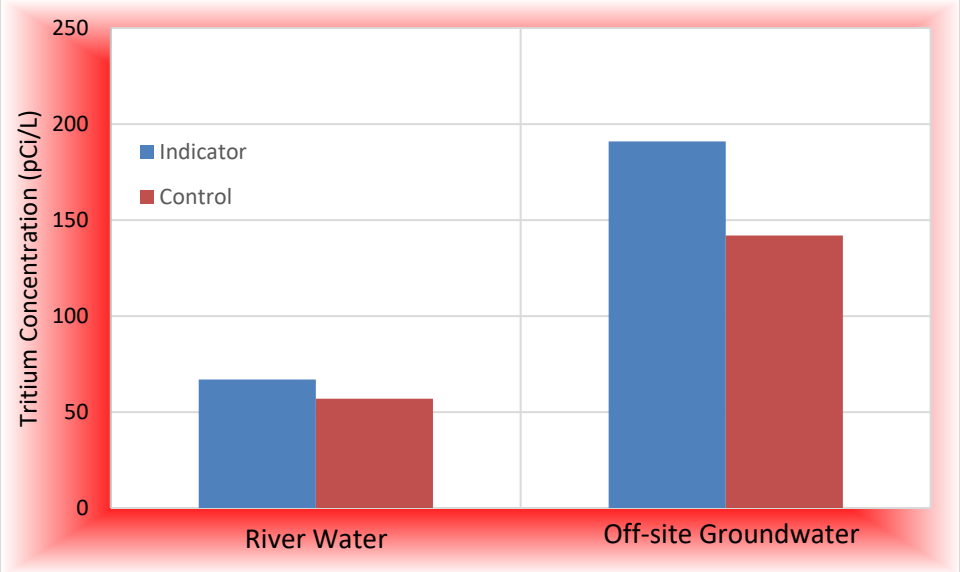
3.5 River Water

Composite river water samples are collected monthly at one upstream control location and one downstream indicator location (shown on Figure 2). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis is conducted on each monthly sample and the monthly aliquots are combined in the lab to form quarterly composite samples, analyzed for tritium.

As provided in Table 3-1, there were no positive results during 2017 from the gamma isotopic analysis of the river water samples. Tritium was detected in three of the four quarterly composites at the indicator station, with an average of 191 pCi/L (range of 175-204). the control station indicated tritium in two of the four composites at an average value of 142 pCi/L (range 15-268 pCi/L). The positive tritium results for both the indicator and control were all less than the MDC and RL limits (2,000 pCi/l and 20,000 pCi/l, respectively) for tritium in a drinking water supply source.

Figure 3-4 below details the 2017 average tritium concentrations across both water mediums.

Figure 3-4. 2017 Average Tritium Concentrations in River and Off-site Groundwater



3.6 Sediment

Sediment was collected along the shoreline of the Chattahoochee River in the spring and fall at a control station which is approximately four miles upstream of the intake structure and at an indicator station which is approximately two miles downstream of the discharge structure as

shown in Map A-3. A gamma isotopic analysis was performed on each sample. There were no reportable radionuclides detected in sediment samples in 2017.

3.7 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participates in an Interlaboratory Comparison Program (ICP) that satisfies the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment", February 1979. The ICP includes the required determinations (sample medium/radionuclide combinations) included in the REMP.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC) materials traceable to the National Institute of Standards and Technology. The ICP is a third party blind testing program which provides a means to ensure independent checks are performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplies the crosscheck samples to GPCEL which performs routine laboratory analyses. Each of the specified analyses is performed three times.

The accuracy of each result is measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation is undertaken whenever the absolute value of the normalized deviation is greater than three or whenever the coefficient of variation is greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation is undertaken when the coefficient of variation exceeds the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limits

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15
* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).			

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2017 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/14/2017	64.15	64.4	2.94	1.08	7.02	-0.06
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/14/2017	74.01	69.4	1.70	1.06	5.87	1.06
Co-58	9/14/2017	98.46	93.2	3.05	1.10	6.01	0.89
Co-60	9/14/2017	211.62	209	3.04	1.53	4.15	0.30
Cr-51	9/14/2017	186.96	173	10.8	2.67	10.9	0.68
Cs-134	9/14/2017	160.43	160	3.44	1.54	4.82	0.06
Cs-137	9/14/2017	149.23	137	6.40	1.34	6.12	1.34
Fe-59	9/14/2017	108.23	100	8.51	1.03	9.38	0.72
Mn-54	9/14/2017	106.8	97.9	4.86	1.72	6.70	1.25
Zn-65	9/14/2017	170.91	147	6.19	2.02	6.56	2.13
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/14/2017	92.28	85.4	1.43	1.43	4.27	1.75
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	6/8/2017	168.15	155	5.78	2.60	6.45	1.21
Co-60	6/8/2017	214.34	191	7.33	3.19	5.45	2.00
Cr-51	6/8/2017	337.84	315	17.3	5.26	11.3	0.60
Cs-134	6/8/2017	216.43	188	7.71	3.14	5.30	2.48
Cs-137	6/8/2017	173.26	150	6.57	2.51	6.44	2.09
Fe-59	6/8/2017	126.48	115	5.58	1.92	9.39	0.97
I-131	6/8/2017	98.08	93.6	5.92	1.56	10.3	0.44
Mn-54	6/8/2017	199.41	172	6.35	2.87	5.95	2.31
Zn-65	6/8/2017	240.6	204	14.4	3.40	8.54	1.78
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	3/16/2017	316.8	280	9.48	4.67	4.76	2.44
	6/8/2017	302.4	270	6.51	4.51	3.34	3.21
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Ce-141	3/16/2017	152.59	145	7.32	2.43	8.12	0.61

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
Co-58	3/16/2017	159.58	150	7.44	2.51	7.29	0.82
Co-60	3/16/2017	192.12	183	7.22	3.06	5.92	0.80
Cr-51	3/16/2017	306.58	291	18.5	4.86	13.62	0.37
Cs-134	3/16/2017	131.24	120	6.49	2.01	6.77	1.27
Cs-137	3/16/2017	153.83	140	3.41	2.34	6.20	1.45
Fe-59	3/16/2017	133.31	129	11.3	2.16	11.23	0.29
I-131	3/16/2017	110.09	97.7	8.22	1.63	13.22	0.85
Mn-54	3/16/2017	177.8	165	6.87	2.75	6.66	1.08
Zn-65	3/16/2017	226.49	200	7.45	3.34	7.17	1.63
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	3/16/2017	10209.4	9980	64.6	167	2.25	1.00
	6/8/2017	14309	14000	78.2	233	2.05	1.05

3.8 Groundwater

To ensure compliance with NEI 07-07, Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs.

Plant Farley maintains the following wells (Table 3-8), which are sampled at a frequency that satisfies the requirements of NEI 07-07. The analytical results for 2017 were all within regulatory limits specified within this report. Table 3-9 contains the results of the Groundwater Protection Program results for tritium (in pCi/L).

Table 3-8. Groundwater Protection Program Locations

Well	Aquifer	Monitoring Purpose
R1	Major Shallow aquifer	Dilution line
R2	Major Shallow aquifer	Dilution line
R3	Major Shallow aquifer	Unit 2 RWST
R4	Major Shallow aquifer	Unit 1 RWST
R5	Major Shallow aquifer	Dilution line
R6	Major Shallow aquifer	Dilution line
R7	Major Shallow aquifer	Dilution line
R8	Major Shallow aquifer	Dilution line
R9	Major Shallow aquifer	Dilution line
R10	Major Shallow aquifer	Dilution line
R11	Major Shallow aquifer	Background 1
R13	Major Shallow aquifer	Dilution line
R14	Major Shallow aquifer	Background 2
PW#2	Drinking water	Production Well #2 Supply
PW#3	Drinking water	Production Well #3 Supply
PW#4	Drinking water	Production Well #4 Supply
CW West	Drinking water	Construction Well West Supply
CW East	Drinking water	Construction Well East Supply
FRW	Drinking water	Firing Range Well Supply
SW-1	N/A	Background 3, Service Water Pond

Table 3-9. Groundwater Protection Program Results

Well	June 2017	November 2017
R1	NDM	302
R2	NDM	NDM
R3	1,230	1,020
R4	NDM	NDM
R5	NDM	188
R6	NDM	202
R7	NDM	NDM
R8	167	NDM
R9	NDM	271
R10	NDM	NDM
R11	NDM	NDM
R13	NDM	NDM
R14	NDM	165
PW#2	NDM	NS
PW#3	NS – Out of Service	NS – Out of Service
PW#4	NDM	NDM
CW West	NDM	NDM
CW East	NDM	NDM
FRW	NDM	NDM
SW-1	NDM	NDM

NDM – No Detectable Measurements
NS – Not Sampled

4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted on December 21, 2017 to determine the locations of the nearest permanent residence, milk animal, and garden of greater than 500 square feet producing broad leaf vegetation, in each of the 16 compass sectors within a distance of five miles; the locations of the nearest beef cattle in each sector were also determined. A milk animal is a cow or goat producing milk for human consumption. The census results are tabulated in Table 4.1-1. The 2017 census indicated that there were no changes to the nearest location for any of the categories in any of the sectors when compared to the 2016 census, nor were any milk animals located within a five-mile radius.

In 2013, a new permanent resident was identified in the western sector (12) at approximately 1.0 mile from the plant (0.2 miles closer than the current controlling receptor). This location was evaluated under CAR 249563 in accordance with ODCM 4.1.2.2.1. There were no significant differences in X/Q or D/Q values or radiological doses between the new location and the previous location, so the controlling receptor remained the same. No ODCM update was made.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal
Distance in Miles to the Nearest Location in Each Sector		
N	2.6	None
NNE	2.5	None
NE	2.4	None
ENE	2.4	None
E	2.8	None
ESE	3.0	None
SE	3.4	None
SSE	None (>5.0)	None
S	4.3	None
SSW	2.9	None
SW	1.2	None
WSW	2.4	None
W	1.0	None
WNW	2.1	None
NW	1.5	None
NNW	3.4	None

4.2 Chattahoochee River Survey

A previous river survey performed for Plant Farley identified a potential use of water from the Chattahoochee River, downstream of the plant discharge at a distance of approximately 2 miles.

In July 2013, the Georgia Department of Natural Resources issued a farm use permit to withdraw from the Chattahoochee River to the Nature Conservancy of Georgia. The Nature Conservancy of Georgia leases property along the river for agricultural and grazing purposes to a private farm family, and water from the river could potentially be used for crop irrigation. At the time of this report, no water has been withdrawn and used for crop irrigation by the landowners.

In the fall of 2017, the Georgia Environmental Protection Division (EPD), Alabama Department of Environmental Management (ADEM) and Alabama Department of Economic and Community Affairs (ADECA) was contacted to request any information about river use permits that had been issued in the area near the plant. No additional withdrawal permits or intake locations had been added at the time of the survey.

5 CONCLUSIONS

This report confirms SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

1) Determine the levels of radiation and the concentrations of radioactivity in the environs; and
2) Assess the radiological impact (if any) to the environment due to the operation of the FNP.

Based on the 2017 activities associated with the REMP, SNC offers the following conclusions:

- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any changes
- Analytical results were below reporting levels
- These values are consistent with historical results, indicating no adverse radiological environmental impacts associated with the operation of FNP

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APPENDIX A

Maps

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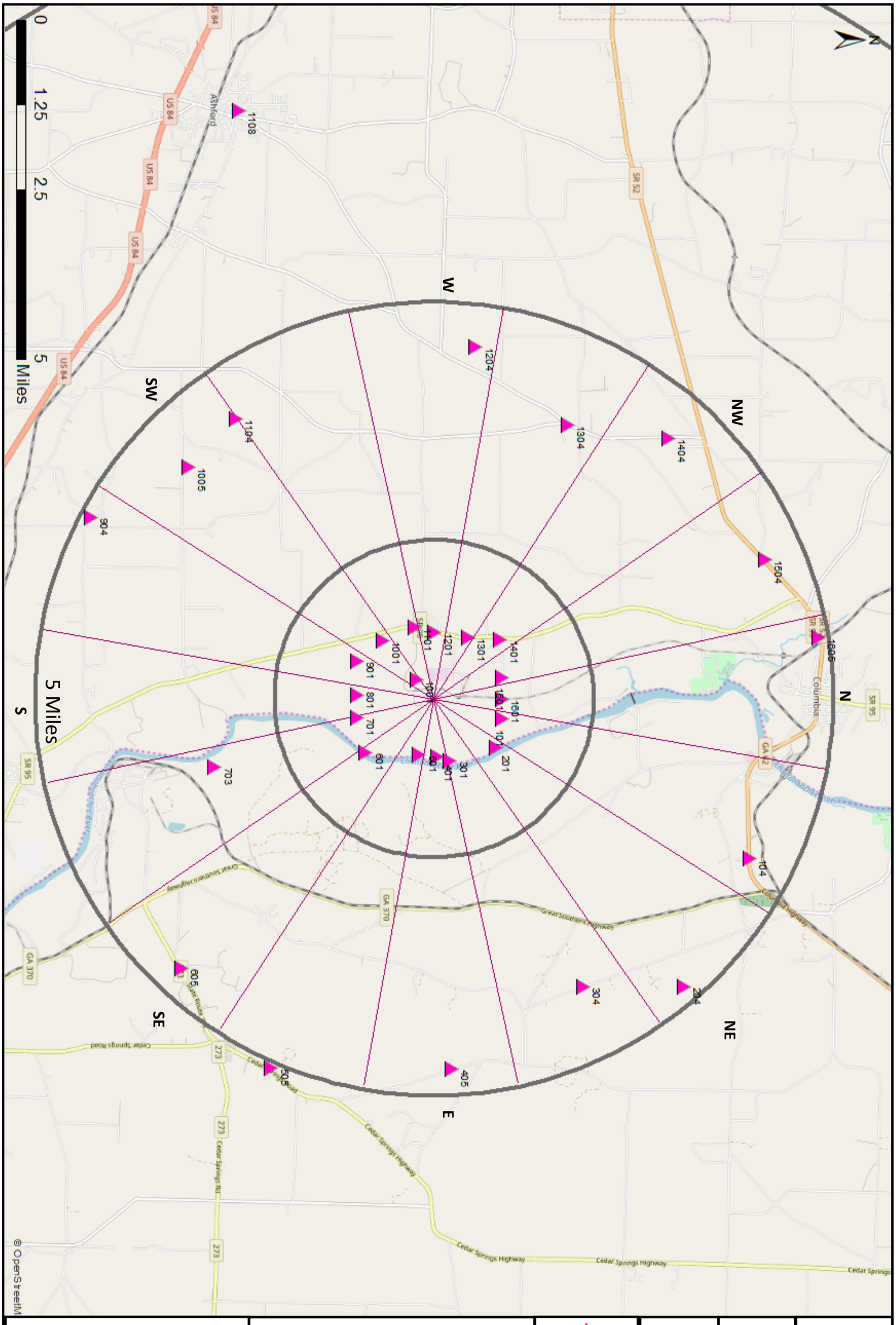

Legend:

Indicator Stations - ▲

Joseph M. Farley Nuclear Plant

2017 Annual Radiological Environmental Report

REMP Stations in Plant Vicinity

Southern Nuclear

Drawn by:	C. Groce	Appendix A
May 1, 2018		Map A-1

N

Liberty Landing

Goldberg Stagefield Army Heliport

Headland Municipal Airport

Early County Airport

Midland City

Dothan Regional Airport

Dothan

Wright Field

Georgia-Pacific Airport (CLOSED)

1612

215

1605

1504

104

204

1404

304

1304

1501 1601

1204

1401 1301 101

405

1201 201

1101 301

501

801 701

505

1108

1104

703

1005

605

904

805

1218

1311

1215

SR 95

SR 52

GA 62

US 27
GA 1

US 431

US 231

US 84

AL 52

US 84
GA 38

10 Miles

0 2.5 5 10 Miles

© OpenStreetM

Appendix A
Map A-2

Drawn by: C. Groce

May 1, 2018

Southern Nuclear

Joseph M. Farley Nuclear Plant
2017 Annual Radiological Environmental Report
REMP Stations within 10 miles

Legend:
Indicator Stations -
Control Stations -

Appendix A
Map A-3

C. Groce

Drawn by:

April 30, 2016
May 1, 2018

Southern Nuclear

Joseph M. Farley Nuclear Plant
2015 Annual Radiological Environmental Report
Extended REMP Stations

Legend:
Control Stations -

0 3.75 7.5 15 Miles

© OpenStreetM

N

PW2

R-11

CW West

CW East

PW4

R-14

R-1

R-2

R-3

R-4

R-5

R-6

R-7

R-8

R-9

R-10

PW1

PW3

SW1

R-13

FRW

0 0.25 0.5 1 Miles

Appendix A

Map A-4

C. Groce

Drawn by:

April 30, 2016
~~May 1, 2018~~

Southern Nuclear

Joseph M. Farley Nuclear Plant

2015 Annual Radiological Environmental Report

Facility Groundwater Wells

Legend:

Groundwater Wells -

APPENDIX B

Errata

There are no errata for the 2017 reporting year.

Edwin I. Hatch Nuclear Plant – Units 1 & 2
Joseph M. Farley Nuclear Plant– Units 1 & 2
Vogtle Electric Generating Plant– Units 1 & 2
Annual Radiological Environmental Operating Reports for 2017

Enclosure 3

Vogtle Annual Radiological Environmental Operating Report for 2017

VOGTLE ELECTRIC GENERATING PLANT
2017 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Southern Nuclear

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Appendix A – Maps

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A-2 – REMP Stations within 10 Miles
A-3 – Extended REMP Stations
A-4 – Facility Groundwater Wells

Appendix B – Errata

Appendix C – Data

LIST OF ACRONYMS

AREOR	Annual Radiological Environmental Operating Report
ASTM	American Society for Testing and Materials
CL	Confidence Level
EPA	Environmental Protection Agency
GA EPD	State of Georgia Environmental Protection Division
GPC	Georgia Power Company
GPCEL	Georgia Power Company Environmental Laboratory
ICP	Interlaboratory Comparison Program
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWe	MegaWatts Electric
NA	Not Applicable
NDM	No Detectable Measurement(s)
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSL	Optically Stimulated Luminescence
Po	Preoperation
PWR	Pressurized Water Reactor
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SNC	Southern Nuclear Operating Company
SRS	Savannah River Site
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
VEGP	Alvin W. Vogtle Electric Generating Plant

1 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) is conducted in accordance with Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 2017 are reported herein in accordance with Technical Specification (TS) 5.6.2 and ODCM 7.1.

The objectives of the REMP are to:

1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;
2) Assess the radiological impact (if any) to the environment due to the operation of the Alvin W. Vogtle Electric Generating Plant (VEGP).

The assessments include comparisons between results of analyses of samples obtained at locations where radiological levels are not expected to be affected by plant operation (control stations), areas of higher population (community stations), and at locations where radiological levels are more likely to be affected by plant operation (indicator stations), as well as comparisons between preoperational and operational sample results.

VEGP is owned by Georgia Power Company (GPC), Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia, and the City of Dalton, Georgia. It is located on the southwest side of the Savannah River approximately 23 river miles upstream from the intersection of the Savannah River and U.S. Highway 301. The site is in the eastern sector of Burke County, Georgia, and across the river from Barnwell County, South Carolina. The VEGP site is directly across the Savannah River from the Department of Energy Savannah River Site (SRS). Unit 1, a Westinghouse Electric Corporation Pressurized Water Reactor (PWR), with a licensed core thermal power of 3,626 MegaWatts (MWt), received its operating license on January 16, 1987 and commercial operation started on May 31, 1987. Unit 2, also a Westinghouse PWR rated for 3,626 MWt, received its operating license on February 9, 1989 and began commercial operation on May 19, 1989. Both units were relicensed on June 3, 2009.

The pre-operational stage of the REMP began with initial sample collections in August of 1981. The transition from the pre-operational to the operational stage of the REMP occurred as Unit 1 reached initial criticality on March 9, 1987.

- A description of the REMP is provided in Section 2 of this report
- Section 3 provides a summary of the results and an assessment of any radiological impacts to the environment as well as the results from the interlaboratory comparison
- A summary of the land use census and the river survey are included in Section 4
- Conclusions are included in Section 5

2 REMP DESCRIPTION

The following section provides a description of the sampling and laboratory protocols associated with the REMP. Table 2-1 provides a summary of the sample types to be collected and the analyses to be performed to monitor the airborne, direct radiation, waterborne and ingestion pathways, and also summarizes the collection and analysis frequencies (in accordance with ODCM Section 4.2). Table 2-2 provides specific information regarding the station locations, their proximity to the plant, and exposure pathways. Additionally, the locations of the sampling stations are depicted on Maps A-1 through A-4 of the station locations included in Appendix A of this report. Any Errata from previous reports are provided in Appendix B. All data points resulting from REMP sampling are provided in Appendix C.

From January to October 2017, the Georgia Power Company Environmental Lab (GPCEL) in Atlanta, Georgia, was performing the collection of all Plant Hatch REMP samples. Beginning in October, a contractor through SNC provided services for collection of most of the REMP samples. After October, only fish samples were collected the GPCEL. The GPCEL will continue to analyze all REMP samples.

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Direct Radiation	40 routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each compass sector in the general area of the site boundary; An outer ring of stations, one in each compass sector at approximately five miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations	Quarterly	Gamma dose, quarterly
Airborne Radioiodine and Particulates	Samples from seven locations: Five locations close to the site boundary in different sectors; A community having the highest calculated annual average ground level D/Q; A control location near a population center at a distance of about 14 miles	Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading	Radioiodine canister: I-131 analysis, weekly Particulate sampler: Gross beta analysis[1] following filter change and gamma isotopic analysis[2] of composite (by location), quarterly
Waterborne			
Surface[3]	One sample upriver Two samples downriver	Composite sample over one month period[4]	Gamma isotopic analysis[2], monthly Composite for tritium analysis, quarterly

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Drinking	Two samples at each of the three nearest water treatment plants that could be affected by plant discharges Two samples at a control location	Composite sample of river water near the intake of each water treatment plant over two week period[4] when I-131 analysis is required for each sample; monthly composite otherwise; and grab sample of finished water at each water treatment plant every two weeks or monthly, as appropriate	I-131 analysis on each sample when the dose calculated for the consumption of the water is greater than 1 mrem per year[5]. Composite for gross beta and gamma isotopic analysis[2] on raw water, monthly. Gross beta, gamma isotopic and I-131 analyses on grab sample of finished water, monthly. Composite for tritium analysis on raw and finished water, quarterly
Groundwater	See Table 3-8 and Map A-4 for well locations. These are part of the GWPP (NEI 07-07).	Frequency based on GWPP.	Tritium, gamma isotopic, and field parameters of each sample; hard-to-detects based on tritium and gamma results
Shoreline Sediment	• One sample from downriver area with existing or potential recreational value • One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis[2], semiannually
Ingestion			
Milk	Two samples from milking animals[6] at control locations at a distance of about 10 miles or more	Bimonthly	Gamma isotopic analysis[2,7], bimonthly

Table 2-1. Summary Description of Radiological Environmental Monitoring Program

Exposure Pathway and/or	Number of Representative Samples and Sample Locations	Sampling/Collection Frequency	Type/Frequency of Analysis
Fish	• At least one sample of any commercially or recreationally important species near the plant discharge • At least one sample of any commercially or recreationally important species in an area not influenced by plant discharges • At least one sample of any anadromous species near the plant discharge	Semiannually During spring spawning season	Gamma isotopic analysis[2] on edible portions, semiannually Gamma isotopic analysis[2] on edible portions, annually.
Grass or Leafy Vegetation	• One sample from two onsite locations near the site boundary in different sectors • One sample from a control location at a distance of about 17 miles	Monthly during growing season	Gamma isotopic analysis[2,7], monthly

Notes:
[1]Airborne particulate sample filters shall be analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples is greater than 10 times the yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples.
[2]Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.
[3]Upriver sample is taken at a distance beyond significant influence of the discharge. Downriver samples are taken beyond but near the mixing zone.
[4]Composite sample aliquots shall be collected at time intervals that are very short (e.g., hourly) relative to the compositing period (e.g., monthly) to assure obtaining a representative sample.
[5]The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.
[6]A milking animal is a cow or goat producing milk for human consumption.
[7]If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
1	Indicator	River Bank	N	1.1	Direct
2	Indicator	River Bank	NNE	0.8	Direct
3	Indicator	Discharge Area	NE	0.6	Airborne
3	Indicator	River Bank	NE	0.7	Direct
4	Indicator	River Bank	ENE	0.8	Direct
5	Indicator	River Bank	E	1.0	Direct
6	Indicator	Plant Wilson	ESE	1.1	Direct
7	Indicator	Simulator Building	SE	1.7	Airborne, Direct, Vegetation
8	Indicator	River Road	SSE	1.1	Direct
9	Indicator	River Road	S	1.1	Direct
10	Indicator	Met Tower	SSW	0.9	Airborne
10	Indicator	River Road	SSW	1.1	Direct
11	Indicator	River Road	SW	1.2	Direct
12	Indicator	River Road	WSW	1.2	Airborne, Direct
13	Indicator	River Road	W	1.3	Direct
14	Indicator	River Road	WNW	1.8	Direct
15	Indicator	Hancock Landing Road	NW	1.5	Direct, Vegetation
16	Indicator	Hancock Landing Road	NNW	1.4	Airborne, Direct
17	Other	Sav. River Site (SRS), River Road	N	5.4	Direct
18	Other	SRS, D Area	NNE	5.0	Direct
19	Other	SRS, Road A.13	NE	4.6	Direct
20	Other	SRS, Road A.13.1	ENE	4.8	Direct
21	Other	SRS, Road A.17	E	5.3	Direct
22	Other	River Bank	ESE	5.2	Direct

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
23	Other	River Road	SE	4.6	Direct
24	Other	Chance Road	SSE	4.9	Direct
25	Other	Chance Road near Highway 23	S	5.2	Direct
26	Other	Highway 23 and Ebenezer Church Road	SSW	4.6	Direct
27	Other	Highway 23 opposite Boll Weevil Road	SW	4.7	Direct
28	Other	Thomas Road	WSW	5.0	Direct
29	Other	Claxton-Lively Road	W	5.1	Direct
30	Other	Nathaniel Howard Road	WNW	5.0	Direct
31	Other	River Road at Allen's Chapel Fork	NW	5.0	Direct
32	Other	River Bank	NNW	4.7	Direct
35	Other	Girard	SSE	6.6	Airborne, Direct
36	Control	GPC Waynesboro Op. HQ	WSW	13.9	Airborne, Direct
37	Control	Substation, Waynesboro, GA	WSW	16.7	Direct, Vegetation
43	Other	Employee's Rec. Center	SW	2.2	Direct
47	Control	Oak Grove Church	SE	10.4	Direct
48	Control	McBean Cemetery	NW	10.2	Direct
51	Control	SGA School, Sardis, GA	S	11.0	Direct
52	Control	Oglethorpe Substation; Alexander, GA	SW	10.7	Direct
80	Control	Augusta Water Treatment Plant	NNW	29.0	Drinking Water[2]
81	Control	Sav. River	N	2.5	Fish[3] Sediment[4]
82	Control	Sav. River (RM 151.2)	NNE	0.8	River Water
83	Indicator	Sav. River (RM 150.4)	ENE	0.8	River Water Sediment[4]
84	Other	Sav. River (RM 149.5)	ESE	1.6	River Water
85	Indicator	Sav. River	ESE	4.3	Fish[3]
87	Indicator	Beaufort-Jasper County Water Treatment Plant	SE	76	Drinking Water[5]

Table 2-2. Radiological Environmental Sampling Locations

Station Number	Station Type	Descriptive Location	Direction[1]	Distance (miles)[1]	Radiation Sample Type
88	Indicator	Cherokee Hill Water Treatment Plant, Port Wentworth, GA	SSE	72	Drinking Water[6]
89	Indicator	Purrysburg Water Treatment Plant; Purrysburg, SC	SSE	76	Drinking Water[7]
98	Control	W.C. Dixon Dairy	SE	9.8	Milk[8]
101	Indicator	Girard Dairy	S	5.5	Milk[8]
102	Control	Seven Oaks Dairy/Milky Way Dairy	W	7.5/16.0	Milk[8]

Notes:

[1]Direction and distance are determined from a point midway between the two reactors.

[2]The intake for the Augusta Water Treatment Plant is located on the Augusta Canal. The entrance to the canal is at River Mile (RM) 207 on the Savannah River. The canal effectively parallels the river. The intake to the pumping station is about 4 miles down the canal.

[3]A 5-mile stretch of the river is generally needed to obtain adequate fish samples. Samples are normally gathered between RM 153 and 158 for upriver collections and between RM 144 and 149.4 for downriver collections.

[4]Sediment is collected at locations with existing or potential recreational value. Because high water, shifting of the river bottom, or other reasons could cause a suitable location for sediment collections to become unavailable or unsuitable, a stretch of the river between RM 148.5 and 150.5 was designated for downriver collections while a stretch between RM 153 and 154 was designated for upriver collections. In practice, collections are normally made at RM 150.2 for downriver collections and RM 153.3 for upriver collections.

5 DELETED THIS SAMPLE LOCATION IN 2014 (LDCR 2014004) The intake for the Beaufort-Jasper County Water Treatment Plant is located at the end of canal that begins at RM 39.3 on the Savannah River. This intake is about 16 miles by line of sight down the canal from its beginning on the Savannah River.

[6]The intake for the Cherokee Hill Water Treatment Plant is located on Abercorn Creek which is about one and a quarter creek miles from its mouth on the Savannah River at RM 29.

[7]The intake for the Purrysburg Water Treatment Plant is located on the same canal as the Beaufort-Jasper Water Treatment Plant. The Purrysburg intake is closer to the Savannah River at the beginning of the canal.

[8]Girard Dairy is considered an indicator station since it is the closest dairy to the plant (˜5.5 miles). Dixon Dairy went out of business in June 2009 and Seven Oaks Dairy (˜7.5 miles) was added as a replacement and is considered a control station even though a control station is typically 10 miles or greater. Milky Way Dairy was identified and added to the ODCM in 2015 to replace Seven Oaks since it is at 16.0 miles from the plant.

3 RESULTS SUMMARY

Included in this section are statistical evaluations of the laboratory results, comparison of the results by media, and a summary of the anomalies and deviations. Overall, 1,224 analyses were performed across nine exposure pathways. Tables and figures are provided throughout this section to provide an enhanced presentation of the information.

In recent history, man-made nuclides have been released into the environment and have resulted in wide spread distribution of radionuclides across the globe. For example, atmospheric nuclear weapons tests from the mid-1940s through 1980 distributed man-made nuclides around the world. The most recent atmospheric tests in the 1970s and in 1980 had a significant impact upon the radiological concentrations found in the environment prior to and during pre-operation, and through early operation. Some long-lived radionuclides, such as Cs-137, continue to be detected and a portion of these detections are believed to be attributed to the nuclear weapons tests.

Additionally, data associated with certain radiological effects created by off-site events have been removed from the historical evaluation, this includes: the nuclear atmospheric weapon test in the fall of 1980; the Chernobyl incident in the spring of 1986; abnormal releases from the Savannah River Site (SRS) during 1987 and 1991; and the Fukushima event in the spring of 2011.

As indicated in ODCM 7.1.2.1, the results for naturally occurring radionuclides that are also found in plant effluents must be reported along with man-made radionuclides. Historically, the radionuclide Be-7, which occurs abundantly in nature, is often detected in REMP samples, and occasionally detected in the plant's liquid and gaseous effluents. When it is detected in effluents and REMP samples, it is also included in the REMP results. In 2017, Be-7 was not detected in any plant effluents and therefore is not included in this report. The Be-7 detected in select REMP samples likely represents naturally occurring and/or background conditions.

As part of the data evaluation process, SNC considered the impact of the non-plant associated nuclides along with a statistical evaluation of the REMP data. The statistical evaluations included within this report include the Minimum Detectable Concentration (MDC), the Minimum Detectable Difference (MDD), and Chauvenet's Criterion as described below.

Minimum Detectable Concentration

The minimum detectable concentration is defined as an estimate of the true concentration of an analyte required to give a specified high probability that the measured response will be greater than the critical value.

Minimum Detectable Difference

The Minimum Detectable Difference (MDD) compares the lowest significant difference (between the means) of a control station, versus an indicator station or a community station, that can be determined statistically at the 99% Confidence Level. A difference in mean values which was less than the MDD was considered to be statistically indiscernible. The MDD is used to evaluate the statistical proximity between the indicator/community and control sample results, but generally, any results that are less than the MDC and/or Reporting Levels (RL) are considered to have minimal impact on the surrounding environs.

Chauvenet's Criterion

All results were tested for conformance with Chauvenet's criterion (G. D. Chase and J. L. Rabinowitz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962, pages 87-90) to identify values which differed from the mean of a set by a statistically significant amount. Identified outliers were investigated to determine the reason(s) for the difference. If equipment malfunction or other valid physical reasons were identified as causing the variation, the anomalous result was excluded from the data set as non-representative.

The 2017 results were compared with past results, including those obtained during pre-operation. As appropriate, results were compared with their MDC (listed in Table 3-1) and RL which is listed in Table 3-2. The required MDCs were achieved during laboratory sample analysis. No data points were excluded for violating Chauvenet's criterion.

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Airborne Particulates (fCi/m3)	Gross Beta 364	10	23.2 8.6-54.9 (260/260)	Hancock Landing Road NNW 1.4 mi.	23.4 9.4-47.0 (52/52)	21.6 5.9-48.6 (52/52)	22.5 10.9-47.3 (52/52)
	Gamma Isotopic 28						
	I-131	70	NDM(c)		NDM	NDM	NDM
	Cs-134	50	NDM		NDM	NDM	NDM
	Cs-137	60	NDM		NDM	NDM	NDM
Airborne Radioiodine (fCi/m3)	I-131 364	70	NDM		NDM	NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 159		11.4 4.5-18.4 (64/64)	SRS, Road A.13.1 ENE 4.8 mi.	18.2 15.0-19.9 (4/4)	11.9 3.8-19.9 (71/71)	11.4 6.3-16.1 (24/24)
Milk (pCi/l)	Gamma Isotopic 47						
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	1.1 0.8-1.4 (11/23)	Girard Dairy S 5.5 mi	1.1 0.8-1.4 (11/23)		0.7 0.4-0.9 (9/24)
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Vegetation (pCi/kg-wet)	Gamma Isotopic 33						
	I-131	60	NDM		NDM		NDM
	Cs-134	60	NDM		NDM		NDM
	Cs-137	80	NDM	Substation Waynesboro, GA WSW 16.7 mi.	22.0 22.0-22.0 (1/11)		22.0 22.0-22.0 (1/11)
River Water (pCi/l)	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM	NDM	NDM
	Mn-54	15	NDM		NDM	NDM	NDM
	Fe-59	30	NDM		NDM	NDM	NDM
	Co-58	15	NDM		NDM	NDM	NDM
	Co-60	15	NDM		NDM	NDM	NDM
	Zn-65	30	NDM		NDM	NDM	NDM
	Zr-95	30	NDM		NDM	NDM	NDM
	Nb-95	15	NDM		NDM	NDM	NDM
	I-131	1	NDM		NDM	NDM	NDM
	Cs-134	15	NDM		NDM	NDM	NDM
	Cs-137	18	NDM		NDM	NDM	NDM
	Ba-140	60	NDM		NDM	NDM	NDM
	La-140	15	NDM		NDM	NDM	NDM
	Tritium 12	2000	2495 1210-3880 (4/4)	Savannah River (RM 150.4) ENE 0.8 mi	2495 1210-3880 (4/4)	721 256-1080 (4/4)	108 50.9-187 (4/4)

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
Raw Water Near Intakes to Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.8 0.7-6.0 (24/24)	Augusta Water Treatment Plant NNW 29 mi.	3.1 1.8-5.1 (12/12)		3.0 0.4-5.8 (12/12)
	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM		NDM
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
	Tritium 12	2000	472 127-792 (8/8)	Purrysburg Water Treatment Plant, Purrysburg, SC, SSE, 76 miles	521 145-776 (4/4)		144 38.6-252 (4/4)
Finished Water at Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.4 0.5-4.6 (24/24)	Cherokee Hill Water Treatment Plant, Port Wentworth, GA SSE 72 mi.	2.4 0.8-4.6 (12/12)		2.0 0.4-4.9 (12/12)

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Gamma Isotopic 36						
	Be-7	124(d)	NDM		NDM		NDM
	Mn-54	15	NDM		NDM		NDM
	Fe-59	30	NDM		NDM		NDM
	Co-58	15	NDM		NDM		NDM
	Co-60	15	NDM		NDM		NDM
	Zn-65	30	NDM		NDM		NDM
	Zr-95	30	NDM		NDM		NDM
	Nb-95	15	NDM		NDM		NDM
	I-131	1	NDM		NDM		NDM
	Cs-134	15	NDM		NDM		NDM
	Cs-137	18	NDM		NDM		NDM
	Ba-140	60	NDM		NDM		NDM
	La-140	15	NDM		NDM		NDM
	Tritium 12	2000	555 188-833 (8/8)	Cherokee Hill Water Treatment Plant, Port Wentworth, GA SSE 72 mi.	596 340-771 (4/4)		181 46-348 (2/4)
Anadromous Fish (pCi/kg-wet)	Gamma Isotopic 1						
	Be-7	655(d)			NA		NDM
	Mn-54	130			NA		NDM
	Fe-59	260			NA		NDM
	Co-58	130			NA		NDM
	Co-60	130			NA		NDM
	Zn-65	260			NA		NDM

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		
	Cs-134	130			NA		NDM
	Cs-137	150			NA		NDM
Fish (pCi/kg-wet)	Gamma Isotopic 8						
	Be-7	655(d)	NDM				NDM
	Mn-54	130	NDM				NDM
	Fe-59	260	NDM				NDM
	Co-58	130	NDM				NDM
	Co-60	130	NDM				NDM
	Zn-65	260	NDM				NDM
	Cs-134	130	NDM				NDM
	Cs-137	150	47.9 22.9-74.3 (4/4)	Savannah River, ESE, 4.3 mi.	47.9 22.9-74.3 (4/4)		23.7 20-27.5 (2/4)
Sediment (pCi/kg-dry)	Gamma Isotopic 4						
	Co-58	N/A	53.9 53.9-53.9 (1/2)	Savannah River (RM 150.4) ENE 0.8 mi.	53.9 53.9-53.9 (1/2)		NDM
	Co-60	N/A	26.5 26.5-26.5 (1/2)	Savannah River (RM 150.4) ENE 0.8 mi.	26.5 26.5-26.5 (1/2)		NDM
	Cs-134	150	NDM				NDM
	Cs-137	180	87.1 81.4-92.8 (2/2)	Savannah River (RM 150.4), ENE 0.8 miles	87.1 81.4-92.8 (2/2)		60.1 59.3-60.9 (2/2)

Table 3-1. Radiological Environmental Monitoring Program Annual Summary

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Location Mean (b), Range (Fraction)	Location with the Highest Annual Mean		Other Stations (f) Mean (b), Range (Fraction)	Control Locations Mean (b), Range (Fraction)
				Name Distance and Direction	Mean (b), Range (Fraction)		

Notes:

(a)The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed.

(b) Mean and range are based upon detectable measurements only. The fraction of all measurements at a specified location that are detectable is placed in parenthesis.

(c) No Detectable Measurement(s) (NDM).

(d) The Georgia Power Company Environmental Laboratory has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.

(e) Item 3 of ODCM Table 4-1 implies that an I-131 analysis is not required to be performed on water samples when the dose calculated from the consumption of water is less than 1 mrem per year. However, I-131 analyses have been performed on the finished drinking water samples.

(f) "Other" stations, as identified in the "Station Type" column of Table 2-2, are "Community" and/or "Special" stations.

	Not Applicable (sample or analysis not required)

Table 3-2. Reporting Levels (RL)

Analysis	Water (pCi/l)	Airborne Particulate or Gases (fCi/m3)	Fish (pCi/kg-wet)	Milk (pCi/l)	Grass or Leafy Vegetation (pCi/kg-wet)
H-3	20,000[a]				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr-95	400				
Nb-95	700				
I-131	2[b]	900		3	100
Cs-134	30	10,000	1,000	60	1,000
Cs-137	50	20,000	2,000	70	2,000
Ba-140	200			300	
La-140	100			400	

[a] This is the 40 CFR 141 value for drinking water samples. If no drinking water pathway exists, a value of 30,000 may be used.
[b] If no drinking water pathway exists, a value of 20 pCi/l may be used.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule are permitted, if samples are unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Deviations from conducting the REMP sampling (as described in Table 2-1) are summarized in Table 3-3 along with their causes and resolution.

Table 3-3. Anomalies and Deviations from Radiological Environmental Monitoring Program

Collection Period	Affected Samples	Anomaly (A)* or Deviation (D)**	Cause	Resolution
08/14/17 CR 1004276	Girard Dairy Milk Sample	(D) Milk sample not obtained.	Girard Dairy was closed and no personnel were available to provide the sample.	This has not been typical and is believed to be an isolated circumstance. No resolution necessary at this time.
9/11/17-9/18/17 CR 10431390	Hancock Air Station	(A) Air sample volume less than expected.	Station power failure due to hurricane weather. Approximately 24 hours of run-time were lost.	Power was restored by the local EMC.
9/18/17-9/25/17 CR 10431390	Hancock Air Station	(A) Air sample volume less than expected.	Station power failure due to hurricane weather. Approximately 19.5 hours of run-time were lost.	Power was restored by the local EMC.
October 2017 CR 10481397	All vegetation samples	(D) Vegetation samples not adequately collected.	First-time performing personnel did not collect vegetation samples at the volume needed to perform the lab analyses.	Collection personnel were coached on proper sample collection technique and required volumes.
4th Quarter 2017 CR 10483513	OSLD Station V28	(D) OSLD not collected.	OSLD appears to have been removed during ROW tree-cutting.	OSLD was replaced in a nearby location.

* An anomaly is considered a non-standard sample that still meets sampling criteria outlined in SNC and Georgia Power Labs procedures.
** A deviation is a sample result that is not recorded due to not meeting scheduling and/or procedural requirements as outlined by SNC and Georgia Power Labs

3.1 Airborne Particulates

As specified in Table 2-1, airborne particulate filters and charcoal canisters are collected weekly at five indicator stations (Stations 3, 7, 10, 12 and 16) which encircle the plant at the site periphery, at a nearby community station (Station 35) approximately seven miles from the plant, and at a control station (Station 36) approximately 14 miles from the plant. At sampling locations containing a filter and cartridge series, air is continuously drawn through a glass fiber filter to retain airborne particulate and an activated charcoal canister is placed in series with the filter to adsorb radioiodine.

3.1.1 Gross Beta

As provided in Table 3-1, the 2017 annual average weekly gross beta activity at the indicator stations was 23.2 fCi/m3. It was 0.7 fCi/m3 more than the control station average of 22.5 fCi/m3. This difference is not statistically discernible, since it is less than the calculated MDD of 1.3 fCi/m3.

The 2017 annual average weekly gross beta activity at the Girard community station was 21.6 fCi/m3 which was below the control station average (22.5 fCi/m3). No MDD was applied since the community station average was lower than the control average.

Average Air Gross Beta historical data (Table 3-4) is graphed to show trends associated with a prevalent exposure pathway (Figure 3-1). In general, there is close agreement between the results for the indicator, control and community stations. This close agreement supports the position that the plant is not contributing significantly to the gross beta concentrations in air.

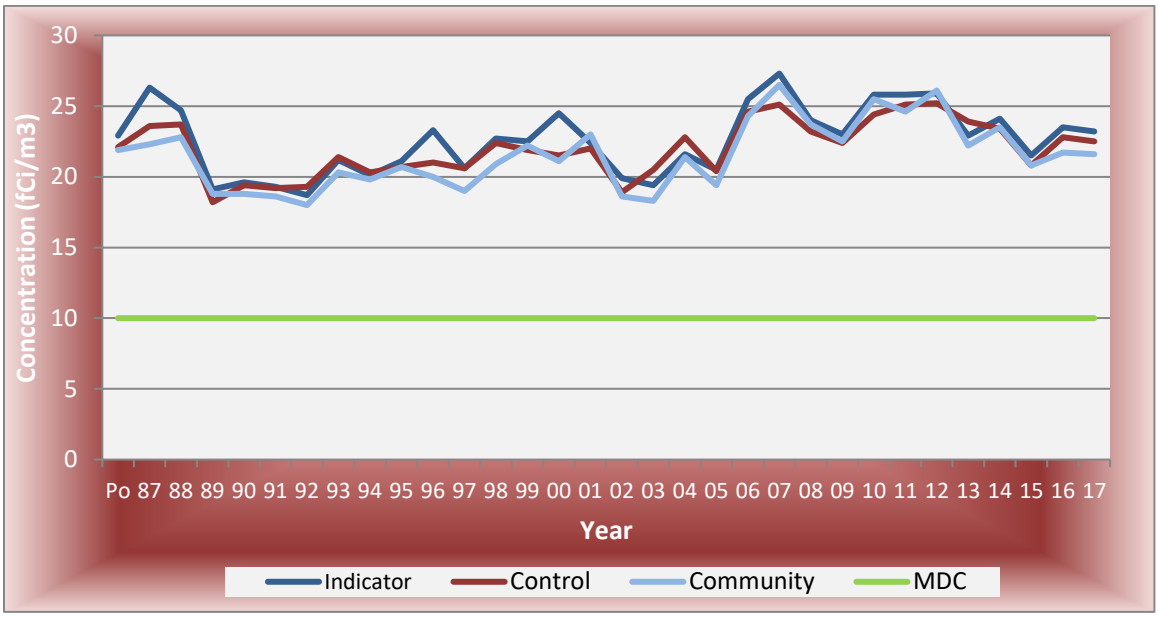
Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
Pre-op	22.9	22.1	21.9		2002	19.9	18.9	18.6
1987	26.3	23.6	22.3		2003	19.4	20.5	18.3
1988	24.7	23.7	22.8		2004	21.6	22.8	21.4
1989	19.1	18.2	18.8		2005	20.5	20.4	19.4
1990	19.6	19.4	18.8		2006	25.5	24.6	24.3
1991	19.3	19.2	18.6		2007	27.3	25.1	26.5
1992	18.7	19.3	18.0		2008	24.0	23.2	23.7
1993	21.2	21.4	20.3		2009	23.0	22.4	22.5
1994	20.1	20.3	19.8		2010	25.8	24.4	25.5
1995	21.1	20.7	20.7		2011	25.8	25.1	24.6
1996	23.3	21.0	20.0		2012	25.9	25.2	26.1
1997	20.6	20.6	19.0		2013	22.9	23.9	22.2
1998	22.7	22.4	20.9		2014	24.1	23.4	23.5
1999	22.5	21.9	22.2		2015	21.5	20.8	20.8

Table 3-4. Average Weekly Gross Beta Air Concentration

Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)		Period	Indicator (fCi/m3)	Control (fCi/m3)	Community (fCi/m3)
2000	24.5	21.5	21.1		2016	23.5	22.8	21.7
2001	22.4	22.0	22.7		2017	23.2	21.6	22.5

Figure 3-1. Historic Average Weekly Gross Beta Air Concentration



3.1.2 Gamma Particulates and Airborne Radioiodine

During 2017, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters. Historically, gamma isotopes have been detected as a result of offsite events. During pre-operation, Cs-134, Cs-137 and I-131 were occasionally detected. In 1987, Cs-137 was found in one indicator composite at a concentration of 1.7 fCi/m3.

Additionally, I-131 was also detected after the Fukushima incident in 2011, the highest I-131 result in 2011 was 93.8 fCi/m3, which is approximately 10% of the RL. During 2017, no I-131 was detected in the air cartridges at either the indicator or control stations.

3.2 Direct Radiation

In 2017, direct (external) radiation was measured with Optically Stimulated Luminescent dosimeters (OSLD) by placing two OSLD badges at each station. The gamma dose at each station is reported as the average reading of the two badges. The badges are analyzed on a quarterly

basis. An inspection is performed near mid-quarter for offsite badges to assure that the badges are on-station and to replace any missing or damaged badges.

Two direct radiation stations are established in each of the 16 compass sectors, to form two concentric rings. The inner ring (Stations 1 through 16) is located near the plant perimeter as shown in Map A-1 in Appendix A and the outer ring (Stations 17 through 32) is located at a distance of approximately five miles from the plant as shown in Map A-2 in Appendix A. The 16 stations forming the inner ring are designated as the indicator stations. The two ring configuration of stations was established in accordance with NRC Branch Technical Position "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979. The six control stations (Stations 36, 37, 47, 48, 51 and 52) are located at distances greater than 10 miles from the plant as shown in Map A-3 in Appendix A. Monitored special interest areas include Station 35 at the town of Girard and Station 43 at the employee recreational area (Rec Center). The mean and range values presented in the "Other" column in Table 3-1 includes the outer ring stations (stations 17 through 32) as well as stations 35 and 43.

As provided in Table 3-1, the 2017 average quarterly exposure at the indicator stations (inner ring) was 11.4 mR with a range of 4.5 to 18.4 mR. The indicator station average and the control station averages were equal at 11.4 mR). No MDD was applied because the indicator was equal to the control. Over the operational history, the annual average quarterly exposures show little variation between the indicator and control stations.

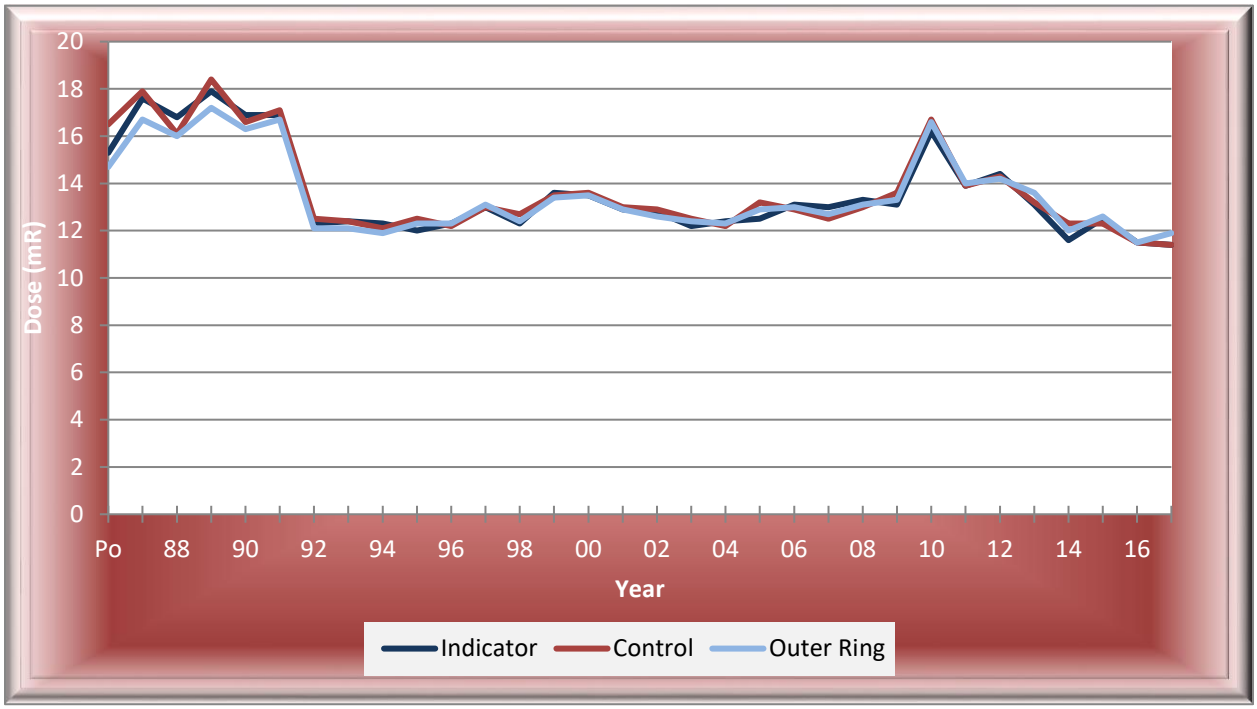
The quarterly exposures acquired at the community/other (outer ring) stations during 2017 ranged from 3.8 to 19.9 mR with an average of 11.9 mR which was 0.5 mR higher than the control station average. The applicable MDD between the community/other average and the control average was 0.9 mR. The difference between the two averages is less than the MDD, so no statistically discernible difference exists.

Average Direct Radiation historical data (Table 3-5) is graphed to show trends associated with this exposure pathway (Figure 3-2). The decrease between 1991 and 1992 values is attributed to a change in TLDs from Teledyne to Panasonic. It should be noted however that the differences between indicator and control and outer ring values did not change.

Table 3-5. Average Quarterly Exposure from Direct Radiation

Period	Indicator (mR)	Control (mR)	Outer Ring (mR)		Period	Indicator (mR)	Control (mR)	Outer Ring (mR)
Pre-op	15.3	16.5	14.7		2002	12.8	12.9	12.6
1987	17.6	17.9	16.7		2003	12.2	12.5	12.4
1988	16.8	16.1	16.0		2004	12.4	12.2	12.3
1989	17.9	18.4	17.2		2005	12.5	13.2	12.9
1990	16.9	16.6	16.3		2006	13.1	12.9	13.0
1991	16.9	17.1	16.7		2007	13.0	12.5	12.7
1992	12.3	12.5	12.1		2008	13.3	13.0	13.1
1993	12.4	12.4	12.1		2009	13.1	13.6	13.3
1994	12.3	12.1	11.9		2010	16.2	16.7	16.6
1995	12.0	12.5	12.3		2011	13.9	13.9	14.0
1996	12.3	12.2	12.3		2012	14.4	14.3	14.2
1997	13.0	13.0	13.1		2013	13.1	13.2	13.6
1998	12.3	12.7	12.4		2014	11.6	12.3	12.0
1999	13.6	13.5	13.4		2015	12.5	12.3	12.6
2000	13.5	13.6	13.5		2016	11.5	11.5	11.5
2001	12.9	13.0	12.9		2017	11.4	11.4	11.9

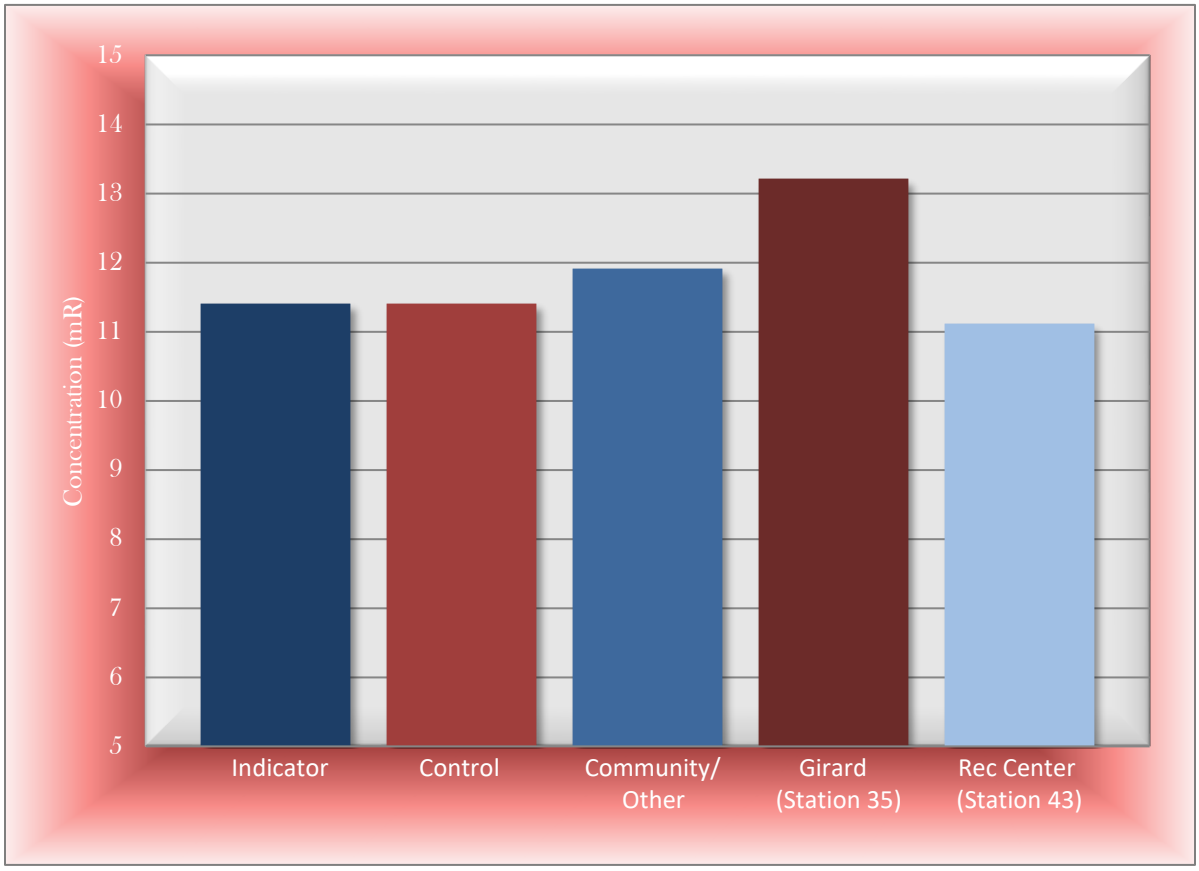
Figure 3-2. Average Quarterly Exposure from Direct Radiation



The increase shown in 2010 reflects issues with the aging Panasonic TLD reader. The close agreement between the station groups supports the position that the plant is not contributing significantly to direct radiation in the environment. Figure 3-3 below provides a more detailed

view of the 2017 values. The values for the special interest areas (Girard and the Rec Center) detailed below indicate that Plant Vogtle did not significantly contribute to direct radiation at those areas.

Figure 3-3. 2017 Average Exposure from Direct Radiation



3.3 Biological Media

Cs-137 was the only radionuclide detected in two of the three biological media. As indicated in Figure 3-4, the Cs-137 activity levels are below the respective MDCs and well below that of the respective RLs for each sample media for both the indicator and control stations.

3.3.1 Milk

In accordance with Tables 2-1 and 2-2, milk samples are collected semi-monthly from two locations: the Girard Dairy (Station 101) which is considered an indicator station because it is approximately 5.5 miles from Vogtle (ideally, a milk indicator station is less than 5 miles from the plant); and the Milky Way Dairy (Station 102, at 16.0 miles from the plant) is the control location. No milk animal was found within five miles of Plant Vogtle during the 2017 land use census.

Gamma isotopic (including I-131 and Cs-137) analyses were performed on each collected milk sample and there were no detectable results for gamma isotopes other than Cs-137, which was detected in 11 of 24 indicator samples (1.1 pCi/l average) and nine of 24 control samples (0.7 pCi/l average). The difference is greater than the MDD of 0.1 pCi/l, therefore, there is a statistically significant difference between the indicator and control. Both the indicator and control values are well under the MDC of 18 pCi/L, and these results are consistent with past milk samples, so no further investigation was conducted. Figure 3-4 provides the 2017 Cs-137 concentration in milk.

3.3.2 Vegetation

In accordance with Tables 2-1 and 2-2, vegetation samples are collected monthly for gamma isotopic analyses at two indicator locations near the site boundary (Stations 7 and 15) and at one control station located about 17 miles WSW from the plant (Station 37). The man-made radionuclide Cs-137 is periodically identified in vegetation samples, and is generally attributed to offsite sources (such as weapons testing, Chernobyl, and Fukushima). Cs-137 was detected in one of the samples collected in 2017 at the control station, at a value of 22.0 pCi/kg-wet.

While Cs-137 and I-131 were periodically found and Co-60 was discovered once in vegetation samples during pre-operation, the historical trends and the relationship between the indicator and control stations demonstrate that plant operations are having no adverse impact to the environment. The sample results have consistently been well below the MDC and the RL for Cs-137 (80 and 2000 pCi/kg-wet, respectively).

During 2017, no other gamma isotopes were detected in any Vogtle REMP vegetation samples.

3.3.3 Fish

Fish samples were collected in accordance with the ODCM (as indicated in Table 2-1). For the semiannual collections, the control location (Station 81) extends from approximately two to seven miles upriver of the plant intake structure, and the indicator location (Station 85) extends from about 1.4 to seven miles downriver of the plant discharge structure.

3.3.3.1 Anadromous Species

For anadromous species, all fish sampled are considered indicator stations. Anadromous fish were sampled once during 2017, on March 22. No radionuclides were detected in the 2017 anadromous fish sample.

3.3.3.2 Commercially or Recreationally Important Species

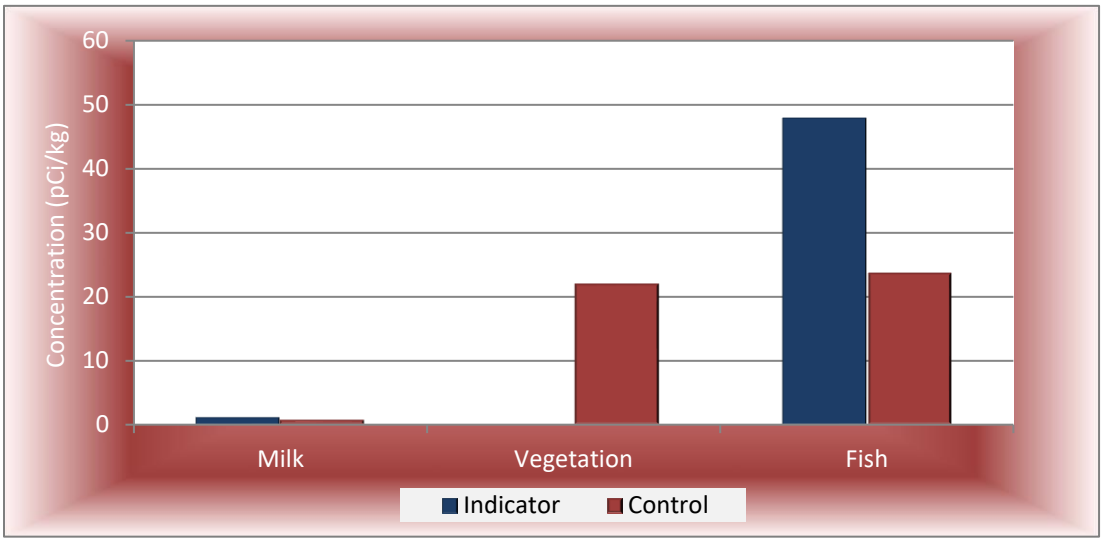
As provided in Table 3-1, Cs-137 was found in the semiannual collections of commercially or recreationally important species of fish (for both indicator and control). The indicator station

averaged a Cs-137 concentration of 47.9 pCi/kg-wet (detected in each of four samples, with a range of 22.9 to 74.3 pCi/kg-wet), and 23.7 pCi/kg-wet at the control station (detected in two of four samples, with a range of 20.0 to 27.5 pCi/kg-wet). There is no statistically discernible difference between the two since the difference of 24.2 is less than the MDD of 35.0. All detected values are well below the MDC for Cs-137 in fish (150 pCi/kg-wet). No other gamma nuclides were discovered in 2017.

3.3.4 Biological Media Summary

There were no statistical differences, trends, or anomalies associated with the 2017 biological media samples when compared to historical data. Figure 3-4 below, details the 2017 Cs-137 concentrations in the three media types.

Figure 3-4. 2017 Biological Media Average Cs-137 Concentrations



3.4 Drinking Water

Samples are collected at an upstream control location and at three downstream indicator locations (shown on Map A-3) and further described in Table 2-2.

Water samples are taken near the intake of each water treatment plant (raw drinking water) using automatic composite samplers, which are collected monthly. Additionally, monthly grab samples of the processed water effluent from the treatment plants (finished drinking water) are collected. Monthly aliquots from the raw and processed drinking water are analyzed for gross beta and gamma isotopic activity. The monthly aliquots are also combined to form quarterly composites, which are analyzed for tritium.

For 2017, the indicator station average gross beta concentration in the *raw* drinking water was 2.8 pCi/l which was 0.2 pCi/l less than the average gross beta concentration at the control station (3.0 pCi/l). Historically, there has been close agreement between the gross beta values at the indicator stations and the control station which supports that there is no significant gross beta contribution from the plant effluents. The required MDC for gross beta in water is 4.0 pCi/l; there is no RL for gross beta in water.

For 2017, the indicator station average gross beta concentration in the *finished* drinking water was 2.4 pCi/l which was 0.4 pCi/l less than the average gross beta concentration at the control station (2.0 pCi/l). The difference between the respective indicator and control average are less than the MDD of 0.5 pCi/l; therefore, no discernible difference exists. Figure 3-5 show the relationship between the average indicator station and average control station for 2017 in comparison to the MDC.

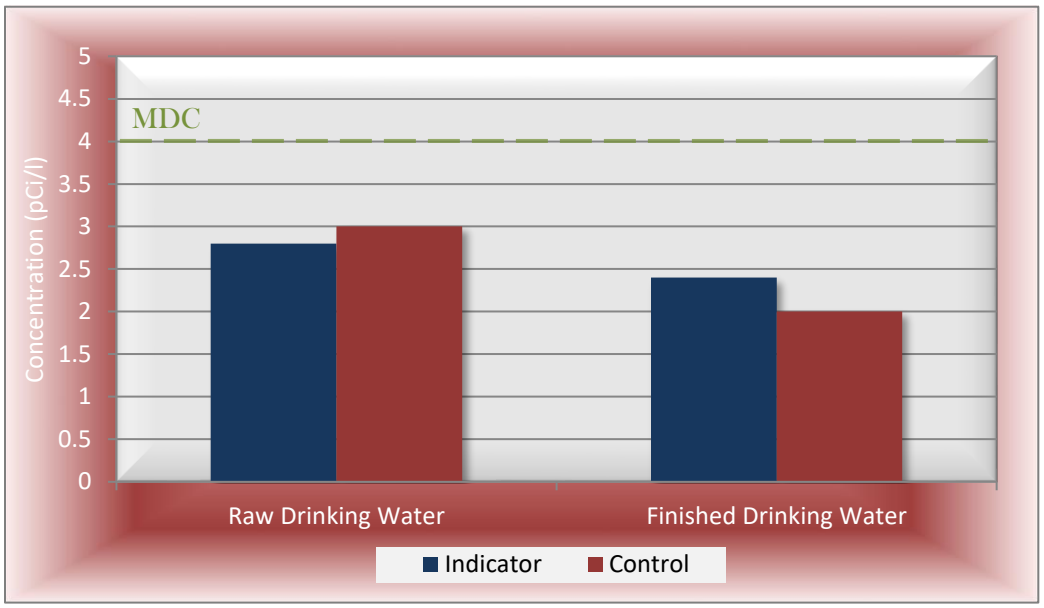
As provided in Table 3-1, there were no positive results during 2017 from the gamma isotopic analysis of the raw and finished drinking water samples.

Regarding tritium, the average raw drinking water indicator concentration was 472 pCi/l which was 328 pCi/l greater than the average concentration found at the control station (144 pCi/l). This difference does exceed the MDD of 222 pCi/L, but all detected values are less than the MDC for drinking water of 2,000 pCi/L, and these values are consistent with past results.

A statistically significant increase in the concentrations found in samples collected at the indicator station compared to those collected at the control station is likely indicative of plant releases. However, concentrations found at these downstream stations represent the activity in the river as a whole, which includes Vogtle plant releases combined with those from other sources along the river. The detected values are closely monitored and evaluated regularly by all dischargers on the Savannah River.

The finished drinking water average tritium concentration at the indicator stations during 2017 was 555 pCi/l which was 440 pCi/l greater than the average concentration found at the control station (181 pCi/l). The MDD was calculated at 195 pCi/l between the indicator and control stations, indicating a statistically discernible difference. Again, these are likely indicators of upstream plant activity, but is only one quarter of the MDC for tritium in drinking water of 2,000 pCi/L. Figure 3-6 shows the tritium values in the drinking water compared to river water.

Figure 3-5. 2017 Average Gross Beta Concentration in Raw and Finished Drinking Water



3.5 River Water

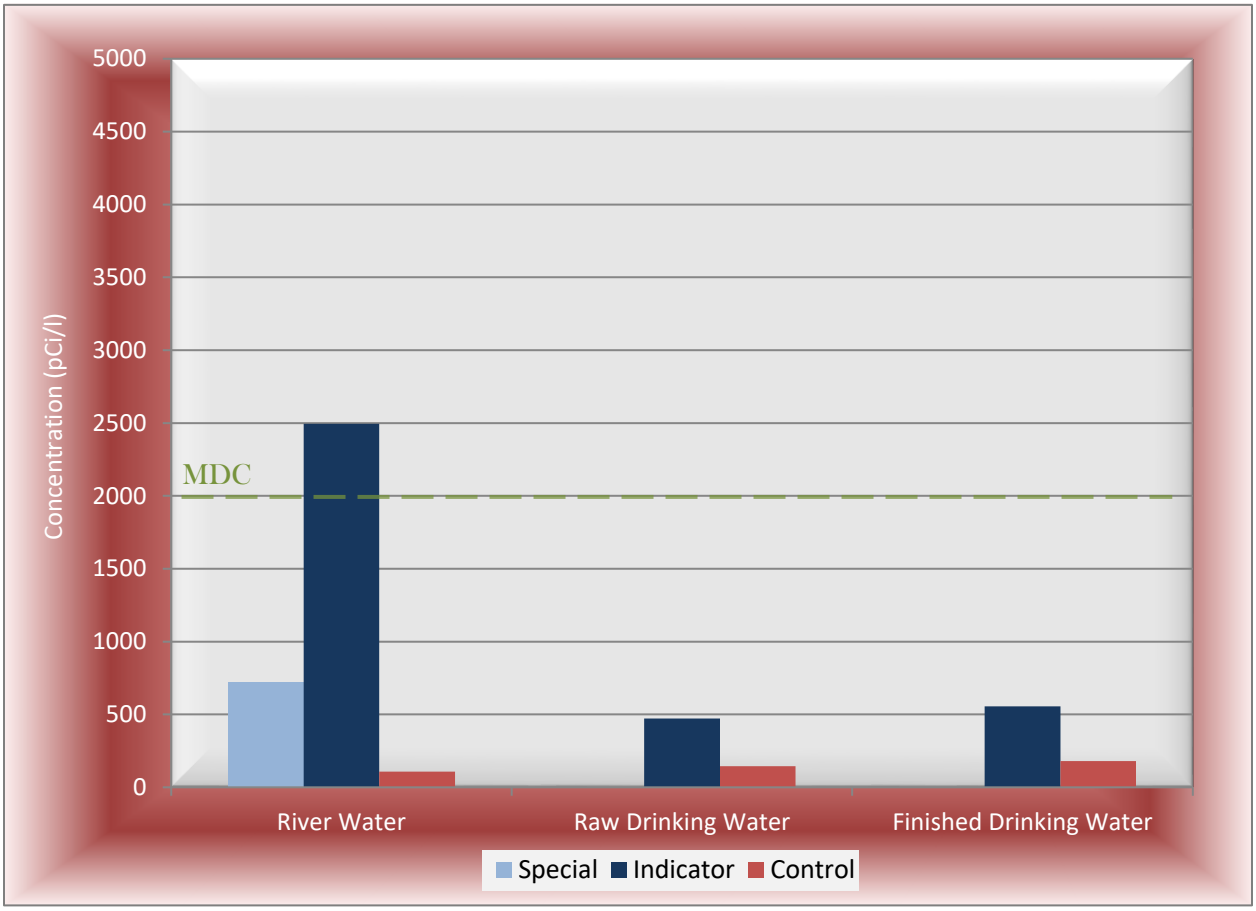
Composite river water samples are collected monthly at an upstream control location and at two downstream indicator locations (shown on Map A-3). The details of the sampling protocols are outlined in Tables 2-1 and Table 2-2. A gamma isotopic analysis is conducted on each monthly sample and the monthly aliquots are combined to form quarterly composite samples, which are analyzed for tritium.

As provided in Table 3-1, there were no positive results during 2017 from the gamma isotopic analysis of the river water samples. Also indicated in Table 3-1, the average tritium concentration found at the indicator station was 2,495 pCi/l which was 2,387 pCi/l greater than the average at the control station (108 pCi/l). The river water tritium MDD was calculated to be 1,223 pCi/l, so the difference is statistically discernible. The values at the indicator are slightly above the MDC of 2,000 pCi/l but well below the RL of 20,000 pCi/l for tritium in drinking water. Similar to the raw and finished water samples at the treatment plants, this increased tritium can likely be attributed to plant activity from Vogtle and other upstream dischargers. Tritium is released regularly from the plant during normal operations, but always at levels that will not impact the MDC or RL.

At the "Other" river water sampling station (Station 84), the results ranged from 256 pCi/l to 1,080 pCi/l with an average of 721 pCi/l. The difference between the Station 84 and the control station was 593 pCi/l. The MDD was calculated to be 361 pCi/l, which would indicate a difference that is statistically discernible. Since the value is only slightly above the MDD and below the MDC and the RL, no adverse environmental impact exists. Historically, the relationship between the

indicator/control stations and Station 84 has remained consistent. Figure 3-6 below details the 2017 average tritium concentrations across the three water sample types.

Figure 3-6. 2017 Average Tritium Concentrations in River, Raw Drinking, and Finished Drinking Water



3.6 Sediment

Sediment was collected along the shoreline of the Savannah River in the spring and fall at Stations 81 and 83. Station 81 is a control station located about 2.5 miles upriver of the plant intake structure while Station 83 is an indicator station located about 0.6 miles downriver of the plant discharge structure. A gamma isotopic analysis was performed on each sample. The radionuclides detected in 2017 samples were Be-7 and Cs-137. Though Be-7 was detected in sediment, it will not be discussed within this report, because it was not detected in plant effluents and likely represents naturally occurring and/or background conditions.

For Cs-137, the average concentration at the indicator station during 2017 was 87.1 pCi/kg-dry which was 27 pCi/kg-dry greater than that at the control station (60.1 pCi/kg-dry). The concentration of Cs-137 found at the indicator and control stations could be attributed to plant

effluents or to other facilities that release radioactive effluents upstream of the sample location. There are not enough sample points to calculate a MDD value; however, both the indicator and control values for Cs-137 were less than the MDC of 180 pCi/kg-dry and therefore no impact to the environment was indicated.

Co-58 and Co-60 have been occasionally detected in past results, and were both detected in one of the sediment samples taken in 2017. The Co-58 value was at 53.9 pCi/kg-dry and the Co-60 value was at 26.5 pCi/kg-dry. A review of plant effluents indicates that both isotopes are regularly released, indicating some correlation between plant releases and field monitoring. Currently, Co-58 and Co-60 are not reported as part of the Vogtle REMP; however, if these isotopes are consistently observed in subsequent sediment samples, they will be evaluated for inclusion in the REMP. There are no MDC values or reporting levels for Co-58 or Co-60 in sediment results.

3.7 Interlaboratory Comparison Program

In accordance with ODCM 4.1.3, GPCEL participates in an Interlaboratory Comparison Program (ICP) that satisfies the requirements of Regulatory Guide 4.15, Revision 1, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment", February 1979. The ICP includes the required determinations (sample medium/radionuclide combinations) included in the REMP.

The ICP was conducted by Eckert & Ziegler Analytics, Inc. (EZA) of Atlanta, Georgia. EZA has a documented Quality Assurance (QA) program and the capability to prepare Quality Control (QC) materials traceable to the National Institute of Standards and Technology. The ICP is a third party blind testing program which provides a means to ensure independent checks are performed on the accuracy and precision of the measurements of radioactive materials in environmental sample matrices. EZA supplies the crosscheck samples to GPCEL which performs routine laboratory analyses. Each of the specified analyses is performed three times.

The accuracy of each result is measured by the normalized deviation, which is the ratio of the reported average less the known value to the total error. An investigation is undertaken whenever the absolute value of the normalized deviation is greater than three or whenever the coefficient of variation is greater than 15% for all radionuclides other than Cr-51 and Fe-59. For Cr-51 and Fe-59, an investigation is undertaken when the coefficient of variation exceeds the values shown on Table 3-6 below:

Table 3-6. Interlaboratory Comparison Limits

Nuclide	Concentration *	Total Sample Activity (pCi)	Percent Coefficient of Variation
Cr-51	<300	NA	25
	NA	>1000	25
	>300	<1000	15
Fe-59	<80	NA	25
	>80	NA	15
* For air filters, concentration units are pCi/filter. For all other media, concentration units are pCi/liter (pCi/l).			

As required by ODCM 4.1.3.3 and 7.1.2.3, a summary of the results of the GPCEL's participation in the ICP is provided in Table 3-7 for:

- gross beta and gamma isotopic analyses of an air filter
- gamma isotopic analyses of milk samples
- gross beta, tritium and gamma isotopic analyses of water samples

The 2017 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy (less than 15% coefficient of variation and less than 3.0 normalized deviations, except for Cr-51 and Fe-59, which are outlined in Table 3-6).

The 2017 analyses included tritium, gross beta and gamma emitting radio-nuclides in different matrices. The attached results for all analyses were within acceptable limits for accuracy.

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
I-131 ANALYSIS OF AN AIR CARTRIDGE (pCi/cartridge)							
I-131	9/14/2017	64.15	64.4	2.94	1.08	7.02	-0.06
GAMMA ISOTOPIC ANALYSIS OF AN AIR FILTER (pCi/filter)							
Ce-141	9/14/2017	74.01	69.4	1.70	1.06	5.87	1.06
Co-58	9/14/2017	98.46	93.2	3.05	1.10	6.01	0.89
Co-60	9/14/2017	211.62	209	3.04	1.53	4.15	0.30
Cr-51	9/14/2017	186.96	173	10.8	2.67	10.9	0.68
Cs-134	9/14/2017	160.43	160	3.44	1.54	4.82	0.06
Cs-137	9/14/2017	149.23	137	6.40	1.34	6.12	1.34
Fe-59	9/14/2017	108.23	100	8.51	1.03	9.38	0.72
Mn-54	9/14/2017	106.8	97.9	4.86	1.72	6.70	1.25
Zn-65	9/14/2017	170.91	147	6.19	2.02	6.56	2.13
GROSS BETA ANALYSIS OF AN AIR FILTER (PCI/FILTER)							
Gross Beta	9/14/2017	92.28	85.4	1.43	1.43	4.27	1.75
GAMMA ISOTOPIC ANALYSIS OF A MILK SAMPLE (PCI/LITER)							
Co-58	6/8/2017	168.15	155	5.78	2.60	6.45	1.21
Co-60	6/8/2017	214.34	191	7.33	3.19	5.45	2.00
Cr-51	6/8/2017	337.84	315	17.3	5.26	11.3	0.60
Cs-134	6/8/2017	216.43	188	7.71	3.14	5.30	2.48
Cs-137	6/8/2017	173.26	150	6.57	2.51	6.44	2.09
Fe-59	6/8/2017	126.48	115	5.58	1.92	9.39	0.97
I-131	6/8/2017	98.08	93.6	5.92	1.56	10.3	0.44
Mn-54	6/8/2017	199.41	172	6.35	2.87	5.95	2.31
Zn-65	6/8/2017	240.6	204	14.4	3.40	8.54	1.78
GROSS BETA ANALYSIS OF WATER SAMPLE (PCI/LITER)							
Gross Beta	3/16/2017	316.8	280	9.48	4.67	4.76	2.44
	6/8/2017	302.4	270	6.51	4.51	3.34	3.21
GAMMA ISOTOPIC ANALYSIS OF WATER SAMPLES (PCI/LITER)							
Ce-141	3/16/2017	152.59	145	7.32	2.43	8.12	0.61

Table 3-7. Interlaboratory Comparison Summary

Analysis or Radionuclide	Date Prepared	Reported Average	Known Value	Standard Deviation EL	Uncertainty Analytics (3S)	Percent Coefficient of Variation	Normalized Deviation
Co-58	3/16/2017	159.58	150	7.44	2.51	7.29	0.82
Co-60	3/16/2017	192.12	183	7.22	3.06	5.92	0.80
Cr-51	3/16/2017	306.58	291	18.5	4.86	13.62	0.37
Cs-134	3/16/2017	131.24	120	6.49	2.01	6.77	1.27
Cs-137	3/16/2017	153.83	140	3.41	2.34	6.20	1.45
Fe-59	3/16/2017	133.31	129	11.3	2.16	11.23	0.29
I-131	3/16/2017	110.09	97.7	8.22	1.63	13.22	0.85
Mn-54	3/16/2017	177.8	165	6.87	2.75	6.66	1.08
Zn-65	3/16/2017	226.49	200	7.45	3.34	7.17	1.63
TRITIUM ANALYSIS OF WATER SAMPLES (PCI/LITER)							
H-3	3/16/2017	10209.4	9980	64.6	167	2.25	1.00
	6/8/2017	14309	14000	78.2	233	2.05	1.05

3.8 Groundwater

To ensure compliance with NEI 07-07 (Industry Ground Water Protection Initiative – Final Guidance Document), Southern Nuclear developed the Nuclear Management Procedure, Radiological Groundwater Protection Program. The procedure contains detailed site-specific monitoring plans, program technical bases, and communications protocol (to ensure that radioactive leaks and spills are addressed and communicated appropriately). In an effort to prevent future leaks of radioactive material to groundwater, SNC plants have established buried piping and tanks inspection programs.

Plant Vogtle maintains the following wells (Table 3-8), which are sampled at a frequency that satisfies the requirements of NEI 07-07. The analytical results for 2017 were all within regulatory limits specified within this report. Table 3-9 contains the results of the Groundwater Protection Program tritium results (in pCi/L).

Table 3-8. Groundwater Protection Program Locations

Well	Aquifer	Monitoring Purpose
LT-1B	Water Table	NSCW related tank
LT-7A	Water Table	NSCW related tank
LT-12	Water Table	NSCW related tank
LT-13	Water Table	NSCW related tank
802A	Water Table	Southeastern potential leakage
806B	Water Table	Dilution line
808	Water Table	Up gradient; along Pen Branch Fault
R1	Water Table	NSCW related tank; western potential leakage
R2	Water Table	Southern potential leakage
R3	Water Table	Eastern potential leakage
R4	Water Table	Dilution line
R5	Water Table	Dilution line
R6	Water Table	Dilution line
R7	Water Table	Dilution line
R8	Water Table within Sav. River sediments	Dilution line
1014	Tertiary	Up gradient
1015	Water Table	Vertically up gradient
MU-1	Tertiary/Cretaceous	Facility water supply
River	N/A	Surface water

NSCW – Nuclear service cooling water

Table 3-9. Groundwater Protection Program Tritium Results (pCi/L)

Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
LT-1B	NS	216	NS	287
LT-7A	NS	636	NS	565
LT-12	NS	1,770	1,930	1,660
LT-13	NS	741	NS	347
802A	NS	194	NS	285
806B	NS	224	NS	468
808	NS	261	NS	239
R1	NS	257	NS	175
R2	NS	417	NS	NDM
R3	NS	247	NS	362
R4	NS	NDM	NS	NDM
R5	NS	263	NS	224
R6	NS	277	NS	299
R7	NS	NDM	NS	NDM
R8	NS	156	NS	NDM
1014	NS	NDM	NS	NDM
1015	NS	269	NS	184
MU-1	NS	NS	NS	NDM
River	NS	181	NS	NDM

NDM – No Detectable Measurement
NS – Not Sampled

4 SURVEY SUMMARIES

4.1 Land Use Census

In accordance with ODCM 4.1.2, a land use census was conducted in November 2017 to verify the locations of the nearest radiological receptor within five miles. The census results, shown in Table 4-1, indicated no major changes from 2016.

Table 4-1. Land Use Census Results

Sector	Residence	Milk Animal*	Beef Cattle	Garden**
Distance in Miles to the Nearest Location in Each Sector				
N	1.4	None	None	None
NNE	None	None	None	None
NE	None	None	None	None
ENE	None	None	None	None
E	None	None	None	None
ESE	4.2	None	None	None
SE	4.3	None	4.9	None
SSE	4.7	None	4.7	None
S	4.4	None	None	None
SSW	4.7	None	4.7	None
SW	3.1	None	4.4	None
WSW	2.6	None	2.7	None
W	3.4	None	4.7	4.1
WNW	1.9	None	None	None
NW	1.5	None	1.8	None
NNW	1.5	None	None	None

*A milk animal is a cow or goat producing milk for human consumption.
**A garden of greater than 500 square feet producing broad leaf vegetation.
Note: Land within SRS was excluded from the census.

4.2 Savannah River Survey

A survey of the Savannah River downstream of the plant for approximately 100 miles (approximately river miles 44.7 to 151.2) was conducted on December 18, 2017 to identify any new withdrawal of water from the river for drinking, irrigation, or construction purposes. No new usage was visually identified. These results were verified with both the Georgia Department of Natural Resources and the South Carolina Department of Health and Environmental Control (SC

DEHEC) on December 12 and December 14, 2017, respectively. Each of these agencies confirmed that no water withdrawal permits for drinking, irrigation, or construction purposes had been issued for this stretch of the Savannah River. It should be noted that Vogtle Units 3 and 4 received a surface water withdrawal permit in December of 2015.

5 CONCLUSIONS

This report confirms SNCs conformance with the requirements of Chapter 4 of the ODCM and the objectives were to:

1) Determine the levels of radiation and the concentrations of radioactivity in the environs and;

2) Assess the radiological impact (if any) to the environment due to the operation of the VEGP.

Based on the 2017 activities associated with the REMP, SNC offers the following conclusions:

- Samples were collected and there were no deviations or anomalies that negatively affected the quality of the REMP
- Land use census and river survey did not reveal any significant changes
- Analytical results were below reporting levels
- These values are consistent with historical results, indicating no adverse radiological environmental impacts associated with the operation of VEGP

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APPENDIX A

Maps

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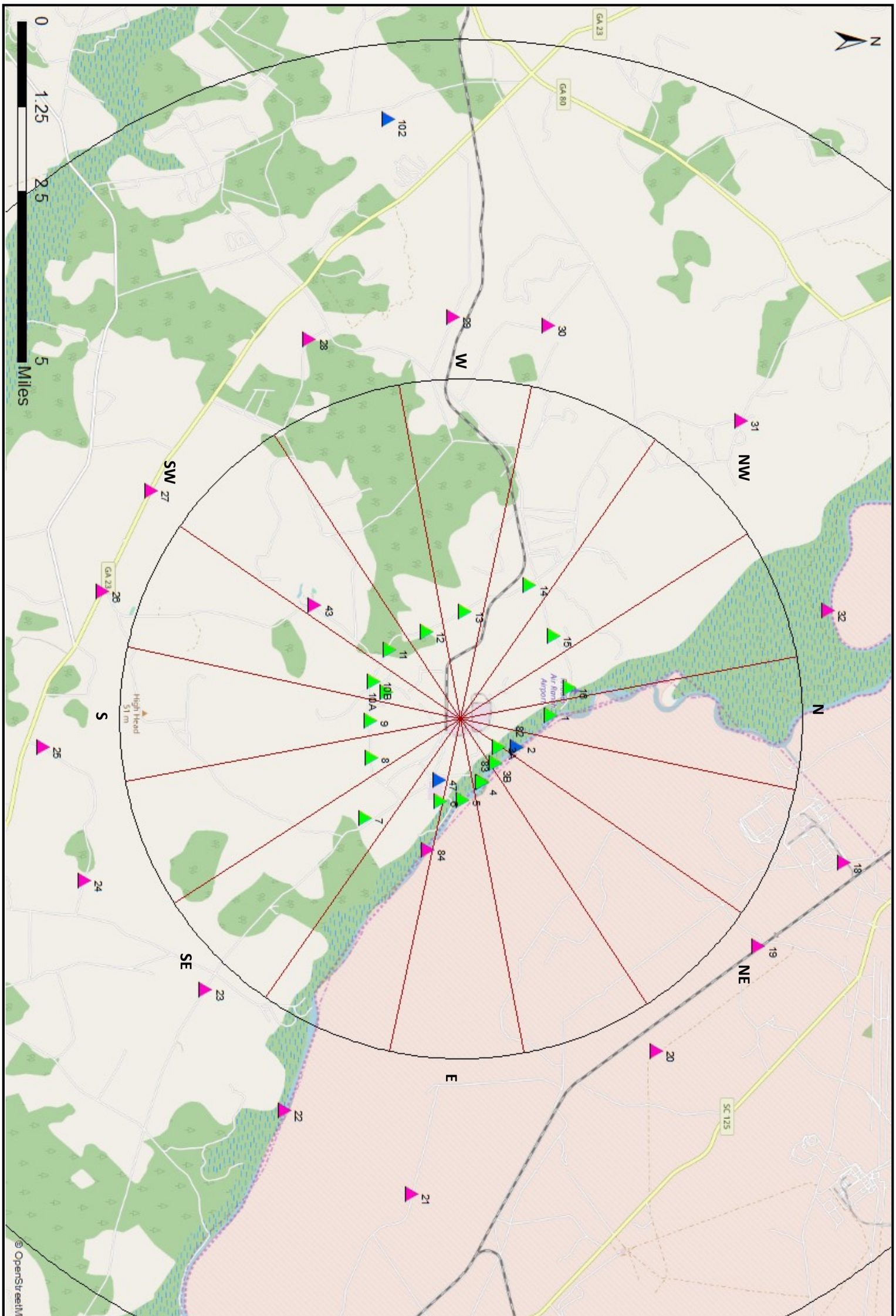


Legend: Indicator Stations - Control Stations - Other Stations -	Vogtle Electric Generating Plant 2017 Annual Radiological Environmental Report REMP Stations in Plant Vicinity	Southern Nuclear	Drawn by: C. Groce May 1, 2018	Appendix A Map A-1

Appendix A

Map A-2

Vogtle Electric Generating Plant

2013 Annual Radiological Environmental Report

REMP Stations within 10 miles

Drawn by: C. Groce

April 30, 2014

May 1, 2014

Southern Nuclear

Legend:

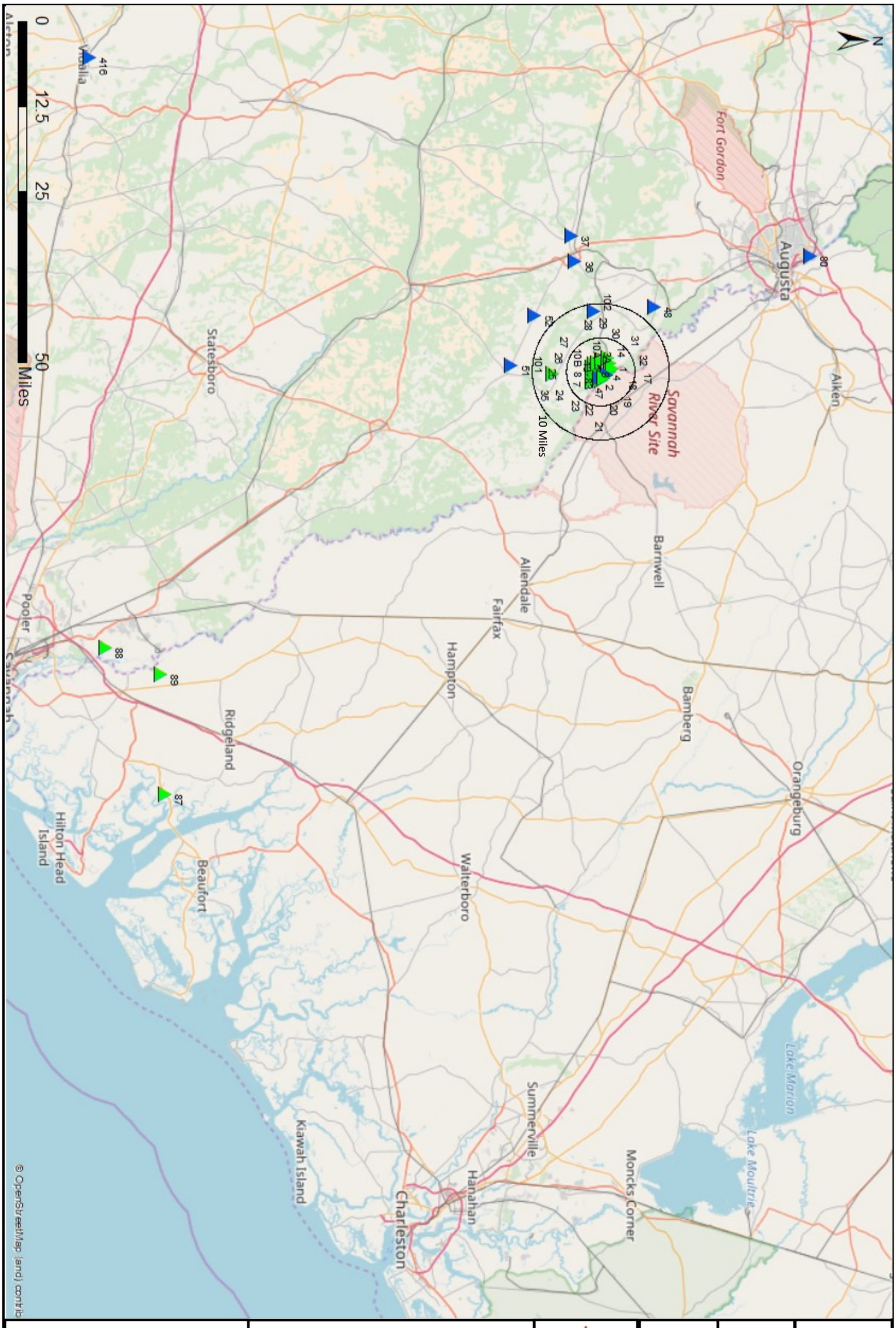
Indicator Stations -

Control Stations -

Other Stations -

10 Miles

0 2.5 5 10 Miles



Legend:

Indicator Stations -

Control Stations -

Other Stations -

Vogtle Electric Generating Plant

2017 Annual Radiological Environmental Report

Extended REMP Stations

Southern Nuclear

Drawn by:	C. Groce	Appendix A
May 1, 2018		Map A-3

N

850A
853
R-8
29
808
1006
806B
R-4
R-5
R-7
R-6
27
LT-1B
LT-7A
LT-13
R-1
LT-12
R-3
803A
802A
R-2
805A
852
1014
1015
856

0 1,250 2,500 5,000 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix A
Map A-4

C. Groce

Drawn by:

April 30, 2016
May 31, 2016

Southern Nuclear

Vogtle Electric Generating Plant
2015 Annual Radiological Environmental Report
Facility Groundwater Wells

Legend:

Surficial Aquifer -

Tertiary Aquifer -

APPENDIX B

Errata

There are no errata for the 2017 reporting year.

APPENDIX C

Data

The following pages contain the individual data points from the 2017 reporting year. The units for the data points varies by media, as follows:

- Airborne Radioiodine and Particulates/Water/Milk – picocuries/liter (pCi/l)
- Sediment/Vegetation/Fish – picocuries/kilogram (pCi/kg)
- Direct Radiation – millirem (mR)

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Sample ID	Collect Date	Loc. ID	Nuclide	Results	95% CL	MDA	Matrix
107709004	1/4/2017	DIS	J-131	0	0	.009275	Air Cartridge
107878004	1/10/2017	DIS	J-131	0	0	.01528	Air Cartridge
107973004	1/17/2017	DIS	J-131	0	0	.01331	Air Cartridge
108094004	1/24/2017	DIS	J-131	0	0	.02536	Air Cartridge
108205004	1/31/2017	DIS	J-131	0	0	.01613	Air Cartridge
108347004	2/7/2017	DIS	J-131	0	0	.01219	Air Cartridge
108442004	2/14/2017	DIS	J-131	0	0	.01202	Air Cartridge
108542004	2/21/2017	DIS	J-131	0	0	.01792	Air Cartridge
108630004	2/28/2017	DIS	J-131	0	0	.01222	Air Cartridge
108732004	3/7/2017	DIS	J-131	0	0	.02154	Air Cartridge
108838004	3/14/2017	DIS	J-131	0	0	.01397	Air Cartridge
108959004	3/21/2017	DIS	J-131	0	0	.014	Air Cartridge
109072004	3/28/2017	DIS	J-131	0	0	.02874	Air Cartridge
109224004	4/4/2017	DIS	J-131	0	0	.01134	Air Cartridge
109320004	4/11/2017	DIS	J-131	0	0	.07018	Air Cartridge
109440004	4/18/2017	DIS	J-131	0	0	.0128	Air Cartridge
109560004	4/25/2017	DIS	J-131	0	0	.02548	Air Cartridge
109666004	5/2/2017	DIS	J-131	0	0	.0195	Air Cartridge
109802004	5/9/2017	DIS	J-131	0	0	.0198	Air Cartridge
109927004	5/16/2017	DIS	J-131	0	0	.01255	Air Cartridge
110045004	5/23/2017	DIS	J-131	0	0	.01343	Air Cartridge
110181004	5/31/2017	DIS	J-131	0	0	.01085	Air Cartridge
110285004	6/6/2017	DIS	J-131	0	0	.01556	Air Cartridge
110401004	6/13/2017	DIS	J-131	0	0	.02172	Air Cartridge
110544004	6/20/2017	DIS	J-131	0	0	.01578	Air Cartridge
110670004	6/27/2017	DIS	J-131	0	0	.01347	Air Cartridge
110807004	7/6/2017	DIS	J-131	0	0	.01664	Air Cartridge
110877004	7/11/2017	DIS	J-131	0	0	.01986	Air Cartridge
111048004	7/18/2017	DIS	J-131	0	0	.01446	Air Cartridge
111150004	7/25/2017	DIS	J-131	0	0	.01352	Air Cartridge
111272004	8/1/2017	DIS	J-131	0	0	.02166	Air Cartridge
111400004	8/8/2017	DIS	J-131	0	0	.01377	Air Cartridge
111522004	8/14/2017	DIS	J-131	0	0	.0246	Air Cartridge
111706004	8/23/2017	DIS	J-131	0	0	.01356	Air Cartridge
111816004	8/29/2017	DIS	J-131	0	0	.01606	Air Cartridge
111910004	9/6/2017	DIS	J-131	0	0	.02468	Air Cartridge
111992004	9/12/2017	DIS	J-131	0	0	.02015	Air Cartridge
112181004	9/19/2017	DIS	J-131	0	0	.009749	Air Cartridge
112326004	9/26/2017	DIS	J-131	0	0	.0154	Air Cartridge
112450004	10/3/2017	DIS	J-131	0	0	.009118	Air Cartridge
112568004	10/10/2017	DIS	J-131	0	0	.01343	Air Cartridge
112689004	10/17/2017	DIS	J-131	0	0	.005207	Air Cartridge
112801004	10/24/2017	DIS	J-131	0	0	.01882	Air Cartridge
112895004	10/31/2017	DIS	J-131	0	0	.0155	Air Cartridge
112996004	11/7/2017	DIS	J-131	0	0	.01225	Air Cartridge
113094004	11/14/2017	DIS	J-131	0	0	.0125	Air Cartridge

113155004	11/21/2017	DIS	J-131	0	0	.009724	Air Cartridge
113215004	11/28/2017	DIS	J-131	0	0	.01181	Air Cartridge
113344004	12/5/2017	DIS	J-131	0	0	.01287	Air Cartridge
113410004	12/12/2017	DIS	J-131	0	0	.01608	Air Cartridge
113538004	12/19/2017	DIS	J-131	0	0	.007222	Air Cartridge
113554004	12/27/2017	DIS	J-131	0	0	.01503	Air Cartridge
107709002	1/4/2017	GIR	J-131	0	0	.01631	Air Cartridge
107878002	1/10/2017	GIR	J-131	0	0	.02245	Air Cartridge
107973002	1/17/2017	GIR	J-131	0	0	.009495	Air Cartridge
108094002	1/24/2017	GIR	J-131	0	0	.00915	Air Cartridge
108205002	1/31/2017	GIR	J-131	0	0	.01648	Air Cartridge
108347002	2/7/2017	GIR	J-131	0	0	.009328	Air Cartridge
108442002	2/14/2017	GIR	J-131	0	0	.01332	Air Cartridge
108542002	2/21/2017	GIR	J-131	0	0	.01414	Air Cartridge
108630002	2/28/2017	GIR	J-131	0	0	.01891	Air Cartridge
108732002	3/7/2017	GIR	J-131	0	0	.01181	Air Cartridge
108838002	3/14/2017	GIR	J-131	0	0	.01971	Air Cartridge
108959002	3/21/2017	GIR	J-131	0	0	.01051	Air Cartridge
109072002	3/28/2017	GIR	J-131	0	0	.01474	Air Cartridge
109224002	4/4/2017	GIR	J-131	0	0	.01458	Air Cartridge
109320002	4/11/2017	GIR	J-131	0	0	.01468	Air Cartridge
109440002	4/18/2017	GIR	J-131	0	0	.01367	Air Cartridge
109560002	4/25/2017	GIR	J-131	0	0	.01709	Air Cartridge
109666002	5/2/2017	GIR	J-131	0	0	.01279	Air Cartridge
109802002	5/9/2017	GIR	J-131	0	0	.01017	Air Cartridge
109927002	5/16/2017	GIR	J-131	0	0	.02135	Air Cartridge
110045002	5/23/2017	GIR	J-131	0	0	.01304	Air Cartridge
110181002	5/31/2017	GIR	J-131	0	0	.01123	Air Cartridge
110285002	6/6/2017	GIR	J-131	0	0	.01525	Air Cartridge
110401002	6/13/2017	GIR	J-131	0	0	.0117	Air Cartridge
110544002	6/20/2017	GIR	J-131	0	0	.01412	Air Cartridge
110670002	6/27/2017	GIR	J-131	0	0	.01318	Air Cartridge
110807002	7/6/2017	GIR	J-131	0	0	.0101	Air Cartridge
110877002	7/11/2017	GIR	J-131	0	0	.0401	Air Cartridge
111048002	7/18/2017	GIR	J-131	0	0	.01518	Air Cartridge
111150002	7/25/2017	GIR	J-131	0	0	.02176	Air Cartridge
111272002	8/1/2017	GIR	J-131	0	0	.007153	Air Cartridge
111400002	8/8/2017	GIR	J-131	0	0	.01299	Air Cartridge
111522002	8/14/2017	GIR	J-131	0	0	.01438	Air Cartridge
111706002	8/23/2017	GIR	J-131	0	0	.01749	Air Cartridge
111816002	8/29/2017	GIR	J-131	0	0	.03298	Air Cartridge
111910002	9/6/2017	GIR	J-131	0	0	.02315	Air Cartridge
111992002	9/12/2017	GIR	J-131	0	0	.01538	Air Cartridge
112181002	9/19/2017	GIR	J-131	0	0	.01336	Air Cartridge
112326002	9/26/2017	GIR	J-131	0	0	.009121	Air Cartridge
112450002	10/3/2017	GIR	J-131	0	0	.01184	Air Cartridge
112568002	10/10/2017	GIR	J-131	0	0	.02128	Air Cartridge

112689002	10/17/2017	GIR	J-131	0	0	.008871	Air Cartridge
112801002	10/24/2017	GIR	J-131	0	0	.01249	Air Cartridge
112895002	10/31/2017	GIR	J-131	0	0	.01722	Air Cartridge
112996002	11/7/2017	GIR	J-131	0	0	.01952	Air Cartridge
113094002	11/14/2017	GIR	J-131	0	0	.02038	Air Cartridge
113155002	11/21/2017	GIR	J-131	0	0	.009227	Air Cartridge
113215002	11/28/2017	GIR	J-131	0	0	.01502	Air Cartridge
113344002	12/5/2017	GIR	J-131	0	0	.01266	Air Cartridge
113410002	12/12/2017	GIR	J-131	0	0	.01001	Air Cartridge
113538002	12/19/2017	GIR	J-131	0	0	.009866	Air Cartridge
113554002	12/27/2017	GIR	J-131	0	0	.02202	Air Cartridge
107709007	1/4/2017	HAN	J-131	0	0	.02239	Air Cartridge
107878007	1/10/2017	HAN	J-131	0	0	.01462	Air Cartridge
107973007	1/17/2017	HAN	J-131	0	0	.01797	Air Cartridge
108094007	1/24/2017	HAN	J-131	0	0	.01885	Air Cartridge
108205007	1/31/2017	HAN	J-131	0	0	.008983	Air Cartridge
108347007	2/7/2017	HAN	J-131	0	0	.01156	Air Cartridge
108442007	2/14/2017	HAN	J-131	0	0	.01498	Air Cartridge
108542007	2/21/2017	HAN	J-131	0	0	.01641	Air Cartridge
108630007	2/28/2017	HAN	J-131	0	0	.009436	Air Cartridge
108732007	3/7/2017	HAN	J-131	0	0	.01135	Air Cartridge
108838007	3/14/2017	HAN	J-131	0	0	.02452	Air Cartridge
108959007	3/21/2017	HAN	J-131	0	0	.01304	Air Cartridge
109072007	3/28/2017	HAN	J-131	0	0	.01252	Air Cartridge
109224007	4/4/2017	HAN	J-131	0	0	.02975	Air Cartridge
109320007	4/11/2017	HAN	J-131	0	0	.01553	Air Cartridge
109440007	4/18/2017	HAN	J-131	0	0	.01498	Air Cartridge
109560007	4/25/2017	HAN	J-131	0	0	.02241	Air Cartridge
109666007	5/2/2017	HAN	J-131	0	0	.01184	Air Cartridge
109802007	5/9/2017	HAN	J-131	0	0	.02119	Air Cartridge
109927007	5/16/2017	HAN	J-131	0	0	.02144	Air Cartridge
110045007	5/23/2017	HAN	J-131	0	0	.01572	Air Cartridge
110181007	5/31/2017	HAN	J-131	0	0	.01054	Air Cartridge
110285007	6/6/2017	HAN	J-131	0	0	.01798	Air Cartridge
110401007	6/13/2017	HAN	J-131	0	0	.01185	Air Cartridge
110544007	6/20/2017	HAN	J-131	0	0	.007561	Air Cartridge
110670007	6/27/2017	HAN	J-131	0	0	.01412	Air Cartridge
110807007	7/6/2017	HAN	J-131	0	0	.01166	Air Cartridge
110877007	7/11/2017	HAN	J-131	0	0	.02272	Air Cartridge
111048007	7/18/2017	HAN	J-131	0	0	.014	Air Cartridge
111150007	7/25/2017	HAN	J-131	0	0	.01325	Air Cartridge
111272007	8/1/2017	HAN	J-131	0	0	.009315	Air Cartridge
111400007	8/8/2017	HAN	J-131	0	0	.0128	Air Cartridge
111522007	8/14/2017	HAN	J-131	0	0	.01744	Air Cartridge
111706007	8/23/2017	HAN	J-131	0	0	.02031	Air Cartridge
111816007	8/29/2017	HAN	J-131	0	0	.01473	Air Cartridge
111910007	9/6/2017	HAN	J-131	0	0	.01024	Air Cartridge

111992007	9/12/2017	HAN	J-131	0	0	.01768	Air Cartridge
112181007	9/19/2017	HAN	J-131	0	0	.007881	Air Cartridge
112326007	9/26/2017	HAN	J-131	0	0	.0111	Air Cartridge
112450007	10/3/2017	HAN	J-131	0	0	.008315	Air Cartridge
112568007	10/10/2017	HAN	J-131	0	0	.01782	Air Cartridge
112689007	10/17/2017	HAN	J-131	0	0	.01035	Air Cartridge
112801007	10/24/2017	HAN	J-131	0	0	.01178	Air Cartridge
112895007	10/31/2017	HAN	J-131	0	0	.02175	Air Cartridge
112996007	11/7/2017	HAN	J-131	0	0	.01121	Air Cartridge
113094007	11/14/2017	HAN	J-131	0	0	.009089	Air Cartridge
113155007	11/21/2017	HAN	J-131	0	0	.01088	Air Cartridge
113215007	11/28/2017	HAN	J-131	0	0	.01045	Air Cartridge
113344007	12/5/2017	HAN	J-131	0	0	.01192	Air Cartridge
113410007	12/12/2017	HAN	J-131	0	0	.0214	Air Cartridge
113538007	12/19/2017	HAN	J-131	0	0	.01664	Air Cartridge
113554007	12/27/2017	HAN	J-131	0	0	.0107	Air Cartridge
107709005	1/4/2017	MET	J-131	0	0	.01066	Air Cartridge
107878005	1/10/2017	MET	J-131	0	0	.01888	Air Cartridge
107973005	1/17/2017	MET	J-131	0	0	.01609	Air Cartridge
108094005	1/24/2017	MET	J-131	0	0	.01486	Air Cartridge
108205005	1/31/2017	MET	J-131	0	0	.01486	Air Cartridge
108347005	2/7/2017	MET	J-131	0	0	.009389	Air Cartridge
108442005	2/14/2017	MET	J-131	0	0	.009098	Air Cartridge
108542005	2/21/2017	MET	J-131	0	0	.01381	Air Cartridge
108630005	2/28/2017	MET	J-131	0	0	.01212	Air Cartridge
108732005	3/7/2017	MET	J-131	0	0	.01651	Air Cartridge
108838005	3/14/2017	MET	J-131	0	0	.01146	Air Cartridge
108959005	3/21/2017	MET	J-131	0	0	.01627	Air Cartridge
109072005	3/28/2017	MET	J-131	0	0	.0101	Air Cartridge
109224005	4/4/2017	MET	J-131	0	0	.01696	Air Cartridge
109320005	4/11/2017	MET	J-131	0	0	.01241	Air Cartridge
109440005	4/18/2017	MET	J-131	0	0	.02246	Air Cartridge
109560005	4/25/2017	MET	J-131	0	0	.01851	Air Cartridge
109666005	5/2/2017	MET	J-131	0	0	.0233	Air Cartridge
109802005	5/9/2017	MET	J-131	0	0	.02321	Air Cartridge
109927005	5/16/2017	MET	J-131	0	0	.01132	Air Cartridge
110045005	5/23/2017	MET	J-131	0	0	.01105	Air Cartridge
110181005	5/31/2017	MET	J-131	0	0	.01133	Air Cartridge
110285005	6/6/2017	MET	J-131	0	0	.0145	Air Cartridge
110401005	6/13/2017	MET	J-131	0	0	.01493	Air Cartridge
110544005	6/20/2017	MET	J-131	0	0	.006011	Air Cartridge
110670005	6/27/2017	MET	J-131	0	0	.01845	Air Cartridge
110807005	7/6/2017	MET	J-131	0	0	.009659	Air Cartridge
110877005	7/11/2017	MET	J-131	0	0	.02296	Air Cartridge
111048005	7/18/2017	MET	J-131	0	0	.01348	Air Cartridge
111150005	7/25/2017	MET	J-131	0	0	.01265	Air Cartridge
111272005	8/1/2017	MET	J-131	0	0	.008321	Air Cartridge

111400005	8/8/2017	MET	J-131	0	0	.01929	Air Cartridge
111522005	8/14/2017	MET	J-131	0	0	.01406	Air Cartridge
111706005	8/23/2017	MET	J-131	0	0	.01921	Air Cartridge
111816005	8/29/2017	MET	J-131	0	0	.02155	Air Cartridge
111910005	9/6/2017	MET	J-131	0	0	.01048	Air Cartridge
111992005	9/12/2017	MET	J-131	0	0	.01179	Air Cartridge
112181005	9/19/2017	MET	J-131	0	0	.01164	Air Cartridge
112326005	9/26/2017	MET	J-131	0	0	.01459	Air Cartridge
112450005	10/3/2017	MET	J-131	0	0	.01086	Air Cartridge
112568005	10/10/2017	MET	J-131	0	0	.01472	Air Cartridge
112689005	10/17/2017	MET	J-131	0	0	.02195	Air Cartridge
112801005	10/24/2017	MET	J-131	0	0	.01187	Air Cartridge
112895005	10/31/2017	MET	J-131	0	0	.01692	Air Cartridge
112996005	11/7/2017	MET	J-131	0	0	.01462	Air Cartridge
113094005	11/14/2017	MET	J-131	0	0	.01973	Air Cartridge
113155005	11/21/2017	MET	J-131	0	0	.01124	Air Cartridge
113215005	11/28/2017	MET	J-131	0	0	.01449	Air Cartridge
113344005	12/5/2017	MET	J-131	0	0	.01973	Air Cartridge
113410005	12/12/2017	MET	J-131	0	0	.009317	Air Cartridge
113538005	12/19/2017	MET	J-131	0	0	.02763	Air Cartridge
113554005	12/27/2017	MET	J-131	0	0	.01818	Air Cartridge
107709006	1/4/2017	RRD	J-131	0	0	.01637	Air Cartridge
107878006	1/10/2017	RRD	J-131	0	0	.01532	Air Cartridge
107973006	1/17/2017	RRD	J-131	0	0	.01707	Air Cartridge
108094006	1/24/2017	RRD	J-131	0	0	.01254	Air Cartridge
108205006	1/31/2017	RRD	J-131	0	0	.01512	Air Cartridge
108347006	2/7/2017	RRD	J-131	0	0	.02196	Air Cartridge
108442006	2/14/2017	RRD	J-131	0	0	.01191	Air Cartridge
108542006	2/21/2017	RRD	J-131	0	0	.009074	Air Cartridge
108630006	2/28/2017	RRD	J-131	0	0	.02032	Air Cartridge
108732006	3/7/2017	RRD	J-131	0	0	.01778	Air Cartridge
108838006	3/14/2017	RRD	J-131	0	0	.01622	Air Cartridge
108959006	3/21/2017	RRD	J-131	0	0	.01404	Air Cartridge
109072006	3/28/2017	RRD	J-131	0	0	.02757	Air Cartridge
109224006	4/4/2017	RRD	J-131	0	0	.01968	Air Cartridge
109320006	4/11/2017	RRD	J-131	0	0	.01029	Air Cartridge
109440006	4/18/2017	RRD	J-131	0	0	.0145	Air Cartridge
109560006	4/25/2017	RRD	J-131	0	0	.0148	Air Cartridge
109666006	5/2/2017	RRD	J-131	0	0	.01906	Air Cartridge
109802006	5/9/2017	RRD	J-131	0	0	.01384	Air Cartridge
109927006	5/16/2017	RRD	J-131	0	0	.02113	Air Cartridge
110045006	5/23/2017	RRD	J-131	0	0	.01334	Air Cartridge
110181006	5/31/2017	RRD	J-131	0	0	.01845	Air Cartridge
110285006	6/6/2017	RRD	J-131	0	0	.01525	Air Cartridge
110401006	6/13/2017	RRD	J-131	0	0	.0199	Air Cartridge
110544006	6/20/2017	RRD	J-131	0	0	.02061	Air Cartridge
110670006	6/27/2017	RRD	J-131	0	0	.01346	Air Cartridge

110807006	7/6/2017	RRD	J-131	0	0	.02724	Air Cartridge
110877006	7/11/2017	RRD	J-131	0	0	.03144	Air Cartridge
111048006	7/18/2017	RRD	J-131	0	0	.02393	Air Cartridge
111150006	7/25/2017	RRD	J-131	0	0	.01967	Air Cartridge
111272006	8/1/2017	RRD	J-131	0	0	.01918	Air Cartridge
111400006	8/8/2017	RRD	J-131	0	0	.01336	Air Cartridge
111522006	8/14/2017	RRD	J-131	0	0	.01849	Air Cartridge
111706006	8/23/2017	RRD	J-131	0	0	.00976	Air Cartridge
111816006	8/29/2017	RRD	J-131	0	0	.0158	Air Cartridge
111910006	9/6/2017	RRD	J-131	0	0	.01106	Air Cartridge
111992006	9/12/2017	RRD	J-131	0	0	.01601	Air Cartridge
112181006	9/19/2017	RRD	J-131	0	0	.01022	Air Cartridge
112326006	9/26/2017	RRD	J-131	0	0	.01551	Air Cartridge
112450006	10/3/2017	RRD	J-131	0	0	.02536	Air Cartridge
112568006	10/10/2017	RRD	J-131	0	0	.01647	Air Cartridge
112689006	10/17/2017	RRD	J-131	0	0	.01453	Air Cartridge
112801006	10/24/2017	RRD	J-131	0	0	.02473	Air Cartridge
112895006	10/31/2017	RRD	J-131	0	0	.01972	Air Cartridge
112996006	11/7/2017	RRD	J-131	0	0	.009727	Air Cartridge
113094006	11/14/2017	RRD	J-131	0	0	.0122	Air Cartridge
113155006	11/21/2017	RRD	J-131	0	0	.01502	Air Cartridge
113215006	11/28/2017	RRD	J-131	0	0	.02113	Air Cartridge
113344006	12/5/2017	RRD	J-131	0	0	.01635	Air Cartridge
113410006	12/12/2017	RRD	J-131	0	0	.0168	Air Cartridge
113538006	12/19/2017	RRD	J-131	0	0	.01291	Air Cartridge
113554006	12/27/2017	RRD	J-131	0	0	.01836	Air Cartridge
107709003	1/4/2017	SIM	J-131	0	0	.02397	Air Cartridge
107878003	1/10/2017	SIM	J-131	0	0	.01618	Air Cartridge
107973003	1/17/2017	SIM	J-131	0	0	.01071	Air Cartridge
108094003	1/24/2017	SIM	J-131	0	0	.03053	Air Cartridge
108205003	1/31/2017	SIM	J-131	0	0	.01494	Air Cartridge
108347003	2/7/2017	SIM	J-131	0	0	.01249	Air Cartridge
108442003	2/14/2017	SIM	J-131	0	0	.01287	Air Cartridge
108542003	2/21/2017	SIM	J-131	0	0	.01836	Air Cartridge
108630003	2/28/2017	SIM	J-131	0	0	.0125	Air Cartridge
108732003	3/7/2017	SIM	J-131	0	0	.02011	Air Cartridge
108838003	3/14/2017	SIM	J-131	0	0	.02044	Air Cartridge
108959003	3/21/2017	SIM	J-131	0	0	.01425	Air Cartridge
109072003	3/28/2017	SIM	J-131	0	0	.0325	Air Cartridge
109224003	4/4/2017	SIM	J-131	0	0	.0145	Air Cartridge
109320003	4/11/2017	SIM	J-131	0	0	.01367	Air Cartridge
109440003	4/18/2017	SIM	J-131	0	0	.01697	Air Cartridge
109560003	4/25/2017	SIM	J-131	0	0	.01576	Air Cartridge
109666003	5/2/2017	SIM	J-131	0	0	.01689	Air Cartridge
109802003	5/9/2017	SIM	J-131	0	0	.01439	Air Cartridge
109927003	5/16/2017	SIM	J-131	0	0	.01371	Air Cartridge
110045003	5/23/2017	SIM	J-131	0	0	.0176	Air Cartridge

110181003	5/31/2017	SIM	J-131	0	0	.01752	Air Cartridge
110285003	6/6/2017	SIM	J-131	0	0	.02866	Air Cartridge
110401003	6/13/2017	SIM	J-131	0	0	.03295	Air Cartridge
110544003	6/20/2017	SIM	J-131	0	0	.01509	Air Cartridge
110670003	6/27/2017	SIM	J-131	0	0	.03197	Air Cartridge
110807003	7/6/2017	SIM	J-131	0	0	.01345	Air Cartridge
110877003	7/11/2017	SIM	J-131	0	0	.03578	Air Cartridge
111048003	7/18/2017	SIM	J-131	0	0	.01529	Air Cartridge
111150003	7/25/2017	SIM	J-131	0	0	.01424	Air Cartridge
111272003	8/1/2017	SIM	J-131	0	0	.02634	Air Cartridge
111400003	8/8/2017	SIM	J-131	0	0	.01394	Air Cartridge
111522003	8/14/2017	SIM	J-131	0	0	.03108	Air Cartridge
111706003	8/23/2017	SIM	J-131	0	0	.009629	Air Cartridge
111816003	8/29/2017	SIM	J-131	0	0	.01635	Air Cartridge
111910003	9/6/2017	SIM	J-131	0	0	.01159	Air Cartridge
111992003	9/12/2017	SIM	J-131	0	0	.01701	Air Cartridge
112181003	9/19/2017	SIM	J-131	0	0	.02317	Air Cartridge
112326003	9/26/2017	SIM	J-131	0	0	.01303	Air Cartridge
112450003	10/3/2017	SIM	J-131	0	0	.01734	Air Cartridge
112568003	10/10/2017	SIM	J-131	0	0	.01425	Air Cartridge
112689003	10/17/2017	SIM	J-131	0	0	.02103	Air Cartridge
112801003	10/24/2017	SIM	J-131	0	0	.01319	Air Cartridge
112895003	10/31/2017	SIM	J-131	0	0	.01106	Air Cartridge
112996003	11/7/2017	SIM	J-131	0	0	.01026	Air Cartridge
113094003	11/14/2017	SIM	J-131	0	0	.01628	Air Cartridge
113155003	11/21/2017	SIM	J-131	0	0	.009744	Air Cartridge
113215003	11/28/2017	SIM	J-131	0	0	.01259	Air Cartridge
113344003	12/5/2017	SIM	J-131	0	0	.0137	Air Cartridge
113410003	12/12/2017	SIM	J-131	0	0	.01345	Air Cartridge
113538003	12/19/2017	SIM	J-131	0	0	.0215	Air Cartridge
113554003	12/27/2017	SIM	J-131	0	0	.02115	Air Cartridge
107709001	1/4/2017	WAY	J-131	0	0	.01121	Air Cartridge
107878001	1/10/2017	WAY	J-131	0	0	.01366	Air Cartridge
107973001	1/17/2017	WAY	J-131	0	0	.02278	Air Cartridge
108094001	1/24/2017	WAY	J-131	0	0	.01129	Air Cartridge
108205001	1/31/2017	WAY	J-131	0	0	.01092	Air Cartridge
108347001	2/7/2017	WAY	J-131	0	0	.01113	Air Cartridge
108442001	2/14/2017	WAY	J-131	0	0	.01122	Air Cartridge
108542001	2/21/2017	WAY	J-131	0	0	.01287	Air Cartridge
108630001	2/28/2017	WAY	J-131	0	0	.01923	Air Cartridge
108732001	3/7/2017	WAY	J-131	0	0	.01101	Air Cartridge
108838001	3/14/2017	WAY	J-131	0	0	.01967	Air Cartridge
108959001	3/21/2017	WAY	J-131	0	0	.03064	Air Cartridge
109072001	3/28/2017	WAY	J-131	0	0	.01274	Air Cartridge
109224001	4/4/2017	WAY	J-131	0	0	.0213	Air Cartridge
109320001	4/11/2017	WAY	J-131	0	0	.02404	Air Cartridge
109440001	4/18/2017	WAY	J-131	0	0	.02004	Air Cartridge

109560001	4/25/2017	WAY	J-131	0	0	.01841	Air Cartridge
109666001	5/2/2017	WAY	J-131	0	0	.02011	Air Cartridge
109802001	5/9/2017	WAY	J-131	0	0	.01302	Air Cartridge
109927001	5/16/2017	WAY	J-131	0	0	.007182	Air Cartridge
110045001	5/23/2017	WAY	J-131	0	0	.01859	Air Cartridge
110181001	5/31/2017	WAY	J-131	0	0	.01204	Air Cartridge
110285001	6/6/2017	WAY	J-131	0	0	.02104	Air Cartridge
110401001	6/13/2017	WAY	J-131	0	0	.01225	Air Cartridge
110544001	6/20/2017	WAY	J-131	0	0	.01206	Air Cartridge
110670001	6/27/2017	WAY	J-131	0	0	.01277	Air Cartridge
110807001	7/6/2017	WAY	J-131	0	0	.0103	Air Cartridge
110877001	7/11/2017	WAY	J-131	0	0	.03149	Air Cartridge
111048001	7/18/2017	WAY	J-131	0	0	.0132	Air Cartridge
111150001	7/25/2017	WAY	J-131	0	0	.02271	Air Cartridge
111272001	8/1/2017	WAY	J-131	0	0	.009545	Air Cartridge
111400001	8/8/2017	WAY	J-131	0	0	.0192	Air Cartridge
111522001	8/14/2017	WAY	J-131	0	0	.01657	Air Cartridge
111706001	8/23/2017	WAY	J-131	0	0	.01485	Air Cartridge
111816001	8/29/2017	WAY	J-131	0	0	.033	Air Cartridge
111910001	9/6/2017	WAY	J-131	0	0	.01062	Air Cartridge
111992001	9/12/2017	WAY	J-131	0	0	.01927	Air Cartridge
112181001	9/19/2017	WAY	J-131	0	0	.01192	Air Cartridge
112326001	9/26/2017	WAY	J-131	0	0	.01717	Air Cartridge
112450001	10/3/2017	WAY	J-131	0	0	.01298	Air Cartridge
112568001	10/10/2017	WAY	J-131	0	0	.01966	Air Cartridge
112689001	10/17/2017	WAY	J-131	0	0	.02026	Air Cartridge
112801001	10/24/2017	WAY	J-131	0	0	.03029	Air Cartridge
112895001	10/31/2017	WAY	J-131	0	0	.01277	Air Cartridge
112996001	11/7/2017	WAY	J-131	0	0	.01744	Air Cartridge
113094001	11/14/2017	WAY	J-131	0	0	.01226	Air Cartridge
113155001	11/21/2017	WAY	J-131	0	0	.02074	Air Cartridge
113215001	11/28/2017	WAY	J-131	0	0	.01708	Air Cartridge
113344001	12/5/2017	WAY	J-131	0	0	.01597	Air Cartridge
113410001	12/12/2017	WAY	J-131	0	0	.02176	Air Cartridge
113538001	12/19/2017	WAY	J-131	0	0	.01841	Air Cartridge
113554001	12/27/2017	WAY	J-131	0	0	.01026	Air Cartridge
107708004	1/4/2017	DIS	GROSSBETA	.0103	.003678	.01339	Air Filter
107876004	1/10/2017	DIS	GROSSBETA	.02124	.005236	.02563	Air Filter
107971004	1/17/2017	DIS	GROSSBETA	.01383	.004005	.0172	Air Filter
108093004	1/24/2017	DIS	GROSSBETA	.01329	.004197	.01681	Air Filter
108204004	1/31/2017	DIS	GROSSBETA	.02351	.005501	.02813	Air Filter
108337004	2/7/2017	DIS	GROSSBETA	.02381	.005037	.02804	Air Filter
108441004	2/14/2017	DIS	GROSSBETA	.01443	.00411	.01788	Air Filter
108541004	2/21/2017	DIS	GROSSBETA	.02798	.005603	.03268	Air Filter
108629004	2/28/2017	DIS	GROSSBETA	.01543	.004366	.0191	Air Filter
108731004	3/7/2017	DIS	GROSSBETA	.02137	.004904	.02548	Air Filter
108837004	3/14/2017	DIS	GROSSBETA	.01457	.004122	.01803	Air Filter

108956004	3/21/2017	DIS	GROSSBETA	.02214	.005171	.02648	Air Filter
109071004	3/28/2017	DIS	GROSSBETA	.02219	.005293	.02663	Air Filter
109223004	4/4/2017	DIS	GROSSBETA	.01526	.004483	.01902	Air Filter
109319004	4/11/2017	DIS	GROSSBETA	.01748	.01431	.02949	Air Filter
109439004	4/18/2017	DIS	GROSSBETA	.03034	.005988	.03536	Air Filter
109559004	4/25/2017	DIS	GROSSBETA	.0215	.005213	.02588	Air Filter
109665004	5/2/2017	DIS	GROSSBETA	.02098	.005115	.02527	Air Filter
109801004	5/9/2017	DIS	GROSSBETA	.02022	.005074	.02448	Air Filter
109926004	5/16/2017	DIS	GROSSBETA	.03568	.006445	.04109	Air Filter
110044004	5/23/2017	DIS	GROSSBETA	.0195	.004934	.02365	Air Filter
110180004	5/31/2017	DIS	GROSSBETA	.0208	.004668	.02471	Air Filter
110284004	6/6/2017	DIS	GROSSBETA	.01853	.005426	.02308	Air Filter
110400004	6/13/2017	DIS	GROSSBETA	.01763	.004659	.02154	Air Filter
110543004	6/20/2017	DIS	GROSSBETA	.01576	.004616	.01964	Air Filter
110669004	6/27/2017	DIS	GROSSBETA	.01627	.004588	.02012	Air Filter
110806004	7/6/2017	DIS	GROSSBETA	.01844	.004087	.02187	Air Filter
110876004	7/11/2017	DIS	GROSSBETA	.01902	.006159	.02419	Air Filter
111047004	7/18/2017	DIS	GROSSBETA	.009477	.003672	.01256	Air Filter
111149004	7/25/2017	DIS	GROSSBETA	.02289	.005178	.02724	Air Filter
111271004	8/1/2017	DIS	GROSSBETA	.02361	.005274	.02804	Air Filter
111399004	8/8/2017	DIS	GROSSBETA	.01849	.004814	.02253	Air Filter
111521004	8/14/2017	DIS	GROSSBETA	.009427	.004155	.01291	Air Filter
111705004	8/23/2017	DIS	GROSSBETA	.01699	.004523	.02079	Air Filter
111815004	8/29/2017	DIS	GROSSBETA	.03034	.006683	.03595	Air Filter
111909004	9/6/2017	DIS	GROSSBETA	.02243	.00484	.02649	Air Filter
111991004	9/12/2017	DIS	GROSSBETA	.01929	.005372	.0238	Air Filter
112180004	9/19/2017	DIS	GROSSBETA	.03112	.005801	.03599	Air Filter
112325004	9/26/2017	DIS	GROSSBETA	.03779	.006234	.04302	Air Filter
112449004	10/3/2017	DIS	GROSSBETA	.03235	.005708	.03714	Air Filter
112567004	10/10/2017	DIS	GROSSBETA	.01496	.003297	.01773	Air Filter
112688004	10/17/2017	DIS	GROSSBETA	.01412	.00295	.0166	Air Filter
112800004	10/24/2017	DIS	GROSSBETA	.02907	.004096	.03251	Air Filter
112894004	10/31/2017	DIS	GROSSBETA	.02498	.003878	.02823	Air Filter
112995004	11/7/2017	DIS	GROSSBETA	.03514	.004307	.03875	Air Filter
113093004	11/14/2017	DIS	GROSSBETA	.02868	.004133	.03215	Air Filter
113154004	11/21/2017	DIS	GROSSBETA	.043	.004945	.04715	Air Filter
113214004	11/28/2017	DIS	GROSSBETA	.04213	.004727	.0461	Air Filter
113343004	12/5/2017	DIS	GROSSBETA	.05487	.005367	.05937	Air Filter
113409004	12/12/2017	DIS	GROSSBETA	.03301	.00431	.03663	Air Filter
113537004	12/19/2017	DIS	GROSSBETA	.04028	.0046	.04414	Air Filter
113553004	12/27/2017	DIS	GROSSBETA	.02841	.003779	.03158	Air Filter
107708002	1/4/2017	GIR	GROSSBETA	.01078	.003682	.01387	Air Filter
107876002	1/10/2017	GIR	GROSSBETA	.02173	.005162	.02606	Air Filter
107971002	1/17/2017	GIR	GROSSBETA	.009778	.003406	.01264	Air Filter
108093002	1/24/2017	GIR	GROSSBETA	.01139	.003785	.01457	Air Filter
108204002	1/31/2017	GIR	GROSSBETA	.01588	.004666	.01979	Air Filter
108337002	2/7/2017	GIR	GROSSBETA	.01887	.004445	.0226	Air Filter

108441002	2/14/2017	GIR	GROSSBETA	.01775	.004362	.02141	Air Filter
108541002	2/21/2017	GIR	GROSSBETA	.02774	.005471	.03233	Air Filter
108629002	2/28/2017	GIR	GROSSBETA	.01095	.003689	.01405	Air Filter
108731002	3/7/2017	GIR	GROSSBETA	.01775	.004446	.02149	Air Filter
108837002	3/14/2017	GIR	GROSSBETA	.01681	.004269	.02039	Air Filter
108956002	3/21/2017	GIR	GROSSBETA	.02192	.005119	.02621	Air Filter
109071002	3/28/2017	GIR	GROSSBETA	.01915	.004854	.02322	Air Filter
109223002	4/4/2017	GIR	GROSSBETA	.01471	.004467	.01846	Air Filter
109319002	4/11/2017	GIR	GROSSBETA	.01511	.004361	.01877	Air Filter
109439002	4/18/2017	GIR	GROSSBETA	.02995	.005941	.03494	Air Filter
109559002	4/25/2017	GIR	GROSSBETA	.01767	.00464	.02156	Air Filter
109665002	5/2/2017	GIR	GROSSBETA	.01994	.004975	.02411	Air Filter
109801002	5/9/2017	GIR	GROSSBETA	.01716	.004605	.02102	Air Filter
109926002	5/16/2017	GIR	GROSSBETA	.0325	.006104	.03762	Air Filter
110044002	5/23/2017	GIR	GROSSBETA	.02542	.005397	.02995	Air Filter
110180002	5/31/2017	GIR	GROSSBETA	.01655	.004161	.02004	Air Filter
110284002	6/6/2017	GIR	GROSSBETA	.01588	.005032	.0201	Air Filter
110400002	6/13/2017	GIR	GROSSBETA	.02005	.004782	.02406	Air Filter
110543002	6/20/2017	GIR	GROSSBETA	.01656	.004612	.02043	Air Filter
110669002	6/27/2017	GIR	GROSSBETA	.01351	.004199	.01704	Air Filter
110806002	7/6/2017	GIR	GROSSBETA	.02169	.004322	.02532	Air Filter
110876002	7/11/2017	GIR	GROSSBETA	.0188	.006086	.02391	Air Filter
111047002	7/18/2017	GIR	GROSSBETA	.005928	.003081	.008514	Air Filter
111149002	7/25/2017	GIR	GROSSBETA	.0249	.005298	.02935	Air Filter
111271002	8/1/2017	GIR	GROSSBETA	.02453	.00519	.02889	Air Filter
111399002	8/8/2017	GIR	GROSSBETA	.012	.004043	.0154	Air Filter
111521002	8/14/2017	GIR	GROSSBETA	.01217	.004384	.01585	Air Filter
111705002	8/23/2017	GIR	GROSSBETA	.01763	.004475	.02139	Air Filter
111815002	8/29/2017	GIR	GROSSBETA	.02036	.005528	.025	Air Filter
111909002	9/6/2017	GIR	GROSSBETA	.02204	.004756	.02603	Air Filter
111991002	9/12/2017	GIR	GROSSBETA	.0211	.005424	.02565	Air Filter
112180002	9/19/2017	GIR	GROSSBETA	.02763	.005449	.0322	Air Filter
112325002	9/26/2017	GIR	GROSSBETA	.03221	.005638	.03694	Air Filter
112449002	10/3/2017	GIR	GROSSBETA	.02612	.00523	.03051	Air Filter
112567002	10/10/2017	GIR	GROSSBETA	.0165	.003264	.01924	Air Filter
112688002	10/17/2017	GIR	GROSSBETA	.009491	.002592	.01167	Air Filter
112800002	10/24/2017	GIR	GROSSBETA	.02626	.00388	.02952	Air Filter
112894002	10/31/2017	GIR	GROSSBETA	.02663	.003958	.02995	Air Filter
112995002	11/7/2017	GIR	GROSSBETA	.03708	.004342	.04072	Air Filter
113093002	11/14/2017	GIR	GROSSBETA	.02572	.003839	.02895	Air Filter
113154002	11/21/2017	GIR	GROSSBETA	.03356	.004413	.03726	Air Filter
113214002	11/28/2017	GIR	GROSSBETA	.0384	.004485	.04216	Air Filter
113343002	12/5/2017	GIR	GROSSBETA	.04861	.00502	.05283	Air Filter
113409002	12/12/2017	GIR	GROSSBETA	.03507	.004374	.03874	Air Filter
113537002	12/19/2017	GIR	GROSSBETA	.03547	.004256	.03904	Air Filter
113553002	12/27/2017	GIR	GROSSBETA	.02629	.003629	.02934	Air Filter
107708007	1/4/2017	HAN	GROSSBETA	.01385	.003957	.01717	Air Filter

107876007	1/10/2017	HAN	GROSSBETA	.02195	.005178	.0263	Air Filter
107971007	1/17/2017	HAN	GROSSBETA	.01224	.0037	.01534	Air Filter
108093007	1/24/2017	HAN	GROSSBETA	.01091	.003725	.01403	Air Filter
108204007	1/31/2017	HAN	GROSSBETA	.01833	.004829	.02239	Air Filter
108337007	2/7/2017	HAN	GROSSBETA	.02415	.004917	.02828	Air Filter
108441007	2/14/2017	HAN	GROSSBETA	.01769	.004346	.02134	Air Filter
108541007	2/21/2017	HAN	GROSSBETA	.01915	.004602	.02301	Air Filter
108629007	2/28/2017	HAN	GROSSBETA	.02181	.004934	.02595	Air Filter
108731007	3/7/2017	HAN	GROSSBETA	.02546	.005107	.02975	Air Filter
108837007	3/14/2017	HAN	GROSSBETA	.01438	.004068	.0178	Air Filter
108956007	3/21/2017	HAN	GROSSBETA	.02767	.005457	.03225	Air Filter
109071007	3/28/2017	HAN	GROSSBETA	.02598	.00543	.03054	Air Filter
109223007	4/4/2017	HAN	GROSSBETA	.02277	.005015	.02697	Air Filter
109319007	4/11/2017	HAN	GROSSBETA	.01929	.004711	.02324	Air Filter
109439007	4/18/2017	HAN	GROSSBETA	.02729	.005498	.03191	Air Filter
109559007	4/25/2017	HAN	GROSSBETA	.01664	.004487	.0204	Air Filter
109665007	5/2/2017	HAN	GROSSBETA	.01934	.004715	.02329	Air Filter
109801007	5/9/2017	HAN	GROSSBETA	.01842	.004697	.02236	Air Filter
109926007	5/16/2017	HAN	GROSSBETA	.02631	.00537	.03082	Air Filter
110044007	5/23/2017	HAN	GROSSBETA	.02872	.005577	.0334	Air Filter
110180007	5/31/2017	HAN	GROSSBETA	.01978	.004358	.02344	Air Filter
110284007	6/6/2017	HAN	GROSSBETA	.02101	.005447	.02558	Air Filter
110400007	6/13/2017	HAN	GROSSBETA	.01662	.004433	.02034	Air Filter
110543007	6/20/2017	HAN	GROSSBETA	.01686	.004526	.02066	Air Filter
110669007	6/27/2017	HAN	GROSSBETA	.01365	.004097	.01708	Air Filter
110806007	7/6/2017	HAN	GROSSBETA	.01952	.003992	.02287	Air Filter
110876007	7/11/2017	HAN	GROSSBETA	.01393	.005215	.01831	Air Filter
111047007	7/18/2017	HAN	GROSSBETA	.009432	.003474	.01235	Air Filter
111149007	7/25/2017	HAN	GROSSBETA	.02606	.005249	.03046	Air Filter
111271007	8/1/2017	HAN	GROSSBETA	.02675	.005306	.0312	Air Filter
111399007	8/8/2017	HAN	GROSSBETA	.01791	.004514	.0217	Air Filter
111521007	8/14/2017	HAN	GROSSBETA	.01498	.004656	.01889	Air Filter
111705007	8/23/2017	HAN	GROSSBETA	.02481	.004942	.02896	Air Filter
111815007	8/29/2017	HAN	GROSSBETA	.03166	.006509	.03713	Air Filter
111909007	9/6/2017	HAN	GROSSBETA	.01906	.004322	.02269	Air Filter
111991007	9/12/2017	HAN	GROSSBETA	.02439	.00627	.02965	Air Filter
112180007	9/19/2017	HAN	GROSSBETA	.03747	.006776	.04315	Air Filter
112325007	9/26/2017	HAN	GROSSBETA	.03289	.005563	.03755	Air Filter
112449007	10/3/2017	HAN	GROSSBETA	.03038	.005276	.0348	Air Filter
112567007	10/10/2017	HAN	GROSSBETA	.01778	.003292	.02054	Air Filter
112688007	10/17/2017	HAN	GROSSBETA	.01263	.00268	.01488	Air Filter
112800007	10/24/2017	HAN	GROSSBETA	.02696	.00377	.03013	Air Filter
112894007	10/31/2017	HAN	GROSSBETA	.02303	.003493	.02597	Air Filter
112995007	11/7/2017	HAN	GROSSBETA	.03449	.004053	.03789	Air Filter
113093007	11/14/2017	HAN	GROSSBETA	.03029	.004005	.03365	Air Filter
113154007	11/21/2017	HAN	GROSSBETA	.03615	.004366	.03982	Air Filter
113214007	11/28/2017	HAN	GROSSBETA	.0393	.004268	.04288	Air Filter

113343007	12/5/2017	HAN	GROSSBETA	.04702	.004785	.05104	Air Filter
113409007	12/12/2017	HAN	GROSSBETA	.02673	.003642	.02978	Air Filter
113537007	12/19/2017	HAN	GROSSBETA	.04199	.004456	.04573	Air Filter
113553007	12/27/2017	HAN	GROSSBETA	.02913	.003893	.0324	Air Filter
107708005	1/4/2017	MET	GROSSBETA	.01298	.003786	.01616	Air Filter
107876005	1/10/2017	MET	GROSSBETA	.02442	.005392	.02895	Air Filter
107971005	1/17/2017	MET	GROSSBETA	.01109	.003607	.01412	Air Filter
108093005	1/24/2017	MET	GROSSBETA	.008601	.003393	.01145	Air Filter
108204005	1/31/2017	MET	GROSSBETA	.01759	.004838	.02166	Air Filter
108337005	2/7/2017	MET	GROSSBETA	.02809	.005312	.03255	Air Filter
108441005	2/14/2017	MET	GROSSBETA	.02046	.004591	.02431	Air Filter
108541005	2/21/2017	MET	GROSSBETA	.02438	.005182	.02873	Air Filter
108629005	2/28/2017	MET	GROSSBETA	.01778	.004553	.0216	Air Filter
108731005	3/7/2017	MET	GROSSBETA	.02032	.004695	.02426	Air Filter
108837005	3/14/2017	MET	GROSSBETA	.0191	.004467	.02285	Air Filter
108956005	3/21/2017	MET	GROSSBETA	.02853	.005572	.03321	Air Filter
109071005	3/28/2017	MET	GROSSBETA	.02593	.00548	.03053	Air Filter
109223005	4/4/2017	MET	GROSSBETA	.01657	.004459	.02031	Air Filter
109319005	4/11/2017	MET	GROSSBETA	.01997	.004807	.02401	Air Filter
109439005	4/18/2017	MET	GROSSBETA	.02878	.00568	.03355	Air Filter
109559005	4/25/2017	MET	GROSSBETA	.01515	.004329	.01879	Air Filter
109665005	5/2/2017	MET	GROSSBETA	.01806	.004654	.02197	Air Filter
109801005	5/9/2017	MET	GROSSBETA	.02207	.005078	.02634	Air Filter
109926005	5/16/2017	MET	GROSSBETA	.02682	.005473	.03141	Air Filter
110044005	5/23/2017	MET	GROSSBETA	.02463	.0052	.029	Air Filter
110180005	5/31/2017	MET	GROSSBETA	.02037	.004433	.02409	Air Filter
110284005	6/6/2017	MET	GROSSBETA	.01956	.005347	.02405	Air Filter
110400005	6/13/2017	MET	GROSSBETA	.01952	.004724	.02348	Air Filter
110543005	6/20/2017	MET	GROSSBETA	.02187	.005031	.02609	Air Filter
110669005	6/27/2017	MET	GROSSBETA	.01265	.004025	.01602	Air Filter
110806005	7/6/2017	MET	GROSSBETA	.0193	.004032	.02268	Air Filter
110876005	7/11/2017	MET	GROSSBETA	.02197	.006214	.02718	Air Filter
111047005	7/18/2017	MET	GROSSBETA	.009187	.003498	.01212	Air Filter
111149005	7/25/2017	MET	GROSSBETA	.02092	.004827	.02497	Air Filter
111271005	8/1/2017	MET	GROSSBETA	.01934	.00469	.02328	Air Filter
111399005	8/8/2017	MET	GROSSBETA	.01917	.004719	.02313	Air Filter
111521005	8/14/2017	MET	GROSSBETA	.01091	.004196	.01443	Air Filter
111705005	8/23/2017	MET	GROSSBETA	.01524	.004197	.01877	Air Filter
111815005	8/29/2017	MET	GROSSBETA	.02994	.006363	.03528	Air Filter
111909005	9/6/2017	MET	GROSSBETA	.02826	.005169	.03259	Air Filter
111991005	9/12/2017	MET	GROSSBETA	.02268	.00548	.02728	Air Filter
112180005	9/19/2017	MET	GROSSBETA	.02864	.005411	.03318	Air Filter
112325005	9/26/2017	MET	GROSSBETA	.03751	.005943	.0425	Air Filter
112449005	10/3/2017	MET	GROSSBETA	.02962	.005312	.03408	Air Filter
112567005	10/10/2017	MET	GROSSBETA	.01629	.003268	.01903	Air Filter
112688005	10/17/2017	MET	GROSSBETA	.01187	.002692	.01413	Air Filter
112800005	10/24/2017	MET	GROSSBETA	.02766	.00383	.03087	Air Filter

112894005	10/31/2017	MET	GROSSBETA	.02102	.003456	.02392	Air Filter
112995005	11/7/2017	MET	GROSSBETA	.03243	.00403	.03581	Air Filter
113093005	11/14/2017	MET	GROSSBETA	.0277	.003883	.03096	Air Filter
113154005	11/21/2017	MET	GROSSBETA	.03178	.004235	.03534	Air Filter
113214005	11/28/2017	MET	GROSSBETA	.04011	.004486	.04388	Air Filter
113343005	12/5/2017	MET	GROSSBETA	.05269	.00511	.05698	Air Filter
113409005	12/12/2017	MET	GROSSBETA	.03063	.003982	.03397	Air Filter
113537005	12/19/2017	MET	GROSSBETA	.0375	.004319	.04113	Air Filter
113553005	12/27/2017	MET	GROSSBETA	.02323	.00332	.02602	Air Filter
107708006	1/4/2017	RRD	GROSSBETA	.0124	.003915	.01568	Air Filter
107876006	1/10/2017	RRD	GROSSBETA	.02405	.005482	.02865	Air Filter
107971006	1/17/2017	RRD	GROSSBETA	.01529	.004173	.0188	Air Filter
108093006	1/24/2017	RRD	GROSSBETA	.01652	.004581	.02036	Air Filter
108204006	1/31/2017	RRD	GROSSBETA	.02043	.005212	.02481	Air Filter
108337006	2/7/2017	RRD	GROSSBETA	.03137	.005677	.03614	Air Filter
108441006	2/14/2017	RRD	GROSSBETA	.0145	.00409	.01794	Air Filter
108541006	2/21/2017	RRD	GROSSBETA	.02048	.004885	.02458	Air Filter
108629006	2/28/2017	RRD	GROSSBETA	.01545	.004413	.01915	Air Filter
108731006	3/7/2017	RRD	GROSSBETA	.0217	.004915	.02583	Air Filter
108837006	3/14/2017	RRD	GROSSBETA	.01989	.004788	.02391	Air Filter
108956006	3/21/2017	RRD	GROSSBETA	.02025	.004937	.02439	Air Filter
109071006	3/28/2017	RRD	GROSSBETA	.02608	.005642	.03082	Air Filter
109223006	4/4/2017	RRD	GROSSBETA	.0205	.004961	.02466	Air Filter
109319006	4/11/2017	RRD	GROSSBETA	.01382	.004261	.0174	Air Filter
109439006	4/18/2017	RRD	GROSSBETA	.02414	.005391	.02867	Air Filter
109559006	4/25/2017	RRD	GROSSBETA	.0143	.00441	.01801	Air Filter
109665006	5/2/2017	RRD	GROSSBETA	.01941	.00488	.0235	Air Filter
109801006	5/9/2017	RRD	GROSSBETA	.02048	.005101	.02476	Air Filter
109926006	5/16/2017	RRD	GROSSBETA	.03224	.006055	.03732	Air Filter
110044006	5/23/2017	RRD	GROSSBETA	.01776	.004724	.02172	Air Filter
110180006	5/31/2017	RRD	GROSSBETA	.01653	.00419	.02004	Air Filter
110284006	6/6/2017	RRD	GROSSBETA	.02281	.005816	.02769	Air Filter
110400006	6/13/2017	RRD	GROSSBETA	.01865	.004766	.02265	Air Filter
110543006	6/20/2017	RRD	GROSSBETA	.01581	.004536	.01962	Air Filter
110669006	6/27/2017	RRD	GROSSBETA	.01665	.004607	.02052	Air Filter
110806006	7/6/2017	RRD	GROSSBETA	.02014	.004186	.02366	Air Filter
110876006	7/11/2017	RRD	GROSSBETA	.01847	.005979	.02349	Air Filter
111047006	7/18/2017	RRD	GROSSBETA	.01159	.003905	.01487	Air Filter
111149006	7/25/2017	RRD	GROSSBETA	.02368	.005222	.02806	Air Filter
111271006	8/1/2017	RRD	GROSSBETA	.02634	.005449	.03091	Air Filter
111399006	8/8/2017	RRD	GROSSBETA	.01794	.004672	.02186	Air Filter
111521006	8/14/2017	RRD	GROSSBETA	.01005	.004163	.01355	Air Filter
111705006	8/23/2017	RRD	GROSSBETA	.01957	.004656	.02348	Air Filter
111815006	8/29/2017	RRD	GROSSBETA	.02811	.006391	.03347	Air Filter
111909006	9/6/2017	RRD	GROSSBETA	.02188	.004694	.02582	Air Filter
111991006	9/12/2017	RRD	GROSSBETA	.02309	.005663	.02785	Air Filter
112180006	9/19/2017	RRD	GROSSBETA	.02935	.005571	.03403	Air Filter

112325006	9/26/2017	RRD	GROSSBETA	.04032	.006326	.04563	Air Filter
112449006	10/3/2017	RRD	GROSSBETA	.03465	.005798	.03952	Air Filter
112567006	10/10/2017	RRD	GROSSBETA	.01516	.00325	.01789	Air Filter
112688006	10/17/2017	RRD	GROSSBETA	.01644	.003153	.01908	Air Filter
112800006	10/24/2017	RRD	GROSSBETA	.02754	.004014	.03091	Air Filter
112894006	10/31/2017	RRD	GROSSBETA	.0235	.00374	.02664	Air Filter
112995006	11/7/2017	RRD	GROSSBETA	.03127	.0041	.03471	Air Filter
113093006	11/14/2017	RRD	GROSSBETA	.03058	.004174	.03408	Air Filter
113154006	11/21/2017	RRD	GROSSBETA	.03805	.004708	.042	Air Filter
113214006	11/28/2017	RRD	GROSSBETA	.04156	.004701	.04551	Air Filter
113343006	12/5/2017	RRD	GROSSBETA	.05061	.005184	.05496	Air Filter
113409006	12/12/2017	RRD	GROSSBETA	.03374	.004453	.03747	Air Filter
113537006	12/19/2017	RRD	GROSSBETA	.03892	.004529	.04272	Air Filter
113553006	12/27/2017	RRD	GROSSBETA	.02552	.003619	.02856	Air Filter
107708003	1/4/2017	SIM	GROSSBETA	.009375	.00357	.01237	Air Filter
107876003	1/10/2017	SIM	GROSSBETA	.01949	.005176	.02384	Air Filter
107971003	1/17/2017	SIM	GROSSBETA	.01308	.003954	.01639	Air Filter
108093003	1/24/2017	SIM	GROSSBETA	.01538	.004487	.01915	Air Filter
108204003	1/31/2017	SIM	GROSSBETA	.01588	.004812	.01992	Air Filter
108337003	2/7/2017	SIM	GROSSBETA	.03053	.005644	.03527	Air Filter
108441003	2/14/2017	SIM	GROSSBETA	.02146	.004979	.02564	Air Filter
108541003	2/21/2017	SIM	GROSSBETA	.01858	.004748	.02256	Air Filter
108629003	2/28/2017	SIM	GROSSBETA	.01909	.004809	.02312	Air Filter
108731003	3/7/2017	SIM	GROSSBETA	.02868	.005582	.03337	Air Filter
108837003	3/14/2017	SIM	GROSSBETA	.01688	.004472	.02063	Air Filter
108956003	3/21/2017	SIM	GROSSBETA	.02536	.00562	.03007	Air Filter
109071003	3/28/2017	SIM	GROSSBETA	.02384	.005647	.02858	Air Filter
109223003	4/4/2017	SIM	GROSSBETA	.02135	.005168	.02569	Air Filter
109319003	4/11/2017	SIM	GROSSBETA	.02036	.005131	.02467	Air Filter
109439003	4/18/2017	SIM	GROSSBETA	.02572	.005744	.03054	Air Filter
109559003	4/25/2017	SIM	GROSSBETA	.01752	.004956	.02168	Air Filter
109665003	5/2/2017	SIM	GROSSBETA	.0147	.004567	.01853	Air Filter
109801003	5/9/2017	SIM	GROSSBETA	.01631	.004776	.02032	Air Filter
109926003	5/16/2017	SIM	GROSSBETA	.02986	.006093	.03497	Air Filter
110044003	5/23/2017	SIM	GROSSBETA	.02158	.005291	.02602	Air Filter
110180003	5/31/2017	SIM	GROSSBETA	.01866	.004585	.02251	Air Filter
110284003	6/6/2017	SIM	GROSSBETA	.02566	.00634	.03098	Air Filter
110400003	6/13/2017	SIM	GROSSBETA	.01434	.004509	.01812	Air Filter
110543003	6/20/2017	SIM	GROSSBETA	.01264	.004394	.01633	Air Filter
110669003	6/27/2017	SIM	GROSSBETA	.01387	.004469	.01762	Air Filter
110806003	7/6/2017	SIM	GROSSBETA	.02091	.00442	.02462	Air Filter
110876003	7/11/2017	SIM	GROSSBETA	.01711	.006015	.02215	Air Filter
111047003	7/18/2017	SIM	GROSSBETA	.01183	.004099	.01527	Air Filter
111149003	7/25/2017	SIM	GROSSBETA	.01528	.004554	.01911	Air Filter
111271003	8/1/2017	SIM	GROSSBETA	.0233	.00534	.02778	Air Filter
111399003	8/8/2017	SIM	GROSSBETA	.01366	.004421	.01737	Air Filter
111521003	8/14/2017	SIM	GROSSBETA	.0137	.004791	.01772	Air Filter

111705003	8/23/2017	SIM	GROSSBETA	.01673	.004647	.02063	Air Filter
111815003	8/29/2017	SIM	GROSSBETA	.02919	.00668	.03479	Air Filter
111909003	9/6/2017	SIM	GROSSBETA	.02465	.00517	.02899	Air Filter
111991003	9/12/2017	SIM	GROSSBETA	.02538	.006088	.03049	Air Filter
112180003	9/19/2017	SIM	GROSSBETA	.0341	.006219	.03932	Air Filter
112325003	9/26/2017	SIM	GROSSBETA	.03916	.006437	.04456	Air Filter
112449003	10/3/2017	SIM	GROSSBETA	.0289	.005512	.03353	Air Filter
112567003	10/10/2017	SIM	GROSSBETA	.01298	.003268	.01572	Air Filter
112688003	10/17/2017	SIM	GROSSBETA	.01468	.003115	.0173	Air Filter
112800003	10/24/2017	SIM	GROSSBETA	.02886	.004162	.03236	Air Filter
112894003	10/31/2017	SIM	GROSSBETA	.02455	.003944	.02786	Air Filter
112995003	11/7/2017	SIM	GROSSBETA	.03412	.004388	.0378	Air Filter
113093003	11/14/2017	SIM	GROSSBETA	.02859	.004198	.03212	Air Filter
113154003	11/21/2017	SIM	GROSSBETA	.04022	.004977	.04439	Air Filter
113214003	11/28/2017	SIM	GROSSBETA	.03976	.004769	.04376	Air Filter
113343003	12/5/2017	SIM	GROSSBETA	.0492	.00528	.05363	Air Filter
113409003	12/12/2017	SIM	GROSSBETA	.0316	.004358	.03525	Air Filter
113537003	12/19/2017	SIM	GROSSBETA	.04096	.004775	.04497	Air Filter
113553003	12/27/2017	SIM	GROSSBETA	.02642	.003814	.02962	Air Filter
107708001	1/4/2017	WAY	GROSSBETA	.01377	.004151	.01726	Air Filter
107876001	1/10/2017	WAY	GROSSBETA	.02255	.005073	.0268	Air Filter
107971001	1/17/2017	WAY	GROSSBETA	.01105	.003504	.01399	Air Filter
108093001	1/24/2017	WAY	GROSSBETA	.01455	.004115	.018	Air Filter
108204001	1/31/2017	WAY	GROSSBETA	.01806	.004718	.02202	Air Filter
108337001	2/7/2017	WAY	GROSSBETA	.02187	.004626	.02575	Air Filter
108441001	2/14/2017	WAY	GROSSBETA	.01856	.004396	.02225	Air Filter
108541001	2/21/2017	WAY	GROSSBETA	.0205	.004661	.02441	Air Filter
108629001	2/28/2017	WAY	GROSSBETA	.01406	.004016	.01743	Air Filter
108731001	3/7/2017	WAY	GROSSBETA	.02162	.004687	.02555	Air Filter
108837001	3/14/2017	WAY	GROSSBETA	.01087	.003518	.01382	Air Filter
108956001	3/21/2017	WAY	GROSSBETA	.02457	.005314	.02903	Air Filter
109071001	3/28/2017	WAY	GROSSBETA	.02697	.005637	.0317	Air Filter
109223001	4/4/2017	WAY	GROSSBETA	.02148	.004948	.02563	Air Filter
109319001	4/11/2017	WAY	GROSSBETA	.01505	.004344	.0187	Air Filter
109439001	4/18/2017	WAY	GROSSBETA	.02617	.005535	.03081	Air Filter
109559001	4/25/2017	WAY	GROSSBETA	.01466	.004368	.01832	Air Filter
109665001	5/2/2017	WAY	GROSSBETA	.01595	.004498	.01972	Air Filter
109801001	5/9/2017	WAY	GROSSBETA	.0139	.004302	.01751	Air Filter
109926001	5/16/2017	WAY	GROSSBETA	.03007	.005864	.03499	Air Filter
110044001	5/23/2017	WAY	GROSSBETA	.0206	.00494	.02474	Air Filter
110180001	5/31/2017	WAY	GROSSBETA	.022	.004731	.02597	Air Filter
110284001	6/6/2017	WAY	GROSSBETA	.02075	.005472	.02534	Air Filter
110400001	6/13/2017	WAY	GROSSBETA	.01654	.004532	.02034	Air Filter
110543001	6/20/2017	WAY	GROSSBETA	.01748	.004569	.02131	Air Filter
110669001	6/27/2017	WAY	GROSSBETA	.01549	.004413	.01919	Air Filter
110806001	7/6/2017	WAY	GROSSBETA	.02072	.004282	.02431	Air Filter
110876001	7/11/2017	WAY	GROSSBETA	.01908	.005814	.02395	Air Filter

111047001	7/18/2017	WAY	GROSSBETA	.01238	.003862	.01562	Air Filter
111149001	7/25/2017	WAY	GROSSBETA	.02079	.004864	.02488	Air Filter
111271001	8/1/2017	WAY	GROSSBETA	.02106	.004859	.02514	Air Filter
111399001	8/8/2017	WAY	GROSSBETA	.02071	.004984	.02489	Air Filter
111521001	8/14/2017	WAY	GROSSBETA	.01297	.00429	.01657	Air Filter
111705001	8/23/2017	WAY	GROSSBETA	.0217	.004814	.02574	Air Filter
111815001	8/29/2017	WAY	GROSSBETA	.02569	.005959	.03069	Air Filter
111909001	9/6/2017	WAY	GROSSBETA	.02101	.004615	.02488	Air Filter
111991001	9/12/2017	WAY	GROSSBETA	.02003	.005329	.0245	Air Filter
112180001	9/19/2017	WAY	GROSSBETA	.03464	.005994	.03967	Air Filter
112325001	9/26/2017	WAY	GROSSBETA	.03643	.006031	.04149	Air Filter
112449001	10/3/2017	WAY	GROSSBETA	.02869	.005348	.03318	Air Filter
112567001	10/10/2017	WAY	GROSSBETA	.0164	.00339	.01925	Air Filter
112688001	10/17/2017	WAY	GROSSBETA	.01623	.002985	.01874	Air Filter
112800001	10/24/2017	WAY	GROSSBETA	.0285	.003985	.03184	Air Filter
112894001	10/31/2017	WAY	GROSSBETA	.02177	.003641	.02483	Air Filter
112995001	11/7/2017	WAY	GROSSBETA	.03421	.004186	.03773	Air Filter
113093001	11/14/2017	WAY	GROSSBETA	.02614	.003923	.02943	Air Filter
113154001	11/21/2017	WAY	GROSSBETA	.03432	.004447	.03805	Air Filter
113214001	11/28/2017	WAY	GROSSBETA	.04056	.004595	.04441	Air Filter
113343001	12/5/2017	WAY	GROSSBETA	.04731	.004954	.05146	Air Filter
113409001	12/12/2017	WAY	GROSSBETA	.03504	.004303	.03865	Air Filter
113537001	12/19/2017	WAY	GROSSBETA	.03666	.004342	.0403	Air Filter
113553001	12/27/2017	WAY	GROSSBETA	.02564	.0036	.02867	Air Filter
109220004	3/28/2017	DIS	BE-7	.09785	.02169	0	Air Filter Composite
109220004	3/28/2017	DIS	CS-134	0	0	.0008265	Air Filter Composite
109220004	3/28/2017	DIS	CS-137	0	0	.001021	Air Filter Composite
109220004	3/28/2017	DIS	J-131	0	0	.001538	Air Filter Composite
110818004	6/27/2017	DIS	BE-7	.1033	.02944	0	Air Filter Composite
110818004	6/27/2017	DIS	CS-134	0	0	.001302	Air Filter Composite
110818004	6/27/2017	DIS	CS-137	0	0	.001621	Air Filter Composite
110818004	6/27/2017	DIS	J-131	0	0	.006014	Air Filter Composite
112484004	9/26/2017	DIS	BE-7	.09545	.01713	0	Air Filter Composite
112484004	9/26/2017	DIS	CS-134	0	0	.000991	Air Filter Composite
112484004	9/26/2017	DIS	CS-137	0	0	.0005942	Air Filter Composite
112484004	9/26/2017	DIS	J-131	0	0	.001411	Air Filter Composite
113800004	12/27/2017	DIS	BE-7	.09641	.02416	0	Air Filter Composite
113800004	12/27/2017	DIS	CS-134	0	0	.001136	Air Filter Composite
113800004	12/27/2017	DIS	CS-137	0	0	.001415	Air Filter Composite
113800004	12/27/2017	DIS	J-131	0	0	.006873	Air Filter Composite
109220002	3/28/2017	GIR	BE-7	.08918	.02075	0	Air Filter Composite
109220002	3/28/2017	GIR	CS-134	0	0	.0007933	Air Filter Composite
109220002	3/28/2017	GIR	CS-137	0	0	.00098	Air Filter Composite
109220002	3/28/2017	GIR	J-131	0	0	.003326	Air Filter Composite
110818002	6/27/2017	GIR	BE-7	.0843	.02064	0	Air Filter Composite
110818002	6/27/2017	GIR	CS-134	0	0	.00157	Air Filter Composite
110818002	6/27/2017	GIR	CS-137	0	0	.002176	Air Filter Composite

110818002	6/27/2017	GIR	J-131	0	0	.004573	Air Filter Composite
112484002	9/26/2017	GIR	BE-7	.08897	.0256	0	Air Filter Composite
112484002	9/26/2017	GIR	CS-134	0	0	.002429	Air Filter Composite
112484002	9/26/2017	GIR	CS-137	0	0	.00149	Air Filter Composite
112484002	9/26/2017	GIR	J-131	0	0	.004392	Air Filter Composite
113800002	12/27/2017	GIR	BE-7	.09507	.02204	0	Air Filter Composite
113800002	12/27/2017	GIR	CS-134	0	0	.0007704	Air Filter Composite
113800002	12/27/2017	GIR	CS-137	0	0	.001386	Air Filter Composite
113800002	12/27/2017	GIR	J-131	0	0	.004816	Air Filter Composite
109220007	3/28/2017	HAN	BE-7	.09937	.02316	0	Air Filter Composite
109220007	3/28/2017	HAN	CS-134	0	0	.001068	Air Filter Composite
109220007	3/28/2017	HAN	CS-137	0	0	.001335	Air Filter Composite
109220007	3/28/2017	HAN	J-131	0	0	.001834	Air Filter Composite
110818007	6/27/2017	HAN	BE-7	.09029	.02384	0	Air Filter Composite
110818007	6/27/2017	HAN	CS-134	0	0	.002447	Air Filter Composite
110818007	6/27/2017	HAN	CS-137	0	0	.001414	Air Filter Composite
110818007	6/27/2017	HAN	J-131	0	0	.004587	Air Filter Composite
112484007	9/26/2017	HAN	BE-7	.09704	.01695	0	Air Filter Composite
112484007	9/26/2017	HAN	CS-134	0	0	.001437	Air Filter Composite
112484007	9/26/2017	HAN	CS-137	0	0	.001149	Air Filter Composite
112484007	9/26/2017	HAN	J-131	0	0	.001973	Air Filter Composite
113800007	12/27/2017	HAN	BE-7	.08568	.02176	0	Air Filter Composite
113800007	12/27/2017	HAN	CS-134	0	0	.00152	Air Filter Composite
113800007	12/27/2017	HAN	CS-137	0	0	.001295	Air Filter Composite
113800007	12/27/2017	HAN	J-131	0	0	.006612	Air Filter Composite
109220005	3/28/2017	MET	BE-7	.1002	.02521	0	Air Filter Composite
109220005	3/28/2017	MET	CS-134	0	0	.00175	Air Filter Composite
109220005	3/28/2017	MET	CS-137	0	0	.001341	Air Filter Composite
109220005	3/28/2017	MET	J-131	0	0	.005027	Air Filter Composite
110818005	6/27/2017	MET	BE-7	.1012	.02159	0	Air Filter Composite
110818005	6/27/2017	MET	CS-134	0	0	.0007918	Air Filter Composite
110818005	6/27/2017	MET	CS-137	0	0	.001231	Air Filter Composite
110818005	6/27/2017	MET	J-131	0	0	.003191	Air Filter Composite
112484005	9/26/2017	MET	BE-7	.08242	.02174	0	Air Filter Composite
112484005	9/26/2017	MET	CS-134	0	0	.001155	Air Filter Composite
112484005	9/26/2017	MET	CS-137	0	0	.001824	Air Filter Composite
112484005	9/26/2017	MET	J-131	0	0	.001979	Air Filter Composite
113800005	12/27/2017	MET	BE-7	.08029	.01972	0	Air Filter Composite
113800005	12/27/2017	MET	CS-134	0	0	.001415	Air Filter Composite
113800005	12/27/2017	MET	CS-137	0	0	.001483	Air Filter Composite
113800005	12/27/2017	MET	J-131	0	0	.002859	Air Filter Composite
109220006	3/28/2017	RRD	BE-7	.1062	.02514	0	Air Filter Composite
109220006	3/28/2017	RRD	CS-134	0	0	.0008259	Air Filter Composite
109220006	3/28/2017	RRD	CS-137	0	0	.001818	Air Filter Composite
109220006	3/28/2017	RRD	J-131	0	0	.00332	Air Filter Composite
110818006	6/27/2017	RRD	BE-7	.1079	.0186	0	Air Filter Composite
110818006	6/27/2017	RRD	CS-134	0	0	.0004841	Air Filter Composite

110818006	6/27/2017	RRD	CS-137	0	0	.001132	Air Filter Composite
110818006	6/27/2017	RRD	J-131	0	0	.002397	Air Filter Composite
112484006	9/26/2017	RRD	BE-7	.08262	.02081	0	Air Filter Composite
112484006	9/26/2017	RRD	CS-134	0	0	.000838	Air Filter Composite
112484006	9/26/2017	RRD	CS-137	0	0	.001036	Air Filter Composite
112484006	9/26/2017	RRD	J-131	0	0	.002784	Air Filter Composite
113800006	12/27/2017	RRD	BE-7	.08202	.02212	0	Air Filter Composite
113800006	12/27/2017	RRD	CS-134	0	0	.002004	Air Filter Composite
113800006	12/27/2017	RRD	CS-137	0	0	.0014	Air Filter Composite
113800006	12/27/2017	RRD	J-131	0	0	.004008	Air Filter Composite
109220003	3/28/2017	SIM	BE-7	.09973	.02476	0	Air Filter Composite
109220003	3/28/2017	SIM	CS-134	0	0	.001154	Air Filter Composite
109220003	3/28/2017	SIM	CS-137	0	0	.001443	Air Filter Composite
109220003	3/28/2017	SIM	J-131	0	0	.001976	Air Filter Composite
110818003	6/27/2017	SIM	BE-7	.07815	.01727	0	Air Filter Composite
110818003	6/27/2017	SIM	CS-134	0	0	.0005152	Air Filter Composite
110818003	6/27/2017	SIM	CS-137	0	0	.0006287	Air Filter Composite
110818003	6/27/2017	SIM	J-131	0	0	.002711	Air Filter Composite
112484003	9/26/2017	SIM	BE-7	.08337	.02087	0	Air Filter Composite
112484003	9/26/2017	SIM	CS-134	0	0	.00212	Air Filter Composite
112484003	9/26/2017	SIM	CS-137	0	0	.001107	Air Filter Composite
112484003	9/26/2017	SIM	J-131	0	0	.001667	Air Filter Composite
113800003	12/27/2017	SIM	BE-7	.08782	.02351	0	Air Filter Composite
113800003	12/27/2017	SIM	CS-134	0	0	.001495	Air Filter Composite
113800003	12/27/2017	SIM	CS-137	0	0	.001475	Air Filter Composite
113800003	12/27/2017	SIM	J-131	0	0	.00334	Air Filter Composite
109220001	3/28/2017	WAY	BE-7	.07957	.02032	0	Air Filter Composite
109220001	3/28/2017	WAY	CS-134	0	0	.00171	Air Filter Composite
109220001	3/28/2017	WAY	CS-137	0	0	.00131	Air Filter Composite
109220001	3/28/2017	WAY	J-131	0	0	.00342	Air Filter Composite
110818001	6/27/2017	WAY	BE-7	.09232	.02533	0	Air Filter Composite
110818001	6/27/2017	WAY	CS-134	0	0	.00172	Air Filter Composite
110818001	6/27/2017	WAY	CS-137	0	0	.001465	Air Filter Composite
110818001	6/27/2017	WAY	J-131	0	0	.006013	Air Filter Composite
112484001	9/26/2017	WAY	BE-7	.08454	.01584	0	Air Filter Composite
112484001	9/26/2017	WAY	CS-134	0	0	.00105	Air Filter Composite
112484001	9/26/2017	WAY	CS-137	0	0	.001087	Air Filter Composite
112484001	9/26/2017	WAY	J-131	0	0	.002662	Air Filter Composite
113800001	12/27/2017	WAY	BE-7	.09112	.02314	0	Air Filter Composite
113800001	12/27/2017	WAY	CS-134	0	0	.001969	Air Filter Composite
113800001	12/27/2017	WAY	CS-137	0	0	.001378	Air Filter Composite
113800001	12/27/2017	WAY	J-131	0	0	.005518	Air Filter Composite
109724001	5/4/2017	1480	BE-7	0	0	126.301	Fish
109724002	5/4/2017	1480	BE-7	0	0	86.2788	Fish
109724001	5/4/2017	1480	CO-58	0	0	20.088	Fish
109724002	5/4/2017	1480	CO-58	0	0	14.3011	Fish
109724001	5/4/2017	1480	CO-60	0	0	14.6653	Fish

109724002	5/4/2017	1480	CO-60	0	0	15.6179	Fish
109724001	5/4/2017	1480	CS-134	0	0	8.7383	Fish
109724002	5/4/2017	1480	CS-134	0	0	13.2264	Fish
109724001	5/4/2017	1480	CS-137	74.2686	19.0998	0	Fish
109724002	5/4/2017	1480	CS-137	22.8745	10.7733	0	Fish
109724001	5/4/2017	1480	FE-59	0	0	20.3817	Fish
109724002	5/4/2017	1480	FE-59	0	0	27.3065	Fish
109724001	5/4/2017	1480	K-40	3784.37	523.204	0	Fish
109724002	5/4/2017	1480	K-40	3151.8	448.67	0	Fish
109724001	5/4/2017	1480	MN-54	0	0	14.7147	Fish
109724002	5/4/2017	1480	MN-54	0	0	15.4438	Fish
109724001	5/4/2017	1480	ZN-65	0	0	47.0541	Fish
109724002	5/4/2017	1480	ZN-65	0	0	33.1898	Fish
112756003	10/24/2017	1480	BE-7	0	0	206.955	Fish
112756004	10/24/2017	1480	BE-7	0	0	252.553	Fish
112756003	10/24/2017	1480	CO-58	0	0	21.3045	Fish
112756004	10/24/2017	1480	CO-58	0	0	17.4811	Fish
112756003	10/24/2017	1480	CO-60	0	0	17.4105	Fish
112756004	10/24/2017	1480	CO-60	0	0	48.4768	Fish
112756003	10/24/2017	1480	CS-134	0	0	25.579	Fish
112756004	10/24/2017	1480	CS-134	0	0	39.643	Fish
112756003	10/24/2017	1480	CS-137	43.1876	17.7038	0	Fish
112756004	10/24/2017	1480	CS-137	51.3699	27.6297	0	Fish
112756003	10/24/2017	1480	FE-59	0	0	39.3845	Fish
112756004	10/24/2017	1480	FE-59	0	0	35.2857	Fish
112756003	10/24/2017	1480	K-40	4662.11	660.46	0	Fish
112756004	10/24/2017	1480	K-40	3310.39	799.22	0	Fish
112756003	10/24/2017	1480	MN-54	0	0	22.0703	Fish
112756004	10/24/2017	1480	MN-54	0	0	51.5926	Fish
112756003	10/24/2017	1480	ZN-65	0	0	26.8777	Fish
112756004	10/24/2017	1480	ZN-65	0	0	55.1044	Fish
108989001	3/22/2017	1532	BE-7	0	0	49.0334	Fish
108989001	3/22/2017	1532	CO-58	0	0	9.53214	Fish
108989001	3/22/2017	1532	CO-60	0	0	12.2668	Fish
108989001	3/22/2017	1532	CS-134	0	0	5.48153	Fish
108989001	3/22/2017	1532	CS-137	0	0	13.729	Fish
108989001	3/22/2017	1532	FE-59	0	0	22.7573	Fish
108989001	3/22/2017	1532	K-40	3853.72	408.012	0	Fish
108989001	3/22/2017	1532	MN-54	0	0	4.85268	Fish
108989001	3/22/2017	1532	ZN-65	0	0	13.7961	Fish
109724003	5/4/2017	1532	BE-7	0	0	110.982	Fish
109724004	5/4/2017	1532	BE-7	0	0	106.187	Fish
109724003	5/4/2017	1532	CO-58	0	0	8.77764	Fish
109724004	5/4/2017	1532	CO-58	0	0	20.4157	Fish
109724003	5/4/2017	1532	CO-60	0	0	16.9576	Fish
109724004	5/4/2017	1532	CO-60	0	0	21.0514	Fish
109724003	5/4/2017	1532	CS-134	0	0	11.0163	Fish

109724004	5/4/2017	1532	CS-134	0	0	8.0414	Fish
109724003	5/4/2017	1532	CS-137	27.4681	14.0576	0	Fish
109724004	5/4/2017	1532	CS-137	20.03	10.4758	0	Fish
109724003	5/4/2017	1532	FE-59	0	0	39.3006	Fish
109724004	5/4/2017	1532	FE-59	0	0	45.4593	Fish
109724003	5/4/2017	1532	K-40	3492.75	591.019	0	Fish
109724004	5/4/2017	1532	K-40	3098.64	491.965	0	Fish
109724003	5/4/2017	1532	MN-54	0	0	19.1741	Fish
109724004	5/4/2017	1532	MN-54	0	0	6.4716	Fish
109724003	5/4/2017	1532	ZN-65	0	0	48.9819	Fish
109724004	5/4/2017	1532	ZN-65	0	0	24.1512	Fish
112756001	10/24/2017	1532	BE-7	0	0	144.842	Fish
112756002	10/24/2017	1532	BE-7	0	0	86.8079	Fish
112756001	10/24/2017	1532	CO-58	0	0	24.6172	Fish
112756002	10/24/2017	1532	CO-58	0	0	9.47026	Fish
112756001	10/24/2017	1532	CO-60	0	0	13.3945	Fish
112756002	10/24/2017	1532	CO-60	0	0	18.4376	Fish
112756001	10/24/2017	1532	CS-134	0	0	18.9229	Fish
112756002	10/24/2017	1532	CS-134	0	0	9.02435	Fish
112756001	10/24/2017	1532	CS-137	0	0	43.499	Fish
112756002	10/24/2017	1532	CS-137	0	0	18.0739	Fish
112756001	10/24/2017	1532	FE-59	0	0	60.8321	Fish
112756002	10/24/2017	1532	FE-59	0	0	28.3304	Fish
112756001	10/24/2017	1532	K-40	3797.58	622.769	0	Fish
112756002	10/24/2017	1532	K-40	3735.74	416.623	0	Fish
112756001	10/24/2017	1532	MN-54	0	0	11.1651	Fish
112756002	10/24/2017	1532	MN-54	0	0	8.73233	Fish
112756001	10/24/2017	1532	ZN-65	0	0	33.0978	Fish
112756002	10/24/2017	1532	ZN-65	0	0	15.654	Fish
107872001	1/10/2017	GIR	BA-140	0	0	3.27217	Milk
107872001	1/10/2017	GIR	BE-7	0	0	4.90238	Milk
107872001	1/10/2017	GIR	CS-134	0	0	.65594	Milk
107872001	1/10/2017	GIR	CS-137	0	0	.933266	Milk
107872001	1/10/2017	GIR	J-131	0	0	.835188	Milk
107872001	1/10/2017	GIR	K-40	1290.17	95.3614	0	Milk
107872001	1/10/2017	GIR	LA-140	0	0	.403168	Milk
108090001	1/24/2017	GIR	BA-140	0	0	2.86882	Milk
108090001	1/24/2017	GIR	BE-7	0	0	3.56431	Milk
108090001	1/24/2017	GIR	CS-134	0	0	.452791	Milk
108090001	1/24/2017	GIR	CS-137	0	0	.798046	Milk
108090001	1/24/2017	GIR	J-131	0	0	.644526	Milk
108090001	1/24/2017	GIR	K-40	1416.77	100.609	0	Milk
108090001	1/24/2017	GIR	LA-140	0	0	.305608	Milk
108429001	2/14/2017	GIR	BA-140	0	0	2.99571	Milk
108429001	2/14/2017	GIR	BE-7	0	0	6.84039	Milk
108429001	2/14/2017	GIR	CS-134	0	0	.684987	Milk
108429001	2/14/2017	GIR	CS-137	0	0	.962377	Milk

108429001	2/14/2017	GIR	J-131	0	0	.960945	Milk
108429001	2/14/2017	GIR	K-40	1465.38	104.765	0	Milk
108429001	2/14/2017	GIR	LA-140	0	0	.40055	Milk
108623001	2/28/2017	GIR	BA-140	0	0	2.83817	Milk
108623001	2/28/2017	GIR	BE-7	0	0	4.17841	Milk
108623001	2/28/2017	GIR	CS-134	0	0	.690551	Milk
108623001	2/28/2017	GIR	CS-137	0	0	1.05276	Milk
108623001	2/28/2017	GIR	J-131	0	0	.841533	Milk
108623001	2/28/2017	GIR	K-40	1315.13	96.4296	0	Milk
108623001	2/28/2017	GIR	LA-140	0	0	.395845	Milk
108832001	3/14/2017	GIR	BA-140	0	0	3.18338	Milk
108832001	3/14/2017	GIR	BE-7	0	0	4.06316	Milk
108832001	3/14/2017	GIR	CS-134	0	0	.536461	Milk
108832001	3/14/2017	GIR	CS-137	0	0	1.05216	Milk
108832001	3/14/2017	GIR	J-131	0	0	.887565	Milk
108832001	3/14/2017	GIR	K-40	1373.48	101.715	0	Milk
108832001	3/14/2017	GIR	LA-140	0	0	.772984	Milk
109066001	3/28/2017	GIR	BA-140	0	0	3.12039	Milk
109066001	3/28/2017	GIR	BE-7	0	0	6.94303	Milk
109066001	3/28/2017	GIR	CS-134	0	0	.66677	Milk
109066001	3/28/2017	GIR	CS-137	1.36497	.633825	0	Milk
109066001	3/28/2017	GIR	J-131	0	0	.554801	Milk
109066001	3/28/2017	GIR	K-40	1430.36	105.795	0	Milk
109066001	3/28/2017	GIR	LA-140	0	0	.429391	Milk
109309001	4/11/2017	GIR	BA-140	0	0	1.28626	Milk
109309001	4/11/2017	GIR	BE-7	0	0	4.95492	Milk
109309001	4/11/2017	GIR	CS-134	0	0	.354572	Milk
109309001	4/11/2017	GIR	CS-137	.934016	.41531	0	Milk
109309001	4/11/2017	GIR	J-131	0	0	.419582	Milk
109309001	4/11/2017	GIR	K-40	1347.67	96.3046	0	Milk
109309001	4/11/2017	GIR	LA-140	0	0	.240749	Milk
109556001	4/25/2017	GIR	BA-140	0	0	2.81285	Milk
109556001	4/25/2017	GIR	BE-7	0	0	7.16621	Milk
109556001	4/25/2017	GIR	CS-134	0	0	.822697	Milk
109556001	4/25/2017	GIR	CS-137	1.02958	.579677	0	Milk
109556001	4/25/2017	GIR	J-131	0	0	.654925	Milk
109556001	4/25/2017	GIR	K-40	1406.45	104.039	0	Milk
109556001	4/25/2017	GIR	LA-140	0	0	.710651	Milk
109796001	5/9/2017	GIR	BA-140	0	0	3.44808	Milk
109796001	5/9/2017	GIR	BE-7	0	0	4.62318	Milk
109796001	5/9/2017	GIR	CS-134	0	0	.644739	Milk
109796001	5/9/2017	GIR	CS-137	1.15875	.556342	0	Milk
109796001	5/9/2017	GIR	J-131	0	0	.516004	Milk
109796001	5/9/2017	GIR	K-40	1431.25	102.639	0	Milk
109796001	5/9/2017	GIR	LA-140	0	0	.813053	Milk
110040001	5/23/2017	GIR	BA-140	0	0	3.65234	Milk
110040001	5/23/2017	GIR	BE-7	0	0	4.05231	Milk

110040001	5/23/2017	GIR	CS-134	0	0	.473651	Milk
110040001	5/23/2017	GIR	CS-137	0	0	1.01796	Milk
110040001	5/23/2017	GIR	J-131	0	0	.62933	Milk
110040001	5/23/2017	GIR	K-40	1365.32	98.078	0	Milk
110040001	5/23/2017	GIR	LA-140	0	0	.503624	Milk
110396001	6/13/2017	GIR	BA-140	0	0	1.75394	Milk
110396001	6/13/2017	GIR	BE-7	0	0	4.54847	Milk
110396001	6/13/2017	GIR	CS-134	0	0	.704482	Milk
110396001	6/13/2017	GIR	CS-137	0	0	1.07178	Milk
110396001	6/13/2017	GIR	J-131	0	0	.625595	Milk
110396001	6/13/2017	GIR	K-40	1436.45	103.063	0	Milk
110396001	6/13/2017	GIR	LA-140	0	0	.39868	Milk
110663001	6/27/2017	GIR	BA-140	0	0	1.82515	Milk
110663001	6/27/2017	GIR	BE-7	0	0	5.30337	Milk
110663001	6/27/2017	GIR	CS-134	0	0	.44075	Milk
110663001	6/27/2017	GIR	CS-137	1.0039	.545965	0	Milk
110663001	6/27/2017	GIR	J-131	0	0	.760954	Milk
110663001	6/27/2017	GIR	K-40	1343.22	96.5944	0	Milk
110663001	6/27/2017	GIR	LA-140	0	0	.438348	Milk
110872001	7/11/2017	GIR	BA-140	0	0	3.43001	Milk
110872001	7/11/2017	GIR	BE-7	0	0	4.79293	Milk
110872001	7/11/2017	GIR	CS-134	0	0	.824703	Milk
110872001	7/11/2017	GIR	CS-137	1.04393	.562397	0	Milk
110872001	7/11/2017	GIR	J-131	0	0	.692166	Milk
110872001	7/11/2017	GIR	K-40	1332.51	95.8286	0	Milk
110872001	7/11/2017	GIR	LA-140	0	0	.499558	Milk
111142001	7/25/2017	GIR	BA-140	0	0	3.49355	Milk
111142001	7/25/2017	GIR	BE-7	0	0	5.14897	Milk
111142001	7/25/2017	GIR	CS-134	0	0	.472771	Milk
111142001	7/25/2017	GIR	CS-137	0	0	1.08059	Milk
111142001	7/25/2017	GIR	J-131	0	0	.691683	Milk
111142001	7/25/2017	GIR	K-40	1327.08	96.3656	0	Milk
111142001	7/25/2017	GIR	LA-140	0	0	.391291	Milk
111787001	8/29/2017	GIR	BA-140	0	0	2.94744	Milk
111787001	8/29/2017	GIR	BE-7	0	0	4.68263	Milk
111787001	8/29/2017	GIR	CS-134	0	0	.605928	Milk
111787001	8/29/2017	GIR	CS-137	1.11645	.563419	0	Milk
111787001	8/29/2017	GIR	J-131	0	0	.883266	Milk
111787001	8/29/2017	GIR	K-40	1281.29	93.2853	0	Milk
111787001	8/29/2017	GIR	LA-140	0	0	.504671	Milk
111986001	9/12/2017	GIR	BA-140	0	0	2.23836	Milk
111986001	9/12/2017	GIR	BE-7	0	0	4.41318	Milk
111986001	9/12/2017	GIR	CS-134	0	0	.431091	Milk
111986001	9/12/2017	GIR	CS-137	.974504	.505501	0	Milk
111986001	9/12/2017	GIR	J-131	0	0	.815049	Milk
111986001	9/12/2017	GIR	K-40	1329.94	94.8736	0	Milk
111986001	9/12/2017	GIR	LA-140	0	0	.34801	Milk

112298001	9/26/2017	GIR	BA-140	0	0	3.01504	Milk
112298001	9/26/2017	GIR	BE-7	0	0	6.19036	Milk
112298001	9/26/2017	GIR	CS-134	0	0	.617086	Milk
112298001	9/26/2017	GIR	CS-137	0	0	.997887	Milk
112298001	9/26/2017	GIR	J-131	0	0	.818126	Milk
112298001	9/26/2017	GIR	K-40	1279.46	92.7518	0	Milk
112298001	9/26/2017	GIR	LA-140	0	0	.930444	Milk
112559001	10/10/2017	GIR	BA-140	0	0	3.22825	Milk
112559001	10/10/2017	GIR	BE-7	0	0	6.83579	Milk
112559001	10/10/2017	GIR	CS-134	0	0	.7223	Milk
112559001	10/10/2017	GIR	CS-137	.990638	.53087	0	Milk
112559001	10/10/2017	GIR	J-131	0	0	.808113	Milk
112559001	10/10/2017	GIR	K-40	1245.57	90.1015	0	Milk
112559001	10/10/2017	GIR	LA-140	0	0	.500235	Milk
112760001	10/24/2017	GIR	BA-140	0	0	1.523	Milk
112760001	10/24/2017	GIR	BE-7	0	0	5.551	Milk
112760001	10/24/2017	GIR	CS-134	0	0	.498	Milk
112760001	10/24/2017	GIR	CS-137	1.281	.504	0	Milk
112760001	10/24/2017	GIR	J-131	0	0	.5	Milk
112760001	10/24/2017	GIR	K-40	1167.28	83.659	0	Milk
112760001	10/24/2017	GIR	LA-140	0	0	.37	Milk
113069001	11/14/2017	GIR	BA-140	0	0	2.80728	Milk
113069001	11/14/2017	GIR	BE-7	0	0	4.7296	Milk
113069001	11/14/2017	GIR	CS-134	0	0	.529219	Milk
113069001	11/14/2017	GIR	CS-137	.796959	.265171	0	Milk
113069001	11/14/2017	GIR	J-131	0	0	.802052	Milk
113069001	11/14/2017	GIR	K-40	1274.72	90.9774	0	Milk
113069001	11/14/2017	GIR	LA-140	0	0	.374646	Milk
113213001	11/28/2017	GIR	BA-140	0	0	2.33815	Milk
113213001	11/28/2017	GIR	BE-7	0	0	4.00791	Milk
113213001	11/28/2017	GIR	CS-134	0	0	.696177	Milk
113213001	11/28/2017	GIR	CS-137	0	0	.808948	Milk
113213001	11/28/2017	GIR	J-131	0	0	.722972	Milk
113213001	11/28/2017	GIR	K-40	1303.06	92.9168	0	Milk
113213001	11/28/2017	GIR	LA-140	0	0	.58207	Milk
113408001	12/12/2017	GIR	BA-140	0	0	2.97853	Milk
113408001	12/12/2017	GIR	BE-7	0	0	3.30331	Milk
113408001	12/12/2017	GIR	CS-134	0	0	.363411	Milk
113408001	12/12/2017	GIR	CS-137	0	0	.821331	Milk
113408001	12/12/2017	GIR	J-131	0	0	.856132	Milk
113408001	12/12/2017	GIR	K-40	1449.66	102.487	0	Milk
113408001	12/12/2017	GIR	LA-140	0	0	.304729	Milk
113552001	12/27/2017	GIR	BA-140	0	0	1.25407	Milk
113552001	12/27/2017	GIR	BE-7	0	0	2.4201	Milk
113552001	12/27/2017	GIR	CS-134	0	0	.219931	Milk
113552001	12/27/2017	GIR	CS-137	0	0	.387285	Milk
113552001	12/27/2017	GIR	J-131	0	0	.771605	Milk

113552001	12/27/2017	GIR	K-40	1371.57	96.0632	0	Milk
113552001	12/27/2017	GIR	LA-140	0	0	.224959	Milk
107872002	1/10/2017	Milky Way	BA-140	0	0	1.36392	Milk
107872002	1/10/2017	Milky Way	BE-7	0	0	4.85423	Milk
107872002	1/10/2017	Milky Way	CS-134	0	0	.315919	Milk
107872002	1/10/2017	Milky Way	CS-137	0	0	.698712	Milk
107872002	1/10/2017	Milky Way	J-131	0	0	.55009	Milk
107872002	1/10/2017	Milky Way	K-40	1570.82	110.336	0	Milk
107872002	1/10/2017	Milky Way	LA-140	0	0	.3232	Milk
108090002	1/24/2017	Milky Way	BA-140	0	0	1.82556	Milk
108090002	1/24/2017	Milky Way	BE-7	0	0	6.69166	Milk
108090002	1/24/2017	Milky Way	CS-134	0	0	.476396	Milk
108090002	1/24/2017	Milky Way	CS-137	0	0	.992166	Milk
108090002	1/24/2017	Milky Way	J-131	0	0	.543155	Milk
108090002	1/24/2017	Milky Way	K-40	1435.62	104.952	0	Milk
108090002	1/24/2017	Milky Way	LA-140	0	0	.452572	Milk
108429002	2/14/2017	Milky Way	BA-140	0	0	2.27842	Milk
108429002	2/14/2017	Milky Way	BE-7	0	0	2.90388	Milk
108429002	2/14/2017	Milky Way	CS-134	0	0	.533106	Milk
108429002	2/14/2017	Milky Way	CS-137	.42335	.191766	0	Milk
108429002	2/14/2017	Milky Way	J-131	0	0	.568593	Milk
108429002	2/14/2017	Milky Way	K-40	1512.52	106.361	0	Milk
108429002	2/14/2017	Milky Way	LA-140	0	0	.415481	Milk
108623002	2/28/2017	Milky Way	BA-140	0	0	2.69785	Milk
108623002	2/28/2017	Milky Way	BE-7	0	0	5.57756	Milk
108623002	2/28/2017	Milky Way	CS-134	0	0	.358577	Milk
108623002	2/28/2017	Milky Way	CS-137	0	0	.752426	Milk
108623002	2/28/2017	Milky Way	J-131	0	0	.688994	Milk
108623002	2/28/2017	Milky Way	K-40	1490.24	106.656	0	Milk
108623002	2/28/2017	Milky Way	LA-140	0	0	.277781	Milk
108832002	3/14/2017	Milky Way	BA-140	0	0	1.69002	Milk
108832002	3/14/2017	Milky Way	BE-7	0	0	3.80992	Milk
108832002	3/14/2017	Milky Way	CS-134	0	0	.354488	Milk
108832002	3/14/2017	Milky Way	CS-137	.775985	.227111	0	Milk
108832002	3/14/2017	Milky Way	J-131	0	0	.639013	Milk
108832002	3/14/2017	Milky Way	K-40	1462.72	103.346	0	Milk
108832002	3/14/2017	Milky Way	LA-140	0	0	.401862	Milk
109066002	3/28/2017	Milky Way	BA-140	0	0	1.84622	Milk
109066002	3/28/2017	Milky Way	BE-7	0	0	5.63747	Milk
109066002	3/28/2017	Milky Way	CS-134	0	0	.554166	Milk
109066002	3/28/2017	Milky Way	CS-137	.670903	.225658	0	Milk
109066002	3/28/2017	Milky Way	J-131	0	0	.643122	Milk
109066002	3/28/2017	Milky Way	K-40	1506.54	106.371	0	Milk
109066002	3/28/2017	Milky Way	LA-140	0	0	.281786	Milk
109309002	4/11/2017	Milky Way	BA-140	0	0	2.82387	Milk
109309002	4/11/2017	Milky Way	BE-7	0	0	7.16731	Milk
109309002	4/11/2017	Milky Way	CS-134	0	0	.556017	Milk

109309002	4/11/2017	Milky Way	CS-137	0	0	.977389	Milk
109309002	4/11/2017	Milky Way	J-131	0	0	.716684	Milk
109309002	4/11/2017	Milky Way	K-40	1400.76	102.481	0	Milk
109309002	4/11/2017	Milky Way	LA-140	0	0	.439062	Milk
109556002	4/25/2017	Milky Way	BA-140	0	0	2.71884	Milk
109556002	4/25/2017	Milky Way	BE-7	0	0	3.16614	Milk
109556002	4/25/2017	Milky Way	CS-134	0	0	.637655	Milk
109556002	4/25/2017	Milky Way	CS-137	.723817	.433447	0	Milk
109556002	4/25/2017	Milky Way	J-131	0	0	.573624	Milk
109556002	4/25/2017	Milky Way	K-40	1475.2	104.203	0	Milk
109556002	4/25/2017	Milky Way	LA-140	0	0	.351673	Milk
109796002	5/9/2017	Milky Way	BA-140	0	0	1.83631	Milk
109796002	5/9/2017	Milky Way	BE-7	0	0	3.59632	Milk
109796002	5/9/2017	Milky Way	CS-134	0	0	.558453	Milk
109796002	5/9/2017	Milky Way	CS-137	.851505	.4238	0	Milk
109796002	5/9/2017	Milky Way	J-131	0	0	.583986	Milk
109796002	5/9/2017	Milky Way	K-40	1492.21	104.909	0	Milk
109796002	5/9/2017	Milky Way	LA-140	0	0	.498678	Milk
110040002	5/23/2017	Milky Way	BA-140	0	0	1.93791	Milk
110040002	5/23/2017	Milky Way	BE-7	0	0	6.21398	Milk
110040002	5/23/2017	Milky Way	CS-134	0	0	.537061	Milk
110040002	5/23/2017	Milky Way	CS-137	.809072	.236487	0	Milk
110040002	5/23/2017	Milky Way	J-131	0	0	.587694	Milk
110040002	5/23/2017	Milky Way	K-40	1450.44	102.555	0	Milk
110040002	5/23/2017	Milky Way	LA-140	0	0	.69829	Milk
110396002	6/13/2017	Milky Way	BA-140	0	0	2.72624	Milk
110396002	6/13/2017	Milky Way	BE-7	0	0	3.34494	Milk
110396002	6/13/2017	Milky Way	CS-134	0	0	.358995	Milk
110396002	6/13/2017	Milky Way	CS-137	.65937	.216518	0	Milk
110396002	6/13/2017	Milky Way	J-131	0	0	.739372	Milk
110396002	6/13/2017	Milky Way	K-40	1429.61	101.094	0	Milk
110396002	6/13/2017	Milky Way	LA-140	0	0	.635519	Milk
110663002	6/27/2017	Milky Way	BA-140	0	0	2.66354	Milk
110663002	6/27/2017	Milky Way	BE-7	0	0	4.37941	Milk
110663002	6/27/2017	Milky Way	CS-134	0	0	.593451	Milk
110663002	6/27/2017	Milky Way	CS-137	0	0	.71737	Milk
110663002	6/27/2017	Milky Way	J-131	0	0	.77016	Milk
110663002	6/27/2017	Milky Way	K-40	1395.16	98.6125	0	Milk
110663002	6/27/2017	Milky Way	LA-140	0	0	.279818	Milk
110872002	7/11/2017	Milky Way	BA-140	0	0	2.53356	Milk
110872002	7/11/2017	Milky Way	BE-7	0	0	4.05713	Milk
110872002	7/11/2017	Milky Way	CS-134	0	0	.584512	Milk
110872002	7/11/2017	Milky Way	CS-137	0	0	.756423	Milk
110872002	7/11/2017	Milky Way	J-131	0	0	.670758	Milk
110872002	7/11/2017	Milky Way	K-40	1375.61	97.2678	0	Milk
110872002	7/11/2017	Milky Way	LA-140	0	0	.27269	Milk
111142002	7/25/2017	Milky Way	BA-140	0	0	1.36648	Milk

111142002	7/25/2017	Milky Way	BE-7	0	0	3.97817	Milk
111142002	7/25/2017	Milky Way	CS-134	0	0	.39818	Milk
111142002	7/25/2017	Milky Way	CS-137	.641845	.268045	0	Milk
111142002	7/25/2017	Milky Way	J-131	0	0	.828919	Milk
111142002	7/25/2017	Milky Way	K-40	1349.69	95.9612	0	Milk
111142002	7/25/2017	Milky Way	LA-140	0	0	.365827	Milk
111508001	8/14/2017	Milky Way	BA-140	0	0	2.52209	Milk
111508001	8/14/2017	Milky Way	BE-7	0	0	4.85578	Milk
111508001	8/14/2017	Milky Way	CS-134	0	0	.434721	Milk
111508001	8/14/2017	Milky Way	CS-137	0	0	.687173	Milk
111508001	8/14/2017	Milky Way	J-131	0	0	.645847	Milk
111508001	8/14/2017	Milky Way	K-40	1298.17	92.1646	0	Milk
111508001	8/14/2017	Milky Way	LA-140	0	0	.614692	Milk
111787002	8/29/2017	Milky Way	BA-140	0	0	1.84951	Milk
111787002	8/29/2017	Milky Way	BE-7	0	0	6.37717	Milk
111787002	8/29/2017	Milky Way	CS-134	0	0	.51825	Milk
111787002	8/29/2017	Milky Way	CS-137	0	0	.778878	Milk
111787002	8/29/2017	Milky Way	J-131	0	0	.481505	Milk
111787002	8/29/2017	Milky Way	K-40	1303.76	92.7984	0	Milk
111787002	8/29/2017	Milky Way	LA-140	0	0	.656028	Milk
111986002	9/12/2017	Milky Way	BA-140	0	0	2.99512	Milk
111986002	9/12/2017	Milky Way	BE-7	0	0	6.14901	Milk
111986002	9/12/2017	Milky Way	CS-134	0	0	.337738	Milk
111986002	9/12/2017	Milky Way	CS-137	0	0	.66779	Milk
111986002	9/12/2017	Milky Way	J-131	0	0	.709498	Milk
111986002	9/12/2017	Milky Way	K-40	1287.72	91.6582	0	Milk
111986002	9/12/2017	Milky Way	LA-140	0	0	.34519	Milk
112298002	9/26/2017	Milky Way	BA-140	0	0	1.44734	Milk
112298002	9/26/2017	Milky Way	BE-7	0	0	3.13652	Milk
112298002	9/26/2017	Milky Way	CS-134	0	0	.341037	Milk
112298002	9/26/2017	Milky Way	CS-137	0	0	.733056	Milk
112298002	9/26/2017	Milky Way	J-131	0	0	.481024	Milk
112298002	9/26/2017	Milky Way	K-40	1283.5	91.3421	0	Milk
112298002	9/26/2017	Milky Way	LA-140	0	0	.317649	Milk
112559002	10/10/2017	Milky Way	BA-140	0	0	1.91109	Milk
112559002	10/10/2017	Milky Way	BE-7	0	0	3.43434	Milk
112559002	10/10/2017	Milky Way	CS-134	0	0	.332599	Milk
112559002	10/10/2017	Milky Way	CS-137	.366043	.148256	0	Milk
112559002	10/10/2017	Milky Way	J-131	0	0	.431232	Milk
112559002	10/10/2017	Milky Way	K-40	1255.04	88.4021	0	Milk
112559002	10/10/2017	Milky Way	LA-140	0	0	.27832	Milk
112760002	10/24/2017	Milky Way	BA-140	0	0	1.532	Milk
112760002	10/24/2017	Milky Way	BE-7	0	0	3.847	Milk
112760002	10/24/2017	Milky Way	CS-134	0	0	.536	Milk
112760002	10/24/2017	Milky Way	CS-137	0	0	.795	Milk
112760002	10/24/2017	Milky Way	J-131	0	0	.824	Milk
112760002	10/24/2017	Milky Way	K-40	1412.464	100.553	0	Milk

112760002	10/24/2017	Milky Way	LA-140	0	0	.41	Milk
113069002	11/14/2017	Milky Way	BA-140	0	0	2.75529	Milk
113069002	11/14/2017	Milky Way	BE-7	0	0	4.99012	Milk
113069002	11/14/2017	Milky Way	CS-134	0	0	.418194	Milk
113069002	11/14/2017	Milky Way	CS-137	0	0	.782338	Milk
113069002	11/14/2017	Milky Way	J-131	0	0	.833	Milk
113069002	11/14/2017	Milky Way	K-40	1488.74	105.044	0	Milk
113069002	11/14/2017	Milky Way	LA-140	0	0	.288892	Milk
113213002	11/28/2017	Milky Way	BA-140	0	0	2.88077	Milk
113213002	11/28/2017	Milky Way	BE-7	0	0	4.27275	Milk
113213002	11/28/2017	Milky Way	CS-134	0	0	.735756	Milk
113213002	11/28/2017	Milky Way	CS-137	0	0	1.02112	Milk
113213002	11/28/2017	Milky Way	J-131	0	0	.964791	Milk
113213002	11/28/2017	Milky Way	K-40	1473.26	106.197	0	Milk
113213002	11/28/2017	Milky Way	LA-140	0	0	.763213	Milk
113408002	12/12/2017	Milky Way	BA-140	0	0	3.63979	Milk
113408002	12/12/2017	Milky Way	BE-7	0	0	4.07396	Milk
113408002	12/12/2017	Milky Way	CS-134	0	0	.634611	Milk
113408002	12/12/2017	Milky Way	CS-137	0	0	1.05821	Milk
113408002	12/12/2017	Milky Way	J-131	0	0	.584613	Milk
113408002	12/12/2017	Milky Way	K-40	1490.39	106.482	0	Milk
113408002	12/12/2017	Milky Way	LA-140	0	0	.421036	Milk
113552002	12/27/2017	Milky Way	BA-140	0	0	2.64721	Milk
113552002	12/27/2017	Milky Way	BE-7	0	0	5.7273	Milk
113552002	12/27/2017	Milky Way	CS-134	0	0	.465075	Milk
113552002	12/27/2017	Milky Way	CS-137	0	0	.861183	Milk
113552002	12/27/2017	Milky Way	J-131	0	0	.648447	Milk
113552002	12/27/2017	Milky Way	K-40	1506.52	106.928	0	Milk
113552002	12/27/2017	Milky Way	LA-140	0	0	.356764	Milk
109435001	4/18/2017	1502	BE-7	3368.595	359.55	0	Sediment
109435001	4/18/2017	1502	CO-58	53.899	15.43	0	Sediment
109435001	4/18/2017	1502	CO-60	26.497	14.154	0	Sediment
109435001	4/18/2017	1502	CS-134	0	0	23.022	Sediment
109435001	4/18/2017	1502	CS-137	92.833	18.634	0	Sediment
109435001	4/18/2017	1502	K-40	11255.99	972.633	0	Sediment
112431001	10/3/2017	1502	BE-7	270.2	110.147	0	Sediment
112431001	10/3/2017	1502	CO-58	0	0	33.173	Sediment
112431001	10/3/2017	1502	CO-60	0	0	39.625	Sediment
112431001	10/3/2017	1502	CS-134	0	0	25.667	Sediment
112431001	10/3/2017	1502	CS-137	81.354	32.433	0	Sediment
112431001	10/3/2017	1502	K-40	14267.64	1280.43	0	Sediment
109435002	4/18/2017	1533	BE-7	2066.315	244.949	0	Sediment
109435002	4/18/2017	1533	CO-58	0	0	17.18	Sediment
109435002	4/18/2017	1533	CO-60	0	0	11.817	Sediment
109435002	4/18/2017	1533	CS-134	0	0	18.567	Sediment
109435002	4/18/2017	1533	CS-137	60.924	15.282	0	Sediment
109435002	4/18/2017	1533	K-40	13369.46	1103.051	0	Sediment

112431002	10/3/2017	1533	BE-7	337.954	144.372	0	Sediment
112431002	10/3/2017	1533	CO-58	0	0	17.121	Sediment
112431002	10/3/2017	1533	CO-60	0	0	20.855	Sediment
112431002	10/3/2017	1533	CS-134	0	0	18.523	Sediment
112431002	10/3/2017	1533	CS-137	59.334	15.25	0	Sediment
112431002	10/3/2017	1533	K-40	16092.89	1261.345	0	Sediment
108198001	1/31/2017	Simulator	BE-7	10223.5	910.654	0	Vegetation
108198001	1/31/2017	Simulator	CS-134	0	0	24.4644	Vegetation
108198001	1/31/2017	Simulator	CS-137	0	0	41.2021	Vegetation
108198001	1/31/2017	Simulator	J-131	0	0	17.2334	Vegetation
108198001	1/31/2017	Simulator	K-40	2089.44	521.81	0	Vegetation
108624001	2/28/2017	Simulator	BE-7	4153.27	439.503	0	Vegetation
108624001	2/28/2017	Simulator	CS-134	0	0	11.0207	Vegetation
108624001	2/28/2017	Simulator	CS-137	0	0	18.4653	Vegetation
108624001	2/28/2017	Simulator	J-131	0	0	16.8717	Vegetation
108624001	2/28/2017	Simulator	K-40	1750.65	367.421	0	Vegetation
109067001	3/28/2017	Simulator	BE-7	9037.1	824.024	0	Vegetation
109067001	3/28/2017	Simulator	CS-134	0	0	21.2162	Vegetation
109067001	3/28/2017	Simulator	CS-137	0	0	42.221	Vegetation
109067001	3/28/2017	Simulator	J-131	0	0	23.2391	Vegetation
109067001	3/28/2017	Simulator	K-40	3885.39	658.373	0	Vegetation
109557001	4/25/2017	Simulator	BE-7	2324.96	263.122	0	Vegetation
109557001	4/25/2017	Simulator	CS-134	0	0	11.4597	Vegetation
109557001	4/25/2017	Simulator	CS-137	0	0	22.5896	Vegetation
109557001	4/25/2017	Simulator	J-131	0	0	10.7836	Vegetation
109557001	4/25/2017	Simulator	K-40	3110.73	407.557	0	Vegetation
110174001	5/31/2017	Simulator	BE-7	916.932	242.317	0	Vegetation
110174001	5/31/2017	Simulator	CS-134	0	0	25.9238	Vegetation
110174001	5/31/2017	Simulator	CS-137	0	0	35.0188	Vegetation
110174001	5/31/2017	Simulator	J-131	0	0	30.1877	Vegetation
110174001	5/31/2017	Simulator	K-40	3405.45	620.066	0	Vegetation
110666001	6/27/2017	Simulator	BE-7	877.369	181.49	0	Vegetation
110666001	6/27/2017	Simulator	CS-134	0	0	18.5413	Vegetation
110666001	6/27/2017	Simulator	CS-137	0	0	17.9787	Vegetation
110666001	6/27/2017	Simulator	J-131	0	0	11.7949	Vegetation
110666001	6/27/2017	Simulator	K-40	2623.65	390.859	0	Vegetation
111143001	7/25/2017	Simulator	BE-7	1381.95	203.364	0	Vegetation
111143001	7/25/2017	Simulator	CS-134	0	0	20.5975	Vegetation
111143001	7/25/2017	Simulator	CS-137	0	0	25.0542	Vegetation
111143001	7/25/2017	Simulator	J-131	0	0	20.4731	Vegetation
111143001	7/25/2017	Simulator	K-40	2409.91	391.258	0	Vegetation
111788001	8/29/2017	Simulator	BE-7	499.336	148.308	0	Vegetation
111788001	8/29/2017	Simulator	CS-134	0	0	12.3218	Vegetation
111788001	8/29/2017	Simulator	CS-137	0	0	29.4155	Vegetation
111788001	8/29/2017	Simulator	J-131	0	0	19.493	Vegetation
111788001	8/29/2017	Simulator	K-40	4434.7	574.036	0	Vegetation
112299001	9/26/2017	Simulator	BE-7	1415.62	183.032	0	Vegetation

112299001	9/26/2017	Simulator	CS-134	0	0	19.0397	Vegetation
112299001	9/26/2017	Simulator	CS-137	0	0	19.037	Vegetation
112299001	9/26/2017	Simulator	J-131	0	0	17.4749	Vegetation
112299001	9/26/2017	Simulator	K-40	2602.68	391.818	0	Vegetation
113216001	11/28/2017	Simulator	BE-7	2576.81	313.445	0	Vegetation
113216001	11/28/2017	Simulator	CS-134	0	0	22.5259	Vegetation
113216001	11/28/2017	Simulator	CS-137	0	0	27.8835	Vegetation
113216001	11/28/2017	Simulator	J-131	0	0	17.8858	Vegetation
113216001	11/28/2017	Simulator	K-40	2704.83	492.986	0	Vegetation
113555001	12/27/2017	Simulator	BE-7	2878.79	297.767	0	Vegetation
113555001	12/27/2017	Simulator	CS-134	0	0	9.55343	Vegetation
113555001	12/27/2017	Simulator	CS-137	0	0	14.846	Vegetation
113555001	12/27/2017	Simulator	J-131	0	0	10.8011	Vegetation
113555001	12/27/2017	Simulator	K-40	1849.7	337.528	0	Vegetation
108198003	1/31/2017	Waynesboro	BE-7	2002.24	236.092	0	Vegetation
108198003	1/31/2017	Waynesboro	CS-134	0	0	18.4963	Vegetation
108198003	1/31/2017	Waynesboro	CS-137	0	0	14.1079	Vegetation
108198003	1/31/2017	Waynesboro	J-131	0	0	20.8071	Vegetation
108198003	1/31/2017	Waynesboro	K-40	6198.42	626.357	0	Vegetation
108624003	2/28/2017	Waynesboro	BE-7	804.132	113.175	0	Vegetation
108624003	2/28/2017	Waynesboro	CS-134	0	0	6.65079	Vegetation
108624003	2/28/2017	Waynesboro	CS-137	0	0	9.84751	Vegetation
108624003	2/28/2017	Waynesboro	J-131	0	0	5.3469	Vegetation
108624003	2/28/2017	Waynesboro	K-40	3382.83	331.036	0	Vegetation
109067003	3/28/2017	Waynesboro	BE-7	1063.69	123.845	0	Vegetation
109067003	3/28/2017	Waynesboro	CS-134	0	0	6.64934	Vegetation
109067003	3/28/2017	Waynesboro	CS-137	22.01	9.95949	0	Vegetation
109067003	3/28/2017	Waynesboro	J-131	0	0	10.4298	Vegetation
109067003	3/28/2017	Waynesboro	K-40	4592.32	433.119	0	Vegetation
109557003	4/25/2017	Waynesboro	BE-7	1734.3	166.816	0	Vegetation
109557003	4/25/2017	Waynesboro	CS-134	0	0	5.71965	Vegetation
109557003	4/25/2017	Waynesboro	CS-137	0	0	7.77171	Vegetation
109557003	4/25/2017	Waynesboro	J-131	0	0	5.83809	Vegetation
109557003	4/25/2017	Waynesboro	K-40	2777.52	266.685	0	Vegetation
110174003	5/31/2017	Waynesboro	BE-7	1245.83	242.877	0	Vegetation
110174003	5/31/2017	Waynesboro	CS-134	0	0	28.9973	Vegetation
110174003	5/31/2017	Waynesboro	CS-137	0	0	34.5269	Vegetation
110174003	5/31/2017	Waynesboro	J-131	0	0	25.6419	Vegetation
110174003	5/31/2017	Waynesboro	K-40	3350.04	589.18	0	Vegetation
110666003	6/27/2017	Waynesboro	BE-7	891.458	151.924	0	Vegetation
110666003	6/27/2017	Waynesboro	CS-134	0	0	19.1479	Vegetation
110666003	6/27/2017	Waynesboro	CS-137	0	0	26.9193	Vegetation
110666003	6/27/2017	Waynesboro	J-131	0	0	14.1249	Vegetation
110666003	6/27/2017	Waynesboro	K-40	3512.79	483.815	0	Vegetation
111143003	7/25/2017	Waynesboro	BE-7	1368.93	266.275	0	Vegetation
111143003	7/25/2017	Waynesboro	CS-134	0	0	13.0639	Vegetation
111143003	7/25/2017	Waynesboro	CS-137	0	0	29.2479	Vegetation

111143003	7/25/2017	Waynesboro	J-131	0	0	26.4472	Vegetation
111143003	7/25/2017	Waynesboro	K-40	3341.55	558.957	0	Vegetation
111788003	8/29/2017	Waynesboro	BE-7	741.361	209.68	0	Vegetation
111788003	8/29/2017	Waynesboro	CS-134	0	0	17.3507	Vegetation
111788003	8/29/2017	Waynesboro	CS-137	0	0	35.9885	Vegetation
111788003	8/29/2017	Waynesboro	J-131	0	0	13.511	Vegetation
111788003	8/29/2017	Waynesboro	K-40	3262.22	476.281	0	Vegetation
112299003	9/26/2017	Waynesboro	BE-7	2029.81	264.955	0	Vegetation
112299003	9/26/2017	Waynesboro	CS-134	0	0	18.9759	Vegetation
112299003	9/26/2017	Waynesboro	CS-137	0	0	20.6137	Vegetation
112299003	9/26/2017	Waynesboro	J-131	0	0	29.1807	Vegetation
112299003	9/26/2017	Waynesboro	K-40	2950.92	520.4	0	Vegetation
113216003	11/28/2017	Waynesboro	BE-7	1590.43	216.46	0	Vegetation
113216003	11/28/2017	Waynesboro	CS-134	0	0	15.9041	Vegetation
113216003	11/28/2017	Waynesboro	CS-137	0	0	18.5387	Vegetation
113216003	11/28/2017	Waynesboro	J-131	0	0	10.4851	Vegetation
113216003	11/28/2017	Waynesboro	K-40	2257.76	383.195	0	Vegetation
113555003	12/27/2017	Waynesboro	BE-7	3346.28	390.483	0	Vegetation
113555003	12/27/2017	Waynesboro	CS-134	0	0	19.7902	Vegetation
113555003	12/27/2017	Waynesboro	CS-137	0	0	23.7063	Vegetation
113555003	12/27/2017	Waynesboro	J-131	0	0	19.7118	Vegetation
113555003	12/27/2017	Waynesboro	K-40	4170.1	574.01	0	Vegetation
107711003	1/4/2017	1495	BA-140	0	0	16.9875	Water
107711003	1/4/2017	1495	BE-7	0	0	46.393	Water
107711003	1/4/2017	1495	CO-58	0	0	2.65064	Water
107711003	1/4/2017	1495	CO-60	0	0	2.95269	Water
107711003	1/4/2017	1495	CS-134	0	0	6.04338	Water
107711003	1/4/2017	1495	CS-137	0	0	7.29232	Water
107711003	1/4/2017	1495	FE-59	0	0	9.03559	Water
107752003	1/4/2017	1495	H3	256	186	412	Water
107711003	1/4/2017	1495	J-131	0	0	6.87906	Water
107711003	1/4/2017	1495	K-40	0	0	93.2812	Water
107711003	1/4/2017	1495	LA-140	0	0	5.03015	Water
107711003	1/4/2017	1495	MN-54	0	0	7.27488	Water
107711003	1/4/2017	1495	NB-95	0	0	3.91701	Water
107711003	1/4/2017	1495	RA-226	0	0	0	Water
107711003	1/4/2017	1495	RA-228	0	0	0	Water
107711003	1/4/2017	1495	ZN-65	0	0	11.6226	Water
107711003	1/4/2017	1495	ZR-95	0	0	6.43785	Water
108328003	2/7/2017	1495	BA-140	0	0	19.658	Water
108328003	2/7/2017	1495	BE-7	0	0	47.7365	Water
108328003	2/7/2017	1495	CO-58	0	0	2.68785	Water
108328003	2/7/2017	1495	CO-60	0	0	5.27204	Water
108328003	2/7/2017	1495	CS-134	0	0	7.189	Water
108328003	2/7/2017	1495	CS-137	0	0	4.09439	Water
108328003	2/7/2017	1495	FE-59	0	0	10.1631	Water
108328003	2/7/2017	1495	J-131	0	0	4.29329	Water

108328003	2/7/2017	1495	K-40	0	0	78.89	Water
108328003	2/7/2017	1495	LA-140	0	0	3.482	Water
108328003	2/7/2017	1495	MN-54	0	0	5.02097	Water
108328003	2/7/2017	1495	NB-95	0	0	5.17748	Water
108328003	2/7/2017	1495	RA-226	0	0	0	Water
108328003	2/7/2017	1495	RA-228	0	0	0	Water
108328003	2/7/2017	1495	ZN-65	0	0	9.68176	Water
108328003	2/7/2017	1495	ZR-95	0	0	11.7378	Water
108719003	3/7/2017	1495	BA-140	0	0	28.6053	Water
108719003	3/7/2017	1495	BE-7	0	0	44.9291	Water
108719003	3/7/2017	1495	CO-58	0	0	3.47024	Water
108719003	3/7/2017	1495	CO-60	0	0	3.89837	Water
108719003	3/7/2017	1495	CS-134	0	0	3.43143	Water
108719003	3/7/2017	1495	CS-137	0	0	7.11738	Water
108719003	3/7/2017	1495	FE-59	0	0	8.7657	Water
108719003	3/7/2017	1495	J-131	0	0	6.46957	Water
108719003	3/7/2017	1495	K-40	0	0	99.0009	Water
108719003	3/7/2017	1495	LA-140	0	0	7.11938	Water
108719003	3/7/2017	1495	MN-54	0	0	6.92724	Water
108719003	3/7/2017	1495	NB-95	0	0	3.4949	Water
108719003	3/7/2017	1495	RA-226	0	0	0	Water
108719003	3/7/2017	1495	RA-228	0	0	0	Water
108719003	3/7/2017	1495	ZN-65	0	0	11.4909	Water
108719003	3/7/2017	1495	ZR-95	0	0	5.9203	Water
109217003	4/4/2017	1495	BA-140	0	0	26.2633	Water
109217003	4/4/2017	1495	BE-7	0	0	61.7653	Water
109217003	4/4/2017	1495	CO-58	0	0	8.28734	Water
109217003	4/4/2017	1495	CO-60	0	0	5.4407	Water
109217003	4/4/2017	1495	CS-134	0	0	6.8126	Water
109217003	4/4/2017	1495	CS-137	0	0	8.36612	Water
109217003	4/4/2017	1495	FE-59	0	0	16.9588	Water
109239003	4/4/2017	1495	H3	987	188	1140	Water
109217003	4/4/2017	1495	J-131	0	0	7.58891	Water
109217003	4/4/2017	1495	K-40	0	0	111.762	Water
109217003	4/4/2017	1495	LA-140	0	0	3.84102	Water
109217003	4/4/2017	1495	MN-54	0	0	7.32634	Water
109217003	4/4/2017	1495	NB-95	0	0	4.91224	Water
109217003	4/4/2017	1495	RA-226	0	0	0	Water
109217003	4/4/2017	1495	RA-228	0	0	0	Water
109217003	4/4/2017	1495	ZN-65	0	0	6.25938	Water
109217003	4/4/2017	1495	ZR-95	0	0	6.74469	Water
109661003	5/2/2017	1495	BA-140	0	0	33.6538	Water
109661003	5/2/2017	1495	BE-7	0	0	39.4008	Water
109661003	5/2/2017	1495	CO-58	0	0	6.37759	Water
109661003	5/2/2017	1495	CO-60	0	0	3.58223	Water
109661003	5/2/2017	1495	CS-134	0	0	5.77688	Water
109661003	5/2/2017	1495	CS-137	0	0	6.13221	Water

109661003	5/2/2017	1495	FE-59	0	0	8.73657	Water
109661003	5/2/2017	1495	J-131	0	0	4.75241	Water
109661003	5/2/2017	1495	K-40	0	0	108.544	Water
109661003	5/2/2017	1495	LA-140	0	0	3.81666	Water
109661003	5/2/2017	1495	MN-54	0	0	3.90817	Water
109661003	5/2/2017	1495	NB-95	0	0	7.84315	Water
109661003	5/2/2017	1495	RA-226	0	0	0	Water
109661003	5/2/2017	1495	RA-228	0	0	0	Water
109661003	5/2/2017	1495	ZN-65	0	0	12.6843	Water
109661003	5/2/2017	1495	ZR-95	0	0	6.26184	Water
110259003	6/6/2017	1495	BA-140	0	0	21.9329	Water
110259003	6/6/2017	1495	BE-7	0	0	61.6527	Water
110259003	6/6/2017	1495	CO-58	0	0	5.11346	Water
110259003	6/6/2017	1495	CO-60	0	0	10.4003	Water
110259003	6/6/2017	1495	CS-134	0	0	4.43394	Water
110259003	6/6/2017	1495	CS-137	0	0	6.49859	Water
110259003	6/6/2017	1495	FE-59	0	0	15.2164	Water
110259003	6/6/2017	1495	J-131	0	0	10.1159	Water
110259003	6/6/2017	1495	K-40	0	0	121.215	Water
110259003	6/6/2017	1495	LA-140	0	0	9.35897	Water
110259003	6/6/2017	1495	MN-54	0	0	8.90955	Water
110259003	6/6/2017	1495	NB-95	0	0	9.6108	Water
110259003	6/6/2017	1495	RA-226	0	0	0	Water
110259003	6/6/2017	1495	RA-228	0	0	0	Water
110259003	6/6/2017	1495	ZN-65	0	0	19.5754	Water
110259003	6/6/2017	1495	ZR-95	0	0	12.293	Water
110801003	7/6/2017	1495	BA-140	0	0	17.1873	Water
110801003	7/6/2017	1495	BE-7	0	0	46.2216	Water
110801003	7/6/2017	1495	CO-58	0	0	6.11919	Water
110801003	7/6/2017	1495	CO-60	0	0	6.61368	Water
110801003	7/6/2017	1495	CS-134	0	0	3.63539	Water
110801003	7/6/2017	1495	CS-137	0	0	4.62553	Water
110801003	7/6/2017	1495	FE-59	0	0	4.2532	Water
110868003	7/6/2017	1495	H3	560	177	709	Water
110801003	7/6/2017	1495	J-131	0	0	4.83743	Water
110801003	7/6/2017	1495	K-40	0	0	87.9363	Water
110801003	7/6/2017	1495	LA-140	0	0	3.88604	Water
110801003	7/6/2017	1495	MN-54	0	0	6.627	Water
110801003	7/6/2017	1495	NB-95	0	0	4.9238	Water
110801003	7/6/2017	1495	RA-226	0	0	0	Water
110801003	7/6/2017	1495	RA-228	0	0	0	Water
110801003	7/6/2017	1495	ZN-65	0	0	8.04591	Water
110801003	7/6/2017	1495	ZR-95	0	0	12.7435	Water
111396003	8/8/2017	1495	BA-140	0	0	24.74	Water
111396003	8/8/2017	1495	BE-7	0	0	56.6948	Water
111396003	8/8/2017	1495	CO-58	0	0	3.20328	Water
111396003	8/8/2017	1495	CO-60	0	0	3.60099	Water

111396003	8/8/2017	1495	CS-134	0	0	3.41421	Water
111396003	8/8/2017	1495	CS-137	0	0	6.8996	Water
111396003	8/8/2017	1495	FE-59	0	0	6.14605	Water
111396003	8/8/2017	1495	J-131	0	0	5.48435	Water
111396003	8/8/2017	1495	K-40	0	0	110.947	Water
111396003	8/8/2017	1495	LA-140	0	0	3.06654	Water
111396003	8/8/2017	1495	MN-54	0	0	5.06426	Water
111396003	8/8/2017	1495	NB-95	0	0	5.90185	Water
111396003	8/8/2017	1495	RA-226	0	0	0	Water
111396003	8/8/2017	1495	RA-228	0	0	0	Water
111396003	8/8/2017	1495	ZN-65	0	0	9.95406	Water
111396003	8/8/2017	1495	ZR-95	0	0	5.1741	Water
111885003	9/6/2017	1495	BA-140	0	0	15.7596	Water
111885003	9/6/2017	1495	BE-7	0	0	53.8024	Water
111885003	9/6/2017	1495	CO-58	0	0	6.10938	Water
111885003	9/6/2017	1495	CO-60	0	0	3.26891	Water
111885003	9/6/2017	1495	CS-134	0	0	4.68707	Water
111885003	9/6/2017	1495	CS-137	0	0	6.86751	Water
111885003	9/6/2017	1495	FE-59	0	0	14.8631	Water
111885003	9/6/2017	1495	J-131	0	0	6.49303	Water
111885003	9/6/2017	1495	K-40	0	0	95.5162	Water
111885003	9/6/2017	1495	LA-140	0	0	3.83933	Water
111885003	9/6/2017	1495	MN-54	0	0	6.54023	Water
111885003	9/6/2017	1495	NB-95	0	0	6.47016	Water
111885003	9/6/2017	1495	RA-226	0	0	0	Water
111885003	9/6/2017	1495	RA-228	0	0	0	Water
111885003	9/6/2017	1495	ZN-65	0	0	7.92307	Water
111885003	9/6/2017	1495	ZR-95	0	0	10.835	Water
112430003	10/3/2017	1495	BA-140	0	0	15.743	Water
112430003	10/3/2017	1495	BE-7	0	0	31.6068	Water
112430003	10/3/2017	1495	CO-58	0	0	6.05221	Water
112430003	10/3/2017	1495	CO-60	0	0	6.79646	Water
112430003	10/3/2017	1495	CS-134	0	0	4.58355	Water
112430003	10/3/2017	1495	CS-137	0	0	7.03059	Water
112430003	10/3/2017	1495	FE-59	0	0	16.4701	Water
112454003	10/3/2017	1495	H3	1080	177	1230	Water
112430003	10/3/2017	1495	J-131	0	0	4.70406	Water
112430003	10/3/2017	1495	K-40	0	0	143.442	Water
112430003	10/3/2017	1495	LA-140	0	0	3.78779	Water
112430003	10/3/2017	1495	MN-54	0	0	5.94667	Water
112430003	10/3/2017	1495	NB-95	0	0	6.08176	Water
112430003	10/3/2017	1495	RA-226	0	0	0	Water
112430003	10/3/2017	1495	RA-228	0	0	0	Water
112430003	10/3/2017	1495	ZN-65	0	0	10.1276	Water
112430003	10/3/2017	1495	ZR-95	0	0	13.9677	Water
112994003	11/7/2017	1495	BA-140	0	0	27.2624	Water
112994003	11/7/2017	1495	BE-7	0	0	57.5489	Water

112994003	11/7/2017	1495	CO-58	0	0	4.76616	Water
112994003	11/7/2017	1495	CO-60	0	0	3.26948	Water
112994003	11/7/2017	1495	CS-134	0	0	4.68913	Water
112994003	11/7/2017	1495	CS-137	0	0	6.29095	Water
112994003	11/7/2017	1495	FE-59	0	0	5.26323	Water
112994003	11/7/2017	1495	J-131	0	0	7.91557	Water
112994003	11/7/2017	1495	K-40	0	0	116.992	Water
112994003	11/7/2017	1495	LA-140	0	0	4.56783	Water
112994003	11/7/2017	1495	MN-54	0	0	4.74051	Water
112994003	11/7/2017	1495	NB-95	0	0	5.33635	Water
112994003	11/7/2017	1495	RA-226	0	0	0	Water
112994003	11/7/2017	1495	RA-228	0	0	0	Water
112994003	11/7/2017	1495	ZN-65	0	0	7.45134	Water
112994003	11/7/2017	1495	ZR-95	0	0	5.95322	Water
113342003	12/5/2017	1495	BA-140	0	0	28.7885	Water
113342003	12/5/2017	1495	BE-7	0	0	46.7706	Water
113342003	12/5/2017	1495	CO-58	0	0	7.10023	Water
113342003	12/5/2017	1495	CO-60	0	0	5.71465	Water
113342003	12/5/2017	1495	CS-134	0	0	5.97582	Water
113342003	12/5/2017	1495	CS-137	0	0	3.95398	Water
113342003	12/5/2017	1495	FE-59	0	0	14.5404	Water
113342003	12/5/2017	1495	J-131	0	0	4.66123	Water
113342003	12/5/2017	1495	K-40	0	0	152.374	Water
113342003	12/5/2017	1495	LA-140	0	0	4.07147	Water
113342003	12/5/2017	1495	MN-54	0	0	6.45663	Water
113342003	12/5/2017	1495	NB-95	0	0	7.86953	Water
113342003	12/5/2017	1495	RA-226	0	0	0	Water
113342003	12/5/2017	1495	RA-228	0	0	0	Water
113342003	12/5/2017	1495	ZN-65	0	0	17.6341	Water
113342003	12/5/2017	1495	ZR-95	0	0	7.77636	Water
107711002	1/4/2017	1504	BA-140	0	0	13.6572	Water
107711002	1/4/2017	1504	BE-7	0	0	53.0579	Water
107711002	1/4/2017	1504	CO-58	0	0	4.9769	Water
107711002	1/4/2017	1504	CO-60	0	0	5.80908	Water
107711002	1/4/2017	1504	CS-134	0	0	5.84698	Water
107711002	1/4/2017	1504	CS-137	0	0	4.78418	Water
107711002	1/4/2017	1504	FE-59	0	0	5.32633	Water
107752002	1/4/2017	1504	H3	1210	198	1370	Water
107711002	1/4/2017	1504	J-131	0	0	4.55368	Water
107711002	1/4/2017	1504	K-40	0	0	79.9958	Water
107711002	1/4/2017	1504	LA-140	0	0	3.8311	Water
107711002	1/4/2017	1504	MN-54	0	0	7.20307	Water
107711002	1/4/2017	1504	NB-95	0	0	6.17215	Water
107711002	1/4/2017	1504	RA-226	0	0	0	Water
107711002	1/4/2017	1504	RA-228	0	0	0	Water
107711002	1/4/2017	1504	ZN-65	0	0	11.1697	Water
107711002	1/4/2017	1504	ZR-95	0	0	5.00379	Water

108328002	2/7/2017	1504	BA-140	0	0	25.1436	Water
108328002	2/7/2017	1504	BE-7	0	0	44.0512	Water
108328002	2/7/2017	1504	CO-58	0	0	2.38747	Water
108328002	2/7/2017	1504	CO-60	0	0	3.70684	Water
108328002	2/7/2017	1504	CS-134	0	0	5.37963	Water
108328002	2/7/2017	1504	CS-137	0	0	4.11404	Water
108328002	2/7/2017	1504	FE-59	0	0	5.32857	Water
108328002	2/7/2017	1504	J-131	0	0	7.91925	Water
108328002	2/7/2017	1504	K-40	0	0	96.6844	Water
108328002	2/7/2017	1504	LA-140	0	0	5.41679	Water
108328002	2/7/2017	1504	MN-54	0	0	5.95872	Water
108328002	2/7/2017	1504	NB-95	0	0	5.07518	Water
108328002	2/7/2017	1504	RA-226	0	0	0	Water
108328002	2/7/2017	1504	RA-228	0	0	0	Water
108328002	2/7/2017	1504	ZN-65	0	0	11.4891	Water
108328002	2/7/2017	1504	ZR-95	0	0	8.13876	Water
108719002	3/7/2017	1504	BA-140	0	0	19.842	Water
108719002	3/7/2017	1504	BE-7	0	0	47.2086	Water
108719002	3/7/2017	1504	CO-58	0	0	3.00544	Water
108719002	3/7/2017	1504	CO-60	0	0	4.22663	Water
108719002	3/7/2017	1504	CS-134	0	0	5.00773	Water
108719002	3/7/2017	1504	CS-137	0	0	7.39029	Water
108719002	3/7/2017	1504	FE-59	0	0	8.70516	Water
108719002	3/7/2017	1504	J-131	0	0	6.62948	Water
108719002	3/7/2017	1504	K-40	0	0	118.429	Water
108719002	3/7/2017	1504	LA-140	0	0	4.27513	Water
108719002	3/7/2017	1504	MN-54	0	0	6.99036	Water
108719002	3/7/2017	1504	NB-95	0	0	3.19669	Water
108719002	3/7/2017	1504	RA-226	0	0	0	Water
108719002	3/7/2017	1504	RA-228	0	0	0	Water
108719002	3/7/2017	1504	ZN-65	0	0	15.0013	Water
108719002	3/7/2017	1504	ZR-95	0	0	8.86284	Water
109217002	4/4/2017	1504	BA-140	0	0	13.6201	Water
109217002	4/4/2017	1504	BE-7	0	0	50.6739	Water
109217002	4/4/2017	1504	CO-58	0	0	5.02709	Water
109217002	4/4/2017	1504	CO-60	0	0	6.12041	Water
109217002	4/4/2017	1504	CS-134	0	0	4.86884	Water
109217002	4/4/2017	1504	CS-137	0	0	8.25933	Water
109217002	4/4/2017	1504	FE-59	0	0	14.5437	Water
109239002	4/4/2017	1504	H3	3350	219	3530	Water
109217002	4/4/2017	1504	J-131	0	0	7.59133	Water
109217002	4/4/2017	1504	K-40	0	0	86.4265	Water
109217002	4/4/2017	1504	LA-140	0	0	8.18342	Water
109217002	4/4/2017	1504	MN-54	0	0	5.02511	Water
109217002	4/4/2017	1504	NB-95	0	0	4.69739	Water
109217002	4/4/2017	1504	RA-226	0	0	0	Water
109217002	4/4/2017	1504	RA-228	0	0	0	Water

109217002	4/4/2017	1504	ZN-65	0	0	8.8315	Water
109217002	4/4/2017	1504	ZR-95	0	0	10.9674	Water
109661002	5/2/2017	1504	BA-140	0	0	27.3916	Water
109661002	5/2/2017	1504	BE-7	0	0	55.1886	Water
109661002	5/2/2017	1504	CO-58	0	0	6.90463	Water
109661002	5/2/2017	1504	CO-60	0	0	6.60206	Water
109661002	5/2/2017	1504	CS-134	0	0	5.98788	Water
109661002	5/2/2017	1504	CS-137	0	0	6.98346	Water
109661002	5/2/2017	1504	FE-59	0	0	11.8658	Water
109661002	5/2/2017	1504	J-131	0	0	7.15835	Water
109661002	5/2/2017	1504	K-40	0	0	117.248	Water
109661002	5/2/2017	1504	LA-140	0	0	8.30105	Water
109661002	5/2/2017	1504	MN-54	0	0	8.64448	Water
109661002	5/2/2017	1504	NB-95	0	0	7.09806	Water
109661002	5/2/2017	1504	RA-226	0	0	0	Water
109661002	5/2/2017	1504	RA-228	0	0	0	Water
109661002	5/2/2017	1504	ZN-65	0	0	16.3693	Water
109661002	5/2/2017	1504	ZR-95	0	0	14.6148	Water
110259002	6/6/2017	1504	BA-140	0	0	13.223	Water
110259002	6/6/2017	1504	BE-7	0	0	36.0786	Water
110259002	6/6/2017	1504	CO-58	0	0	3.00573	Water
110259002	6/6/2017	1504	CO-60	0	0	6.72712	Water
110259002	6/6/2017	1504	CS-134	0	0	5.70067	Water
110259002	6/6/2017	1504	CS-137	0	0	5.85794	Water
110259002	6/6/2017	1504	FE-59	0	0	12.6392	Water
110259002	6/6/2017	1504	J-131	0	0	4.43974	Water
110259002	6/6/2017	1504	K-40	0	0	102.876	Water
110259002	6/6/2017	1504	LA-140	0	0	6.92052	Water
110259002	6/6/2017	1504	MN-54	0	0	6.10737	Water
110259002	6/6/2017	1504	NB-95	0	0	3.19732	Water
110259002	6/6/2017	1504	RA-226	0	0	0	Water
110259002	6/6/2017	1504	RA-228	0	0	0	Water
110259002	6/6/2017	1504	ZN-65	0	0	10.252	Water
110259002	6/6/2017	1504	ZR-95	0	0	5.12512	Water
110801002	7/6/2017	1504	BA-140	0	0	22.2573	Water
110801002	7/6/2017	1504	BE-7	0	0	51.5484	Water
110801002	7/6/2017	1504	CO-58	0	0	2.3622	Water
110801002	7/6/2017	1504	CO-60	0	0	6.12001	Water
110801002	7/6/2017	1504	CS-134	0	0	4.49851	Water
110801002	7/6/2017	1504	CS-137	0	0	7.71284	Water
110801002	7/6/2017	1504	FE-59	0	0	4.24569	Water
110868002	7/6/2017	1504	H3	1540	189	1690	Water
110801002	7/6/2017	1504	J-131	0	0	7.83819	Water
110801002	7/6/2017	1504	K-40	0	0	97.5737	Water
110801002	7/6/2017	1504	LA-140	0	0	6.87997	Water
110801002	7/6/2017	1504	MN-54	0	0	5.34351	Water
110801002	7/6/2017	1504	NB-95	0	0	4.74667	Water

110801002	7/6/2017	1504	RA-226	0	0	0	Water
110801002	7/6/2017	1504	RA-228	0	0	0	Water
110801002	7/6/2017	1504	ZN-65	0	0	11.1279	Water
110801002	7/6/2017	1504	ZR-95	0	0	6.95704	Water
111396002	8/8/2017	1504	BA-140	0	0	23.0988	Water
111396002	8/8/2017	1504	BE-7	0	0	57.4317	Water
111396002	8/8/2017	1504	CO-58	0	0	5.9298	Water
111396002	8/8/2017	1504	CO-60	0	0	6.72871	Water
111396002	8/8/2017	1504	CS-134	0	0	3.3242	Water
111396002	8/8/2017	1504	CS-137	0	0	4.01615	Water
111396002	8/8/2017	1504	FE-59	0	0	9.95978	Water
111396002	8/8/2017	1504	J-131	0	0	6.4177	Water
111396002	8/8/2017	1504	K-40	0	0	105.981	Water
111396002	8/8/2017	1504	LA-140	0	0	7.46789	Water
111396002	8/8/2017	1504	MN-54	0	0	4.42853	Water
111396002	8/8/2017	1504	NB-95	0	0	3.08382	Water
111396002	8/8/2017	1504	RA-226	0	0	0	Water
111396002	8/8/2017	1504	RA-228	0	0	0	Water
111396002	8/8/2017	1504	ZN-65	0	0	6.69415	Water
111396002	8/8/2017	1504	ZR-95	0	0	5.98783	Water
111885002	9/6/2017	1504	BA-140	0	0	13.5658	Water
111885002	9/6/2017	1504	BE-7	0	0	61.9653	Water
111885002	9/6/2017	1504	CO-58	0	0	5.7811	Water
111885002	9/6/2017	1504	CO-60	0	0	3.9304	Water
111885002	9/6/2017	1504	CS-134	0	0	4.65395	Water
111885002	9/6/2017	1504	CS-137	0	0	6.08219	Water
111885002	9/6/2017	1504	FE-59	0	0	11.7441	Water
111885002	9/6/2017	1504	J-131	0	0	7.55576	Water
111885002	9/6/2017	1504	K-40	0	0	127.955	Water
111885002	9/6/2017	1504	LA-140	0	0	5.0273	Water
111885002	9/6/2017	1504	MN-54	0	0	5.62027	Water
111885002	9/6/2017	1504	NB-95	0	0	3.80918	Water
111885002	9/6/2017	1504	RA-226	0	0	0	Water
111885002	9/6/2017	1504	RA-228	0	0	0	Water
111885002	9/6/2017	1504	ZN-65	0	0	8.90228	Water
111885002	9/6/2017	1504	ZR-95	0	0	7.35163	Water
112430002	10/3/2017	1504	BA-140	0	0	32.6552	Water
112430002	10/3/2017	1504	BE-7	0	0	31.442	Water
112430002	10/3/2017	1504	CO-58	0	0	5.53583	Water
112430002	10/3/2017	1504	CO-60	0	0	8.41048	Water
112430002	10/3/2017	1504	CS-134	0	0	7.16264	Water
112430002	10/3/2017	1504	CS-137	0	0	4.20509	Water
112430002	10/3/2017	1504	FE-59	0	0	7.63393	Water
112454002	10/3/2017	1504	H3	3880	210	4060	Water
112430002	10/3/2017	1504	J-131	0	0	6.89447	Water
112430002	10/3/2017	1504	K-40	0	0	145.749	Water
112430002	10/3/2017	1504	LA-140	0	0	8.30801	Water

112430002	10/3/2017	1504	MN-54	0	0	8.97883	Water
112430002	10/3/2017	1504	NB-95	0	0	3.19088	Water
112430002	10/3/2017	1504	RA-226	0	0	0	Water
112430002	10/3/2017	1504	RA-228	0	0	0	Water
112430002	10/3/2017	1504	ZN-65	0	0	13.0701	Water
112430002	10/3/2017	1504	ZR-95	0	0	10.546	Water
112994002	11/7/2017	1504	BA-140	0	0	27.9207	Water
112994002	11/7/2017	1504	BE-7	0	0	22.4853	Water
112994002	11/7/2017	1504	CO-58	0	0	6.94583	Water
112994002	11/7/2017	1504	CO-60	0	0	2.23438	Water
112994002	11/7/2017	1504	CS-134	0	0	4.27576	Water
112994002	11/7/2017	1504	CS-137	0	0	4.67828	Water
112994002	11/7/2017	1504	FE-59	0	0	6.81728	Water
112994002	11/7/2017	1504	J-131	0	0	6.45334	Water
112994002	11/7/2017	1504	K-40	0	0	124.131	Water
112994002	11/7/2017	1504	LA-140	0	0	3.78464	Water
112994002	11/7/2017	1504	MN-54	0	0	6.00232	Water
112994002	11/7/2017	1504	NB-95	0	0	2.75556	Water
112994002	11/7/2017	1504	RA-226	0	0	0	Water
112994002	11/7/2017	1504	RA-228	0	0	0	Water
112994002	11/7/2017	1504	ZN-65	0	0	6.91211	Water
112994002	11/7/2017	1504	ZR-95	0	0	7.00653	Water
113342002	12/5/2017	1504	BA-140	0	0	12.5108	Water
113342002	12/5/2017	1504	BE-7	0	0	39.2312	Water
113342002	12/5/2017	1504	CO-58	0	0	8.19513	Water
113342002	12/5/2017	1504	CO-60	0	0	3.52471	Water
113342002	12/5/2017	1504	CS-134	0	0	5.1154	Water
113342002	12/5/2017	1504	CS-137	0	0	8.13602	Water
113342002	12/5/2017	1504	FE-59	0	0	15.098	Water
113342002	12/5/2017	1504	J-131	0	0	8.59517	Water
113342002	12/5/2017	1504	K-40	0	0	132.746	Water
113342002	12/5/2017	1504	LA-140	0	0	6.23208	Water
113342002	12/5/2017	1504	MN-54	0	0	5.30998	Water
113342002	12/5/2017	1504	NB-95	0	0	4.46029	Water
113342002	12/5/2017	1504	RA-226	0	0	0	Water
113342002	12/5/2017	1504	RA-228	0	0	0	Water
113342002	12/5/2017	1504	ZN-65	0	0	7.77371	Water
113342002	12/5/2017	1504	ZR-95	0	0	11.0907	Water
107711001	1/4/2017	1512	BA-140	0	0	26.113	Water
107711001	1/4/2017	1512	BE-7	0	0	60.9046	Water
107711001	1/4/2017	1512	CO-58	0	0	3.5814	Water
107711001	1/4/2017	1512	CO-60	0	0	4.34686	Water
107711001	1/4/2017	1512	CS-134	0	0	4.232	Water
107711001	1/4/2017	1512	CS-137	0	0	6.58963	Water
107711001	1/4/2017	1512	FE-59	0	0	6.93035	Water
107752001	1/4/2017	1512	H3	50.9	180	202	Water
107711001	1/4/2017	1512	J-131	0	0	8.22435	Water

107711001	1/4/2017	1512	K-40	0	0	132.106	Water
107711001	1/4/2017	1512	LA-140	0	0	8.86455	Water
107711001	1/4/2017	1512	MN-54	0	0	3.58214	Water
107711001	1/4/2017	1512	NB-95	0	0	10.1508	Water
107711001	1/4/2017	1512	RA-226	0	0	0	Water
107711001	1/4/2017	1512	RA-228	0	0	0	Water
107711001	1/4/2017	1512	ZN-65	0	0	8.75679	Water
107711001	1/4/2017	1512	ZR-95	0	0	6.16063	Water
108328001	2/7/2017	1512	BA-140	0	0	25.2884	Water
108328001	2/7/2017	1512	BE-7	0	0	62.6534	Water
108328001	2/7/2017	1512	CO-58	0	0	4.10581	Water
108328001	2/7/2017	1512	CO-60	0	0	10.7228	Water
108328001	2/7/2017	1512	CS-134	0	0	4.01395	Water
108328001	2/7/2017	1512	CS-137	0	0	7.00483	Water
108328001	2/7/2017	1512	FE-59	0	0	9.44681	Water
108328001	2/7/2017	1512	J-131	0	0	9.80219	Water
108328001	2/7/2017	1512	K-40	0	0	144.395	Water
108328001	2/7/2017	1512	LA-140	0	0	7.52596	Water
108328001	2/7/2017	1512	MN-54	0	0	3.61674	Water
108328001	2/7/2017	1512	NB-95	0	0	3.43747	Water
108328001	2/7/2017	1512	RA-226	0	0	0	Water
108328001	2/7/2017	1512	RA-228	0	0	0	Water
108328001	2/7/2017	1512	ZN-65	0	0	13.0455	Water
108328001	2/7/2017	1512	ZR-95	0	0	7.00466	Water
108719001	3/7/2017	1512	BA-140	0	0	11.5901	Water
108719001	3/7/2017	1512	BE-7	0	0	58.8709	Water
108719001	3/7/2017	1512	CO-58	0	0	5.05822	Water
108719001	3/7/2017	1512	CO-60	0	0	3.70576	Water
108719001	3/7/2017	1512	CS-134	0	0	5.96898	Water
108719001	3/7/2017	1512	CS-137	0	0	6.9416	Water
108719001	3/7/2017	1512	FE-59	0	0	11.4964	Water
108719001	3/7/2017	1512	J-131	0	0	6.29162	Water
108719001	3/7/2017	1512	K-40	0	0	84.1737	Water
108719001	3/7/2017	1512	LA-140	0	0	4.25742	Water
108719001	3/7/2017	1512	MN-54	0	0	5.53597	Water
108719001	3/7/2017	1512	NB-95	0	0	6.66807	Water
108719001	3/7/2017	1512	RA-226	0	0	0	Water
108719001	3/7/2017	1512	RA-228	0	0	0	Water
108719001	3/7/2017	1512	ZN-65	0	0	10.476	Water
108719001	3/7/2017	1512	ZR-95	0	0	9.82917	Water
109217001	4/4/2017	1512	BA-140	0	0	20.0055	Water
109217001	4/4/2017	1512	BE-7	0	0	26.9118	Water
109217001	4/4/2017	1512	CO-58	0	0	6.74824	Water
109217001	4/4/2017	1512	CO-60	0	0	4.25603	Water
109217001	4/4/2017	1512	CS-134	0	0	6.511	Water
109217001	4/4/2017	1512	CS-137	0	0	3.36409	Water
109217001	4/4/2017	1512	FE-59	0	0	9.58444	Water

109239001	4/4/2017	1512	H3	140	177	289	Water
109217001	4/4/2017	1512	J-131	0	0	7.84525	Water
109217001	4/4/2017	1512	K-40	0	0	137.637	Water
109217001	4/4/2017	1512	LA-140	0	0	6.68792	Water
109217001	4/4/2017	1512	MN-54	0	0	5.08182	Water
109217001	4/4/2017	1512	NB-95	0	0	7.14729	Water
109217001	4/4/2017	1512	RA-226	0	0	0	Water
109217001	4/4/2017	1512	RA-228	0	0	0	Water
109217001	4/4/2017	1512	ZN-65	0	0	11.8443	Water
109217001	4/4/2017	1512	ZR-95	0	0	13.8825	Water
109661001	5/2/2017	1512	BA-140	0	0	35.5491	Water
109661001	5/2/2017	1512	BE-7	0	0	36.0343	Water
109661001	5/2/2017	1512	CO-58	0	0	7.41124	Water
109661001	5/2/2017	1512	CO-60	0	0	6.08031	Water
109661001	5/2/2017	1512	CS-134	0	0	5.19923	Water
109661001	5/2/2017	1512	CS-137	0	0	5.04769	Water
109661001	5/2/2017	1512	FE-59	0	0	22.3164	Water
109661001	5/2/2017	1512	J-131	0	0	9.35152	Water
109661001	5/2/2017	1512	K-40	0	0	161.881	Water
109661001	5/2/2017	1512	LA-140	0	0	11.1362	Water
109661001	5/2/2017	1512	MN-54	0	0	10.4932	Water
109661001	5/2/2017	1512	NB-95	0	0	4.29987	Water
109661001	5/2/2017	1512	RA-226	0	0	0	Water
109661001	5/2/2017	1512	RA-228	0	0	0	Water
109661001	5/2/2017	1512	ZN-65	0	0	19.0786	Water
109661001	5/2/2017	1512	ZR-95	0	0	7.05587	Water
110259001	6/6/2017	1512	BA-140	0	0	28.7031	Water
110259001	6/6/2017	1512	BE-7	0	0	48.0677	Water
110259001	6/6/2017	1512	CO-58	0	0	3.0865	Water
110259001	6/6/2017	1512	CO-60	0	0	6.10944	Water
110259001	6/6/2017	1512	CS-134	0	0	4.95186	Water
110259001	6/6/2017	1512	CS-137	0	0	7.19135	Water
110259001	6/6/2017	1512	FE-59	0	0	13.9838	Water
110259001	6/6/2017	1512	J-131	0	0	5.74025	Water
110259001	6/6/2017	1512	K-40	0	0	116.944	Water
110259001	6/6/2017	1512	LA-140	0	0	4.61468	Water
110259001	6/6/2017	1512	MN-54	0	0	5.41438	Water
110259001	6/6/2017	1512	NB-95	0	0	5.35453	Water
110259001	6/6/2017	1512	RA-226	0	0	0	Water
110259001	6/6/2017	1512	RA-228	0	0	0	Water
110259001	6/6/2017	1512	ZN-65	0	0	8.32661	Water
110259001	6/6/2017	1512	ZR-95	0	0	11.7201	Water
110801001	7/6/2017	1512	BA-140	0	0	34.6865	Water
110801001	7/6/2017	1512	BE-7	0	0	65.9589	Water
110801001	7/6/2017	1512	CO-58	0	0	6.59534	Water
110801001	7/6/2017	1512	CO-60	0	0	2.65623	Water
110801001	7/6/2017	1512	CS-134	0	0	4.15943	Water

110801001	7/6/2017	1512	CS-137	0	0	6.11902	Water
110801001	7/6/2017	1512	FE-59	0	0	9.24699	Water
110868001	7/6/2017	1512	H3	53.7	169	196	Water
110801001	7/6/2017	1512	J-131	0	0	6.38208	Water
110801001	7/6/2017	1512	K-40	0	0	124.666	Water
110801001	7/6/2017	1512	LA-140	0	0	4.04365	Water
110801001	7/6/2017	1512	MN-54	0	0	4.11098	Water
110801001	7/6/2017	1512	NB-95	0	0	3.89936	Water
110801001	7/6/2017	1512	RA-226	0	0	0	Water
110801001	7/6/2017	1512	RA-228	0	0	0	Water
110801001	7/6/2017	1512	ZN-65	0	0	13.5884	Water
110801001	7/6/2017	1512	ZR-95	0	0	10.6813	Water
111396001	8/8/2017	1512	BA-140	0	0	15.7697	Water
111396001	8/8/2017	1512	BE-7	0	0	45.7878	Water
111396001	8/8/2017	1512	CO-58	0	0	4.81968	Water
111396001	8/8/2017	1512	CO-60	0	0	4.2559	Water
111396001	8/8/2017	1512	CS-134	0	0	3.63876	Water
111396001	8/8/2017	1512	CS-137	0	0	3.36407	Water
111396001	8/8/2017	1512	FE-59	0	0	8.47356	Water
111396001	8/8/2017	1512	J-131	0	0	8.64223	Water
111396001	8/8/2017	1512	K-40	0	0	126.882	Water
111396001	8/8/2017	1512	LA-140	0	0	5.81188	Water
111396001	8/8/2017	1512	MN-54	0	0	7.94244	Water
111396001	8/8/2017	1512	NB-95	0	0	6.16938	Water
111396001	8/8/2017	1512	RA-226	0	0	0	Water
111396001	8/8/2017	1512	RA-228	0	0	0	Water
111396001	8/8/2017	1512	ZN-65	0	0	13.8982	Water
111396001	8/8/2017	1512	ZR-95	0	0	10.9108	Water
111885001	9/6/2017	1512	BA-140	0	0	23.6013	Water
111885001	9/6/2017	1512	BE-7	0	0	56.1887	Water
111885001	9/6/2017	1512	CO-58	0	0	4.06979	Water
111885001	9/6/2017	1512	CO-60	0	0	8.16269	Water
111885001	9/6/2017	1512	CS-134	0	0	4.76336	Water
111885001	9/6/2017	1512	CS-137	0	0	6.94553	Water
111885001	9/6/2017	1512	FE-59	0	0	6.81956	Water
111885001	9/6/2017	1512	J-131	0	0	6.82326	Water
111885001	9/6/2017	1512	K-40	0	0	95.0171	Water
111885001	9/6/2017	1512	LA-140	0	0	3.78912	Water
111885001	9/6/2017	1512	MN-54	0	0	3.24671	Water
111885001	9/6/2017	1512	NB-95	0	0	5.15807	Water
111885001	9/6/2017	1512	RA-226	0	0	0	Water
111885001	9/6/2017	1512	RA-228	0	0	0	Water
111885001	9/6/2017	1512	ZN-65	0	0	11.24	Water
111885001	9/6/2017	1512	ZR-95	0	0	8.55822	Water
112430001	10/3/2017	1512	BA-140	0	0	23.3508	Water
112430001	10/3/2017	1512	BE-7	0	0	43.4258	Water
112430001	10/3/2017	1512	CO-58	0	0	5.46739	Water

112430001	10/3/2017	1512	CO-60	0	0	3.22616	Water
112430001	10/3/2017	1512	CS-134	0	0	3.49798	Water
112430001	10/3/2017	1512	CS-137	0	0	5.37927	Water
112430001	10/3/2017	1512	FE-59	0	0	10.1176	Water
112454001	10/3/2017	1512	H3	187	163	324	Water
112430001	10/3/2017	1512	J-131	0	0	6.36356	Water
112430001	10/3/2017	1512	K-40	0	0	120.221	Water
112430001	10/3/2017	1512	LA-140	0	0	5.95177	Water
112430001	10/3/2017	1512	MN-54	0	0	3.93522	Water
112430001	10/3/2017	1512	NB-95	0	0	4.30275	Water
112430001	10/3/2017	1512	RA-226	0	0	0	Water
112430001	10/3/2017	1512	RA-228	0	0	0	Water
112430001	10/3/2017	1512	ZN-65	0	0	9.24289	Water
112430001	10/3/2017	1512	ZR-95	0	0	12.9067	Water
112994001	11/7/2017	1512	BA-140	0	0	19.4739	Water
112994001	11/7/2017	1512	BE-7	0	0	63.3042	Water
112994001	11/7/2017	1512	CO-58	0	0	4.89731	Water
112994001	11/7/2017	1512	CO-60	0	0	6.47293	Water
112994001	11/7/2017	1512	CS-134	0	0	3.3588	Water
112994001	11/7/2017	1512	CS-137	0	0	7.41356	Water
112994001	11/7/2017	1512	FE-59	0	0	6.19954	Water
112994001	11/7/2017	1512	J-131	0	0	3.82606	Water
112994001	11/7/2017	1512	K-40	0	0	117.051	Water
112994001	11/7/2017	1512	LA-140	0	0	3.04088	Water
112994001	11/7/2017	1512	MN-54	0	0	4.48545	Water
112994001	11/7/2017	1512	NB-95	0	0	5.53435	Water
112994001	11/7/2017	1512	RA-226	0	0	0	Water
112994001	11/7/2017	1512	RA-228	0	0	0	Water
112994001	11/7/2017	1512	ZN-65	0	0	16.2462	Water
112994001	11/7/2017	1512	ZR-95	0	0	5.21874	Water
113342001	12/5/2017	1512	BA-140	0	0	21.9658	Water
113342001	12/5/2017	1512	BE-7	0	0	38.0814	Water
113342001	12/5/2017	1512	CO-58	0	0	4.34664	Water
113342001	12/5/2017	1512	CO-60	0	0	2.81954	Water
113342001	12/5/2017	1512	CS-134	0	0	6.14873	Water
113342001	12/5/2017	1512	CS-137	0	0	3.39085	Water
113342001	12/5/2017	1512	FE-59	0	0	8.4161	Water
113342001	12/5/2017	1512	J-131	0	0	7.08081	Water
113342001	12/5/2017	1512	K-40	0	0	108.354	Water
113342001	12/5/2017	1512	LA-140	0	0	2.99367	Water
113342001	12/5/2017	1512	MN-54	0	0	4.73238	Water
113342001	12/5/2017	1512	NB-95	0	0	2.52302	Water
113342001	12/5/2017	1512	RA-226	0	0	0	Water
113342001	12/5/2017	1512	RA-228	0	0	0	Water
113342001	12/5/2017	1512	ZN-65	0	0	11.8335	Water
113342001	12/5/2017	1512	ZR-95	0	0	8.94033	Water
107713002	1/3/2017	FAUC	BA-140	0	0	1.9984	Water

107713002	1/3/2017	FAUC	BE-7	0	0	4.84842	Water
107713002	1/3/2017	FAUC	CO-58	0	0	.499182	Water
107713002	1/3/2017	FAUC	CO-60	0	0	.308554	Water
107713002	1/3/2017	FAUC	CS-134	0	0	.311749	Water
107713002	1/3/2017	FAUC	CS-137	0	0	.484113	Water
107713002	1/3/2017	FAUC	FE-59	0	0	.503816	Water
107712002	1/3/2017	FAUC	GROSSBETA	.5167	1.157	1.488	Water
107712002	1/3/2017	FAUC	GROSSBETA	.5167	1.157	1.488	Water
107712002	1/3/2017	FAUC	GROSSBETA	.5167	1.157	1.488	Water
107712002	1/3/2017	FAUC	GROSSBETA	.5167	1.157	1.488	Water
107753006	1/3/2017	FAUC	H3	95.4	182	248	Water
107713002	1/3/2017	FAUC	J-131	0	0	.621295	Water
107713002	1/3/2017	FAUC	K-40	0	0	11.6414	Water
107713002	1/3/2017	FAUC	LA-140	0	0	.414669	Water
107713002	1/3/2017	FAUC	MN-54	0	0	.408794	Water
107713002	1/3/2017	FAUC	NB-95	0	0	.712412	Water
107713002	1/3/2017	FAUC	RA-226	0	0	0	Water
107713002	1/3/2017	FAUC	RA-228	0	0	0	Water
107713002	1/3/2017	FAUC	ZN-65	0	0	1.05789	Water
107713002	1/3/2017	FAUC	ZR-95	0	0	.536891	Water
108330002	2/7/2017	FAUC	BA-140	0	0	2.01024	Water
108330002	2/7/2017	FAUC	BE-7	0	0	4.72864	Water
108330002	2/7/2017	FAUC	CO-58	0	0	.584951	Water
108330002	2/7/2017	FAUC	CO-60	0	0	.368062	Water
108330002	2/7/2017	FAUC	CS-134	0	0	.386946	Water
108330002	2/7/2017	FAUC	CS-137	0	0	.561189	Water
108330002	2/7/2017	FAUC	FE-59	0	0	.674299	Water
108329002	2/7/2017	FAUC	GROSSBETA	.3794	1.182	1.371	Water
108329002	2/7/2017	FAUC	GROSSBETA	.3794	1.182	1.371	Water
108329002	2/7/2017	FAUC	GROSSBETA	.3794	1.182	1.371	Water
108329002	2/7/2017	FAUC	GROSSBETA	.3794	1.182	1.371	Water
108330002	2/7/2017	FAUC	J-131	0	0	.799655	Water
108330002	2/7/2017	FAUC	K-40	0	0	12.0547	Water
108330002	2/7/2017	FAUC	LA-140	0	0	.556837	Water
108330002	2/7/2017	FAUC	MN-54	0	0	.394904	Water
108330002	2/7/2017	FAUC	NB-95	0	0	2.197	Water
108330002	2/7/2017	FAUC	RA-226	0	0	0	Water
108330002	2/7/2017	FAUC	RA-228	0	0	0	Water
108330002	2/7/2017	FAUC	ZN-65	0	0	.551445	Water
108330002	2/7/2017	FAUC	ZR-95	0	0	.891081	Water
108721002	3/7/2017	FAUC	BA-140	0	0	1.57017	Water
108721002	3/7/2017	FAUC	BE-7	0	0	4.83817	Water
108721002	3/7/2017	FAUC	CO-58	0	0	.473119	Water
108721002	3/7/2017	FAUC	CO-60	0	0	.301753	Water
108721002	3/7/2017	FAUC	CS-134	0	0	.427554	Water
108721002	3/7/2017	FAUC	CS-137	0	0	.32126	Water
108721002	3/7/2017	FAUC	FE-59	0	0	.909534	Water

108767002	3/7/2017	FAUC	GROSSBETA	1.514	1.294	2.601	Water
108767002	3/7/2017	FAUC	GROSSBETA	1.514	1.294	2.601	Water
108767002	3/7/2017	FAUC	GROSSBETA	1.514	1.294	2.601	Water
108767002	3/7/2017	FAUC	GROSSBETA	1.514	1.294	2.601	Water
108721002	3/7/2017	FAUC	J-131	0	0	.765199	Water
108721002	3/7/2017	FAUC	K-40	0	0	10.7168	Water
108721002	3/7/2017	FAUC	LA-140	0	0	.381548	Water
108721002	3/7/2017	FAUC	MN-54	0	0	.526189	Water
108721002	3/7/2017	FAUC	NB-95	0	0	.563275	Water
108721002	3/7/2017	FAUC	RA-226	0	0	0	Water
108721002	3/7/2017	FAUC	RA-228	0	0	0	Water
108721002	3/7/2017	FAUC	ZN-65	0	0	1.10109	Water
108721002	3/7/2017	FAUC	ZR-95	0	0	.445654	Water
109215002	4/3/2017	FAUC	BA-140	0	0	3.07587	Water
109215002	4/3/2017	FAUC	BE-7	0	0	3.70228	Water
109215002	4/3/2017	FAUC	CO-58	0	0	.59771	Water
109215002	4/3/2017	FAUC	CO-60	0	0	.747046	Water
109215002	4/3/2017	FAUC	CS-134	0	0	.479865	Water
109215002	4/3/2017	FAUC	CS-137	0	0	.691213	Water
109215002	4/3/2017	FAUC	FE-59	0	0	1.21344	Water
109214002	4/3/2017	FAUC	GROSSBETA	4.928	1.636	6.301	Water
109214002	4/3/2017	FAUC	GROSSBETA	4.928	1.636	6.301	Water
109214002	4/3/2017	FAUC	GROSSBETA	4.928	1.636	6.301	Water
109214002	4/3/2017	FAUC	GROSSBETA	4.928	1.636	6.301	Water
109240002	4/3/2017	FAUC	H3	348	178	497	Water
109215002	4/3/2017	FAUC	J-131	0	0	.863144	Water
109215002	4/3/2017	FAUC	K-40	0	0	11.2208	Water
109215002	4/3/2017	FAUC	LA-140	0	0	.47825	Water
109215002	4/3/2017	FAUC	MN-54	0	0	.537285	Water
109215002	4/3/2017	FAUC	NB-95	0	0	.722078	Water
109215002	4/3/2017	FAUC	RA-226	0	0	0	Water
109215002	4/3/2017	FAUC	RA-228	0	0	0	Water
109215002	4/3/2017	FAUC	ZN-65	0	0	1.42958	Water
109215002	4/3/2017	FAUC	ZR-95	0	0	.704155	Water
109660002	5/2/2017	FAUC	BA-140	0	0	2.25934	Water
109660002	5/2/2017	FAUC	BE-7	0	0	4.41371	Water
109660002	5/2/2017	FAUC	CO-58	0	0	.423598	Water
109660002	5/2/2017	FAUC	CO-60	0	0	.490164	Water
109660002	5/2/2017	FAUC	CS-134	0	0	.346759	Water
109660002	5/2/2017	FAUC	CS-137	0	0	.561784	Water
109660002	5/2/2017	FAUC	FE-59	0	0	.644969	Water
109659002	5/2/2017	FAUC	GROSSBETA	1.733	1.285	2.812	Water
109659002	5/2/2017	FAUC	GROSSBETA	1.733	1.285	2.812	Water
109659002	5/2/2017	FAUC	GROSSBETA	1.733	1.285	2.812	Water
109659002	5/2/2017	FAUC	GROSSBETA	1.733	1.285	2.812	Water
109660002	5/2/2017	FAUC	J-131	0	0	.483839	Water
109660002	5/2/2017	FAUC	K-40	0	0	12.0916	Water

109660002	5/2/2017	FAUC	LA-140	0	0	.324849	Water
109660002	5/2/2017	FAUC	MN-54	0	0	.366955	Water
109660002	5/2/2017	FAUC	NB-95	0	0	.453864	Water
109660002	5/2/2017	FAUC	RA-226	0	0	0	Water
109660002	5/2/2017	FAUC	RA-228	0	0	0	Water
109660002	5/2/2017	FAUC	ZN-65	0	0	1.11246	Water
109660002	5/2/2017	FAUC	ZR-95	0	0	.604784	Water
110258002	6/6/2017	FAUC	BA-140	0	0	2.53166	Water
110258002	6/6/2017	FAUC	BE-7	0	0	5.87853	Water
110258002	6/6/2017	FAUC	CO-58	0	0	.474379	Water
110258002	6/6/2017	FAUC	CO-60	0	0	.376625	Water
110258002	6/6/2017	FAUC	CS-134	0	0	.570759	Water
110258002	6/6/2017	FAUC	CS-137	0	0	.401522	Water
110258002	6/6/2017	FAUC	FE-59	0	0	.983618	Water
110257002	6/6/2017	FAUC	GROSSBETA	3.224	1.549	4.524	Water
110257002	6/6/2017	FAUC	GROSSBETA	3.224	1.549	4.524	Water
110257002	6/6/2017	FAUC	GROSSBETA	3.224	1.549	4.524	Water
110257002	6/6/2017	FAUC	GROSSBETA	3.224	1.549	4.524	Water
110258002	6/6/2017	FAUC	J-131	0	0	.480986	Water
110258002	6/6/2017	FAUC	K-40	0	0	12.2379	Water
110258002	6/6/2017	FAUC	LA-140	0	0	.494016	Water
110258002	6/6/2017	FAUC	MN-54	0	0	.483551	Water
110258002	6/6/2017	FAUC	NB-95	0	0	.688035	Water
110258002	6/6/2017	FAUC	RA-226	0	0	0	Water
110258002	6/6/2017	FAUC	RA-228	0	0	0	Water
110258002	6/6/2017	FAUC	ZN-65	0	0	1.09747	Water
110258002	6/6/2017	FAUC	ZR-95	0	0	1.02835	Water
110800002	7/5/2017	FAUC	BA-140	0	0	1.84338	Water
110800002	7/5/2017	FAUC	BE-7	0	0	3.06592	Water
110800002	7/5/2017	FAUC	CO-58	0	0	.391396	Water
110800002	7/5/2017	FAUC	CO-60	0	0	.556808	Water
110800002	7/5/2017	FAUC	CS-134	0	0	.480207	Water
110800002	7/5/2017	FAUC	CS-137	0	0	.413388	Water
110800002	7/5/2017	FAUC	FE-59	0	0	.54554	Water
110798002	7/5/2017	FAUC	GROSSBETA	2.503	1.459	3.728	Water
110798002	7/5/2017	FAUC	GROSSBETA	2.503	1.459	3.728	Water
110798002	7/5/2017	FAUC	GROSSBETA	2.503	1.459	3.728	Water
110798002	7/5/2017	FAUC	GROSSBETA	2.503	1.459	3.728	Water
110869002	7/5/2017	FAUC	H3	-45.7	167	140	Water
110800002	7/5/2017	FAUC	J-131	0	0	.462332	Water
110800002	7/5/2017	FAUC	K-40	0	0	11.78	Water
110800002	7/5/2017	FAUC	LA-140	0	0	.41516	Water
110800002	7/5/2017	FAUC	MN-54	0	0	.355063	Water
110800002	7/5/2017	FAUC	NB-95	0	0	.685825	Water
110800002	7/5/2017	FAUC	RA-226	0	0	0	Water
110800002	7/5/2017	FAUC	RA-228	0	0	0	Water
110800002	7/5/2017	FAUC	ZN-65	0	0	1.29229	Water

110800002	7/5/2017	FAUC	ZR-95	0	0	.680331	Water
111395002	8/8/2017	FAUC	BA-140	0	0	1.96098	Water
111395002	8/8/2017	FAUC	BE-7	0	0	4.42503	Water
111395002	8/8/2017	FAUC	CO-58	0	0	.368896	Water
111395002	8/8/2017	FAUC	CO-60	0	0	.516012	Water
111395002	8/8/2017	FAUC	CS-134	0	0	.376465	Water
111395002	8/8/2017	FAUC	CS-137	0	0	.381526	Water
111395002	8/8/2017	FAUC	FE-59	0	0	.594236	Water
111394002	8/8/2017	FAUC	GROSSBETA	2.035	1.504	3.297	Water
111394002	8/8/2017	FAUC	GROSSBETA	2.035	1.504	3.297	Water
111394002	8/8/2017	FAUC	GROSSBETA	2.035	1.504	3.297	Water
111394002	8/8/2017	FAUC	GROSSBETA	2.035	1.504	3.297	Water
111395002	8/8/2017	FAUC	J-131	0	0	.594026	Water
111395002	8/8/2017	FAUC	K-40	0	0	11.2446	Water
111395002	8/8/2017	FAUC	LA-140	0	0	.403666	Water
111395002	8/8/2017	FAUC	MN-54	0	0	.277308	Water
111395002	8/8/2017	FAUC	NB-95	0	0	.421074	Water
111395002	8/8/2017	FAUC	RA-226	0	0	0	Water
111395002	8/8/2017	FAUC	RA-228	0	0	0	Water
111395002	8/8/2017	FAUC	ZN-65	0	0	1.08586	Water
111395002	8/8/2017	FAUC	ZR-95	0	0	1.01281	Water
111905002	9/6/2017	FAUC	BA-140	0	0	2.13184	Water
111905002	9/6/2017	FAUC	BE-7	0	0	2.55747	Water
111905002	9/6/2017	FAUC	CO-58	0	0	.244566	Water
111905002	9/6/2017	FAUC	CO-60	0	0	.411774	Water
111905002	9/6/2017	FAUC	CS-134	0	0	.434917	Water
111905002	9/6/2017	FAUC	CS-137	0	0	.39051	Water
111905002	9/6/2017	FAUC	FE-59	0	0	.526104	Water
111907002	9/6/2017	FAUC	GROSSBETA	1.994	1.363	3.138	Water
111907002	9/6/2017	FAUC	GROSSBETA	1.994	1.363	3.138	Water
111907002	9/6/2017	FAUC	GROSSBETA	1.994	1.363	3.138	Water
111907002	9/6/2017	FAUC	GROSSBETA	1.994	1.363	3.138	Water
111905002	9/6/2017	FAUC	J-131	0	0	.578581	Water
111905002	9/6/2017	FAUC	K-40	0	0	9.81378	Water
111905002	9/6/2017	FAUC	LA-140	0	0	.534776	Water
111905002	9/6/2017	FAUC	MN-54	0	0	.420161	Water
111905002	9/6/2017	FAUC	NB-95	0	0	1.082	Water
111905002	9/6/2017	FAUC	RA-226	0	0	0	Water
111905002	9/6/2017	FAUC	RA-228	0	0	0	Water
111905002	9/6/2017	FAUC	ZN-65	0	0	.61112	Water
111905002	9/6/2017	FAUC	ZR-95	0	0	.714477	Water
112429002	10/2/2017	FAUC	BA-140	0	0	2.38196	Water
112429002	10/2/2017	FAUC	BE-7	0	0	4.24895	Water
112429002	10/2/2017	FAUC	CO-58	0	0	.277829	Water
112429002	10/2/2017	FAUC	CO-60	0	0	.516082	Water
112429002	10/2/2017	FAUC	CS-134	0	0	.379648	Water
112429002	10/2/2017	FAUC	CS-137	0	0	.343271	Water

112429002	10/2/2017	FAUC	FE-59	0	0	.95066	Water
112428002	10/2/2017	FAUC	GROSSBETA	1.021	1.588	2.354	Water
112428002	10/2/2017	FAUC	GROSSBETA	1.021	1.588	2.354	Water
112428002	10/2/2017	FAUC	GROSSBETA	1.021	1.588	2.354	Water
112428002	10/2/2017	FAUC	GROSSBETA	1.021	1.588	2.354	Water
112455002	10/2/2017	FAUC	H3	236	179	387	Water
112429002	10/2/2017	FAUC	J-131	0	0	.471127	Water
112429002	10/2/2017	FAUC	K-40	0	0	11.7556	Water
112429002	10/2/2017	FAUC	LA-140	0	0	.37767	Water
112429002	10/2/2017	FAUC	MN-54	0	0	.548657	Water
112429002	10/2/2017	FAUC	NB-95	0	0	.660072	Water
112429002	10/2/2017	FAUC	RA-226	0	0	0	Water
112429002	10/2/2017	FAUC	RA-228	0	0	0	Water
112429002	10/2/2017	FAUC	ZN-65	0	0	1.00544	Water
112429002	10/2/2017	FAUC	ZR-95	0	0	.519373	Water
112992002	11/6/2017	FAUC	BA-140	0	0	2.61647	Water
112992002	11/6/2017	FAUC	BE-7	0	0	3.18896	Water
112992002	11/6/2017	FAUC	CO-58	0	0	.351958	Water
112992002	11/6/2017	FAUC	CO-60	0	0	.321844	Water
112992002	11/6/2017	FAUC	CS-134	0	0	.571157	Water
112992002	11/6/2017	FAUC	CS-137	0	0	.637251	Water
112992002	11/6/2017	FAUC	FE-59	0	0	.76064	Water
112993002	11/6/2017	FAUC	GROSSBETA	1.719	1.546	3.017	Water
112993002	11/6/2017	FAUC	GROSSBETA	1.719	1.546	3.017	Water
112993002	11/6/2017	FAUC	GROSSBETA	1.719	1.546	3.017	Water
112993002	11/6/2017	FAUC	GROSSBETA	1.719	1.546	3.017	Water
112992002	11/6/2017	FAUC	J-131	0	0	.795764	Water
112992002	11/6/2017	FAUC	K-40	0	0	9.80015	Water
112992002	11/6/2017	FAUC	LA-140	0	0	.58524	Water
112992002	11/6/2017	FAUC	MN-54	0	0	.356902	Water
112992002	11/6/2017	FAUC	NB-95	0	0	.766235	Water
112992002	11/6/2017	FAUC	RA-226	0	0	0	Water
112992002	11/6/2017	FAUC	RA-228	0	0	0	Water
112992002	11/6/2017	FAUC	ZN-65	0	0	.912099	Water
112992002	11/6/2017	FAUC	ZR-95	0	0	1.08141	Water
113340002	12/4/2017	FAUC	BA-140	0	0	2.65539	Water
113340002	12/4/2017	FAUC	BE-7	0	0	5.7672	Water
113340002	12/4/2017	FAUC	CO-58	0	0	.295099	Water
113340002	12/4/2017	FAUC	CO-60	0	0	.539805	Water
113340002	12/4/2017	FAUC	CS-134	0	0	.315737	Water
113340002	12/4/2017	FAUC	CS-137	0	0	.386681	Water
113340002	12/4/2017	FAUC	FE-59	0	0	.885647	Water
113341002	12/4/2017	FAUC	GROSSBETA	.576	1.525	1.856	Water
113341002	12/4/2017	FAUC	GROSSBETA	.576	1.525	1.856	Water
113341002	12/4/2017	FAUC	GROSSBETA	.576	1.525	1.856	Water
113341002	12/4/2017	FAUC	GROSSBETA	.576	1.525	1.856	Water
113340002	12/4/2017	FAUC	J-131	0	0	.758649	Water

113340002	12/4/2017	FAUC	K-40	0	0	11.8886	Water
113340002	12/4/2017	FAUC	LA-140	0	0	.387719	Water
113340002	12/4/2017	FAUC	MN-54	0	0	.347471	Water
113340002	12/4/2017	FAUC	NB-95	0	0	.621288	Water
113340002	12/4/2017	FAUC	RA-226	0	0	0	Water
113340002	12/4/2017	FAUC	RA-228	0	0	0	Water
113340002	12/4/2017	FAUC	ZN-65	0	0	.530334	Water
113340002	12/4/2017	FAUC	ZR-95	0	0	.607212	Water
107713006	1/3/2017	FPOR	BA-140	0	0	1.33497	Water
107713006	1/3/2017	FPOR	BE-7	0	0	4.46206	Water
107713006	1/3/2017	FPOR	CO-58	0	0	.408709	Water
107713006	1/3/2017	FPOR	CO-60	0	0	.438636	Water
107713006	1/3/2017	FPOR	CS-134	0	0	.369004	Water
107713006	1/3/2017	FPOR	CS-137	0	0	.504353	Water
107713006	1/3/2017	FPOR	FE-59	0	0	.732626	Water
107712006	1/3/2017	FPOR	GROSSBETA	3.123	1.501	4.382	Water
107712006	1/3/2017	FPOR	GROSSBETA	3.123	1.501	4.382	Water
107712006	1/3/2017	FPOR	GROSSBETA	3.123	1.501	4.382	Water
107712006	1/3/2017	FPOR	GROSSBETA	3.123	1.501	4.382	Water
107753004	1/3/2017	FPOR	H3	323	184	477	Water
107713006	1/3/2017	FPOR	J-131	0	0	.728138	Water
107713006	1/3/2017	FPOR	K-40	0	0	9.62263	Water
107713006	1/3/2017	FPOR	LA-140	0	0	.604604	Water
107713006	1/3/2017	FPOR	MN-54	0	0	.332805	Water
107713006	1/3/2017	FPOR	NB-95	0	0	.549701	Water
107713006	1/3/2017	FPOR	RA-226	0	0	0	Water
107713006	1/3/2017	FPOR	RA-228	0	0	0	Water
107713006	1/3/2017	FPOR	ZN-65	0	0	.70055	Water
107713006	1/3/2017	FPOR	ZR-95	0	0	.546365	Water
108330006	2/6/2017	FPOR	BA-140	0	0	2.965	Water
108330006	2/6/2017	FPOR	BE-7	0	0	4.68	Water
108330006	2/6/2017	FPOR	CO-58	0	0	.47	Water
108330006	2/6/2017	FPOR	CO-60	0	0	.649	Water
108330006	2/6/2017	FPOR	CS-134	0	0	.493	Water
108330006	2/6/2017	FPOR	CS-137	0	0	.559	Water
108330006	2/6/2017	FPOR	FE-59	0	0	.391	Water
108329006	2/6/2017	FPOR	GROSSBETA	2.635	1.477	3.875	Water
108329006	2/6/2017	FPOR	GROSSBETA	2.635	1.477	3.875	Water
108329006	2/6/2017	FPOR	GROSSBETA	2.635	1.477	3.875	Water
108329006	2/6/2017	FPOR	GROSSBETA	2.635	1.477	3.875	Water
108330006	2/6/2017	FPOR	J-131	0	0	.586	Water
108330006	2/6/2017	FPOR	K-40	0	0	11.865	Water
108330006	2/6/2017	FPOR	LA-140	0	0	.95	Water
108330006	2/6/2017	FPOR	MN-54	0	0	.623	Water
108330006	2/6/2017	FPOR	NB-95	0	0	.579	Water
108330006	2/6/2017	FPOR	RA-226	0	0	0	Water
108330006	2/6/2017	FPOR	RA-228	0	0	0	Water

108330006	2/6/2017	FPOR	ZN-65	0	0	.723	Water
108330006	2/6/2017	FPOR	ZR-95	0	0	.955	Water
108721006	3/6/2017	FPOR	BA-140	0	0	2.0172	Water
108721006	3/6/2017	FPOR	BE-7	0	0	2.74503	Water
108721006	3/6/2017	FPOR	CO-58	0	0	.434501	Water
108721006	3/6/2017	FPOR	CO-60	0	0	.454554	Water
108721006	3/6/2017	FPOR	CS-134	0	0	.428551	Water
108721006	3/6/2017	FPOR	CS-137	0	0	.306881	Water
108721006	3/6/2017	FPOR	FE-59	0	0	.48081	Water
108767006	3/6/2017	FPOR	GROSSBETA	3.079	1.503	4.34	Water
108767006	3/6/2017	FPOR	GROSSBETA	3.079	1.503	4.34	Water
108767006	3/6/2017	FPOR	GROSSBETA	3.079	1.503	4.34	Water
108767006	3/6/2017	FPOR	GROSSBETA	3.079	1.503	4.34	Water
108721006	3/6/2017	FPOR	J-131	0	0	.434203	Water
108721006	3/6/2017	FPOR	K-40	0	0	10.8788	Water
108721006	3/6/2017	FPOR	LA-140	0	0	.373015	Water
108721006	3/6/2017	FPOR	MN-54	0	0	.272669	Water
108721006	3/6/2017	FPOR	NB-95	0	0	.510432	Water
108721006	3/6/2017	FPOR	RA-226	0	0	0	Water
108721006	3/6/2017	FPOR	RA-228	0	0	0	Water
108721006	3/6/2017	FPOR	ZN-65	0	0	.684498	Water
108721006	3/6/2017	FPOR	ZR-95	0	0	.646314	Water
109215006	4/3/2017	FPOR	BA-140	0	0	2.18438	Water
109215006	4/3/2017	FPOR	BE-7	0	0	5.22086	Water
109215006	4/3/2017	FPOR	CO-58	0	0	.485405	Water
109215006	4/3/2017	FPOR	CO-60	0	0	.49015	Water
109215006	4/3/2017	FPOR	CS-134	0	0	.290435	Water
109215006	4/3/2017	FPOR	CS-137	0	0	.301979	Water
109215006	4/3/2017	FPOR	FE-59	0	0	.562287	Water
109214006	4/3/2017	FPOR	GROSSBETA	.9712	1.226	2	Water
109214006	4/3/2017	FPOR	GROSSBETA	.9712	1.226	2	Water
109214006	4/3/2017	FPOR	GROSSBETA	.9712	1.226	2	Water
109214006	4/3/2017	FPOR	GROSSBETA	.9712	1.226	2	Water
109240006	4/3/2017	FPOR	H3	833	186	990	Water
109215006	4/3/2017	FPOR	J-131	0	0	.81858	Water
109215006	4/3/2017	FPOR	K-40	0	0	10.0584	Water
109215006	4/3/2017	FPOR	LA-140	0	0	.512347	Water
109215006	4/3/2017	FPOR	MN-54	0	0	.463768	Water
109215006	4/3/2017	FPOR	NB-95	0	0	1.453	Water
109215006	4/3/2017	FPOR	RA-226	0	0	0	Water
109215006	4/3/2017	FPOR	RA-228	0	0	0	Water
109215006	4/3/2017	FPOR	ZN-65	0	0	.941336	Water
109215006	4/3/2017	FPOR	ZR-95	0	0	.465	Water
109660006	5/1/2017	FPOR	BA-140	0	0	2.40353	Water
109660006	5/1/2017	FPOR	BE-7	0	0	4.13497	Water
109660006	5/1/2017	FPOR	CO-58	0	0	.481875	Water
109660006	5/1/2017	FPOR	CO-60	0	0	.3956	Water

109660006	5/1/2017	FPOR	CS-134	0	0	.513076	Water
109660006	5/1/2017	FPOR	CS-137	0	0	.577686	Water
109660006	5/1/2017	FPOR	FE-59	0	0	.952287	Water
109659006	5/1/2017	FPOR	GROSSBETA	4.581	1.629	5.948	Water
109659006	5/1/2017	FPOR	GROSSBETA	4.581	1.629	5.948	Water
109659006	5/1/2017	FPOR	GROSSBETA	4.581	1.629	5.948	Water
109659006	5/1/2017	FPOR	GROSSBETA	4.581	1.629	5.948	Water
109660006	5/1/2017	FPOR	J-131	0	0	.507065	Water
109660006	5/1/2017	FPOR	K-40	0	0	12.0013	Water
109660006	5/1/2017	FPOR	LA-140	0	0	.495131	Water
109660006	5/1/2017	FPOR	MN-54	0	0	.530357	Water
109660006	5/1/2017	FPOR	NB-95	0	0	.415168	Water
109660006	5/1/2017	FPOR	RA-226	0	0	0	Water
109660006	5/1/2017	FPOR	RA-228	0	0	0	Water
109660006	5/1/2017	FPOR	ZN-65	0	0	1.04585	Water
109660006	5/1/2017	FPOR	ZR-95	0	0	.694298	Water
110258006	6/5/2017	FPOR	BA-140	0	0	2.40248	Water
110258006	6/5/2017	FPOR	BE-7	0	0	4.36782	Water
110258006	6/5/2017	FPOR	CO-58	0	0	.469291	Water
110258006	6/5/2017	FPOR	CO-60	0	0	.607208	Water
110258006	6/5/2017	FPOR	CS-134	0	0	.394896	Water
110258006	6/5/2017	FPOR	CS-137	0	0	.511553	Water
110258006	6/5/2017	FPOR	FE-59	0	0	1.0138	Water
110257006	6/5/2017	FPOR	GROSSBETA	2.742	1.508	4.008	Water
110257006	6/5/2017	FPOR	GROSSBETA	2.742	1.508	4.008	Water
110257006	6/5/2017	FPOR	GROSSBETA	2.742	1.508	4.008	Water
110257006	6/5/2017	FPOR	GROSSBETA	2.742	1.508	4.008	Water
110258006	6/5/2017	FPOR	J-131	0	0	.430647	Water
110258006	6/5/2017	FPOR	K-40	0	0	11.5731	Water
110258006	6/5/2017	FPOR	LA-140	0	0	.283781	Water
110258006	6/5/2017	FPOR	MN-54	0	0	.395531	Water
110258006	6/5/2017	FPOR	NB-95	0	0	.700055	Water
110258006	6/5/2017	FPOR	RA-226	0	0	0	Water
110258006	6/5/2017	FPOR	RA-228	0	0	0	Water
110258006	6/5/2017	FPOR	ZN-65	0	0	1.00086	Water
110258006	6/5/2017	FPOR	ZR-95	0	0	.52098	Water
110800006	7/5/2017	FPOR	BA-140	0	0	2.0563	Water
110800006	7/5/2017	FPOR	BE-7	0	0	3.73758	Water
110800006	7/5/2017	FPOR	CO-58	0	0	.353728	Water
110800006	7/5/2017	FPOR	CO-60	0	0	.5507	Water
110800006	7/5/2017	FPOR	CS-134	0	0	.39107	Water
110800006	7/5/2017	FPOR	CS-137	0	0	.457874	Water
110800006	7/5/2017	FPOR	FE-59	0	0	.916248	Water
110798006	7/5/2017	FPOR	GROSSBETA	.8354	1.284	1.913	Water
110798006	7/5/2017	FPOR	GROSSBETA	.8354	1.284	1.913	Water
110798006	7/5/2017	FPOR	GROSSBETA	.8354	1.284	1.913	Water
110798006	7/5/2017	FPOR	GROSSBETA	.8354	1.284	1.913	Water

110869006	7/5/2017	FPOR	H3	188	170	331	Water
110800006	7/5/2017	FPOR	J-131	0	0	.816089	Water
110800006	7/5/2017	FPOR	K-40	0	0	11.3734	Water
110800006	7/5/2017	FPOR	LA-140	0	0	.323817	Water
110800006	7/5/2017	FPOR	MN-54	0	0	.492759	Water
110800006	7/5/2017	FPOR	NB-95	0	0	.616088	Water
110800006	7/5/2017	FPOR	RA-226	0	0	0	Water
110800006	7/5/2017	FPOR	RA-228	0	0	0	Water
110800006	7/5/2017	FPOR	ZN-65	0	0	1.12492	Water
110800006	7/5/2017	FPOR	ZR-95	0	0	.863452	Water
111395006	8/7/2017	FPOR	BA-140	0	0	2.53084	Water
111395006	8/7/2017	FPOR	BE-7	0	0	3.70426	Water
111395006	8/7/2017	FPOR	CO-58	0	0	.281578	Water
111395006	8/7/2017	FPOR	CO-60	0	0	.564713	Water
111395006	8/7/2017	FPOR	CS-134	0	0	.324433	Water
111395006	8/7/2017	FPOR	CS-137	0	0	.497346	Water
111395006	8/7/2017	FPOR	FE-59	0	0	.513441	Water
111394006	8/7/2017	FPOR	GROSSBETA	2.231	1.553	3.534	Water
111394006	8/7/2017	FPOR	GROSSBETA	2.231	1.553	3.534	Water
111394006	8/7/2017	FPOR	GROSSBETA	2.231	1.553	3.534	Water
111394006	8/7/2017	FPOR	GROSSBETA	2.231	1.553	3.534	Water
111395006	8/7/2017	FPOR	J-131	0	0	.510907	Water
111395006	8/7/2017	FPOR	K-40	0	0	11.4738	Water
111395006	8/7/2017	FPOR	LA-140	0	0	.557856	Water
111395006	8/7/2017	FPOR	MN-54	0	0	.287086	Water
111395006	8/7/2017	FPOR	NB-95	0	0	.60915	Water
111395006	8/7/2017	FPOR	RA-226	0	0	0	Water
111395006	8/7/2017	FPOR	RA-228	0	0	0	Water
111395006	8/7/2017	FPOR	ZN-65	0	0	1.07852	Water
111395006	8/7/2017	FPOR	ZR-95	0	0	.893503	Water
111905006	9/5/2017	FPOR	BA-140	0	0	2.07185	Water
111905006	9/5/2017	FPOR	BE-7	0	0	5.20164	Water
111905006	9/5/2017	FPOR	CO-58	0	0	.29142	Water
111905006	9/5/2017	FPOR	CO-60	0	0	.598785	Water
111905006	9/5/2017	FPOR	CS-134	0	0	.501606	Water
111905006	9/5/2017	FPOR	CS-137	0	0	.593205	Water
111905006	9/5/2017	FPOR	FE-59	0	0	.969044	Water
111907006	9/5/2017	FPOR	GROSSBETA	2.187	1.382	3.347	Water
111907006	9/5/2017	FPOR	GROSSBETA	2.187	1.382	3.347	Water
111907006	9/5/2017	FPOR	GROSSBETA	2.187	1.382	3.347	Water
111907006	9/5/2017	FPOR	GROSSBETA	2.187	1.382	3.347	Water
111905006	9/5/2017	FPOR	J-131	0	0	.807866	Water
111905006	9/5/2017	FPOR	K-40	0	0	12.0383	Water
111905006	9/5/2017	FPOR	LA-140	0	0	.31888	Water
111905006	9/5/2017	FPOR	MN-54	0	0	.564714	Water
111905006	9/5/2017	FPOR	NB-95	0	0	.479684	Water
111905006	9/5/2017	FPOR	RA-226	0	0	0	Water

111905006	9/5/2017	FPOR	RA-228	0	0	0	Water
111905006	9/5/2017	FPOR	ZN-65	0	0	.635258	Water
111905006	9/5/2017	FPOR	ZR-95	0	0	.794032	Water
112429006	10/2/2017	FPOR	BA-140	0	0	7.638	Water
112429006	10/2/2017	FPOR	BE-7	0	0	3.96103	Water
112429006	10/2/2017	FPOR	CO-58	0	0	.307727	Water
112429006	10/2/2017	FPOR	CO-60	0	0	.349119	Water
112429006	10/2/2017	FPOR	CS-134	0	0	.327052	Water
112429006	10/2/2017	FPOR	CS-137	0	0	.599762	Water
112429006	10/2/2017	FPOR	FE-59	0	0	.52773	Water
112428006	10/2/2017	FPOR	GROSSBETA	1.796	1.701	3.224	Water
112428006	10/2/2017	FPOR	GROSSBETA	1.796	1.701	3.224	Water
112428006	10/2/2017	FPOR	GROSSBETA	1.796	1.701	3.224	Water
112428006	10/2/2017	FPOR	GROSSBETA	1.796	1.701	3.224	Water
112455006	10/2/2017	FPOR	H3	711	187	868	Water
112429006	10/2/2017	FPOR	J-131	0	0	.851276	Water
112429006	10/2/2017	FPOR	K-40	0	0	11.7892	Water
112429006	10/2/2017	FPOR	LA-140	0	0	.330303	Water
112429006	10/2/2017	FPOR	MN-54	0	0	.401814	Water
112429006	10/2/2017	FPOR	NB-95	0	0	.7111	Water
112429006	10/2/2017	FPOR	RA-226	0	0	0	Water
112429006	10/2/2017	FPOR	RA-228	0	0	0	Water
112429006	10/2/2017	FPOR	ZN-65	0	0	.645322	Water
112429006	10/2/2017	FPOR	ZR-95	0	0	1.04233	Water
112992006	11/7/2017	FPOR	BA-140	0	0	2.49747	Water
112992006	11/7/2017	FPOR	BE-7	0	0	4.39801	Water
112992006	11/7/2017	FPOR	CO-58	0	0	.452962	Water
112992006	11/7/2017	FPOR	CO-60	0	0	.443922	Water
112992006	11/7/2017	FPOR	CS-134	0	0	.435813	Water
112992006	11/7/2017	FPOR	CS-137	0	0	.368636	Water
112992006	11/7/2017	FPOR	FE-59	0	0	.521436	Water
112993006	11/7/2017	FPOR	GROSSBETA	2.509	1.647	3.891	Water
112993006	11/7/2017	FPOR	GROSSBETA	2.509	1.647	3.891	Water
112993006	11/7/2017	FPOR	GROSSBETA	2.509	1.647	3.891	Water
112993006	11/7/2017	FPOR	GROSSBETA	2.509	1.647	3.891	Water
112992006	11/7/2017	FPOR	J-131	0	0	.751103	Water
112992006	11/7/2017	FPOR	K-40	0	0	11.3383	Water
112992006	11/7/2017	FPOR	LA-140	0	0	.514235	Water
112992006	11/7/2017	FPOR	MN-54	0	0	.355746	Water
112992006	11/7/2017	FPOR	NB-95	0	0	.592282	Water
112992006	11/7/2017	FPOR	RA-226	0	0	0	Water
112992006	11/7/2017	FPOR	RA-228	0	0	0	Water
112992006	11/7/2017	FPOR	ZN-65	0	0	.822283	Water
112992006	11/7/2017	FPOR	ZR-95	0	0	.927604	Water
113340006	12/4/2017	FPOR	BA-140	0	0	2.46328	Water
113340006	12/4/2017	FPOR	BE-7	0	0	4.19608	Water
113340006	12/4/2017	FPOR	CO-58	0	0	.385795	Water

113340006	12/4/2017	FPOR	CO-60	0	0	.595096	Water
113340006	12/4/2017	FPOR	CS-134	0	0	.493861	Water
113340006	12/4/2017	FPOR	CS-137	0	0	.756396	Water
113340006	12/4/2017	FPOR	FE-59	0	0	.704075	Water
113341006	12/4/2017	FPOR	GROSSBETA	1.547	1.678	2.956	Water
113341006	12/4/2017	FPOR	GROSSBETA	1.547	1.678	2.956	Water
113341006	12/4/2017	FPOR	GROSSBETA	1.547	1.678	2.956	Water
113341006	12/4/2017	FPOR	GROSSBETA	1.547	1.678	2.956	Water
113340006	12/4/2017	FPOR	J-131	0	0	.87805	Water
113340006	12/4/2017	FPOR	K-40	0	0	11.747	Water
113340006	12/4/2017	FPOR	LA-140	0	0	.721013	Water
113340006	12/4/2017	FPOR	MN-54	0	0	.725748	Water
113340006	12/4/2017	FPOR	NB-95	0	0	.605263	Water
113340006	12/4/2017	FPOR	RA-226	0	0	0	Water
113340006	12/4/2017	FPOR	RA-228	0	0	0	Water
113340006	12/4/2017	FPOR	ZN-65	0	0	1.0897	Water
113340006	12/4/2017	FPOR	ZR-95	0	0	1.07619	Water
107713004	1/3/2017	FPUR	BA-140	0	0	2.76663	Water
107713004	1/3/2017	FPUR	BE-7	0	0	3.54552	Water
107713004	1/3/2017	FPUR	CO-58	0	0	.376021	Water
107713004	1/3/2017	FPUR	CO-60	0	0	.45653	Water
107713004	1/3/2017	FPUR	CS-134	0	0	.704399	Water
107713004	1/3/2017	FPUR	CS-137	0	0	.558963	Water
107713004	1/3/2017	FPUR	FE-59	0	0	.727207	Water
107712004	1/3/2017	FPUR	GROSSBETA	4.582	1.644	5.962	Water
107712004	1/3/2017	FPUR	GROSSBETA	4.582	1.644	5.962	Water
107712004	1/3/2017	FPUR	GROSSBETA	4.582	1.644	5.962	Water
107712004	1/3/2017	FPUR	GROSSBETA	4.582	1.644	5.962	Water
107753002	1/3/2017	FPUR	H3	340	185	495	Water
107713004	1/3/2017	FPUR	J-131	0	0	.658304	Water
107713004	1/3/2017	FPUR	K-40	0	0	11.7074	Water
107713004	1/3/2017	FPUR	LA-140	0	0	.495528	Water
107713004	1/3/2017	FPUR	MN-54	0	0	.439426	Water
107713004	1/3/2017	FPUR	NB-95	0	0	.628906	Water
107713004	1/3/2017	FPUR	RA-226	0	0	0	Water
107713004	1/3/2017	FPUR	RA-228	0	0	0	Water
107713004	1/3/2017	FPUR	ZN-65	0	0	1.07704	Water
107713004	1/3/2017	FPUR	ZR-95	0	0	1.17788	Water
108330004	2/6/2017	FPUR	BA-140	0	0	1.94599	Water
108330004	2/6/2017	FPUR	BE-7	0	0	4.73236	Water
108330004	2/6/2017	FPUR	CO-58	0	0	.494566	Water
108330004	2/6/2017	FPUR	CO-60	0	0	.490037	Water
108330004	2/6/2017	FPUR	CS-134	0	0	.436247	Water
108330004	2/6/2017	FPUR	CS-137	0	0	.675235	Water
108330004	2/6/2017	FPUR	FE-59	0	0	.9613	Water
108329004	2/6/2017	FPUR	GROSSBETA	2.548	1.45	3.765	Water
108329004	2/6/2017	FPUR	GROSSBETA	2.548	1.45	3.765	Water

108329004	2/6/2017	FPUR	GROSSBETA	2.548	1.45	3.765	Water
108329004	2/6/2017	FPUR	GROSSBETA	2.548	1.45	3.765	Water
108330004	2/6/2017	FPUR	J-131	0	0	.450261	Water
108330004	2/6/2017	FPUR	K-40	0	0	11.9103	Water
108330004	2/6/2017	FPUR	LA-140	0	0	.365703	Water
108330004	2/6/2017	FPUR	MN-54	0	0	.312543	Water
108330004	2/6/2017	FPUR	NB-95	0	0	.660902	Water
108330004	2/6/2017	FPUR	RA-226	0	0	0	Water
108330004	2/6/2017	FPUR	RA-228	0	0	0	Water
108330004	2/6/2017	FPUR	ZN-65	0	0	.975651	Water
108330004	2/6/2017	FPUR	ZR-95	0	0	.691772	Water
108721004	3/6/2017	FPUR	BA-140	0	0	2.85306	Water
108721004	3/6/2017	FPUR	BE-7	0	0	4.2474	Water
108721004	3/6/2017	FPUR	CO-58	0	0	.531665	Water
108721004	3/6/2017	FPUR	CO-60	0	0	.698937	Water
108721004	3/6/2017	FPUR	CS-134	0	0	.729573	Water
108721004	3/6/2017	FPUR	CS-137	0	0	.435513	Water
108721004	3/6/2017	FPUR	FE-59	0	0	1.20655	Water
108767004	3/6/2017	FPUR	GROSSBETA	1.558	1.332	2.676	Water
108767004	3/6/2017	FPUR	GROSSBETA	1.558	1.332	2.676	Water
108767004	3/6/2017	FPUR	GROSSBETA	1.558	1.332	2.676	Water
108767004	3/6/2017	FPUR	GROSSBETA	1.558	1.332	2.676	Water
108721004	3/6/2017	FPUR	J-131	0	0	.57464	Water
108721004	3/6/2017	FPUR	K-40	0	0	11.5173	Water
108721004	3/6/2017	FPUR	LA-140	0	0	.466361	Water
108721004	3/6/2017	FPUR	MN-54	0	0	.6845	Water
108721004	3/6/2017	FPUR	NB-95	0	0	.650595	Water
108721004	3/6/2017	FPUR	RA-226	0	0	0	Water
108721004	3/6/2017	FPUR	RA-228	0	0	0	Water
108721004	3/6/2017	FPUR	ZN-65	0	0	1.57392	Water
108721004	3/6/2017	FPUR	ZR-95	0	0	.679208	Water
109215004	4/3/2017	FPUR	BA-140	0	0	2.25352	Water
109215004	4/3/2017	FPUR	BE-7	0	0	3.7789	Water
109215004	4/3/2017	FPUR	CO-58	0	0	.276569	Water
109215004	4/3/2017	FPUR	CO-60	0	0	.404929	Water
109215004	4/3/2017	FPUR	CS-134	0	0	.534204	Water
109215004	4/3/2017	FPUR	CS-137	0	0	.634225	Water
109215004	4/3/2017	FPUR	FE-59	0	0	.531123	Water
109214004	4/3/2017	FPUR	GROSSBETA	.4877	1.167	1.467	Water
109214004	4/3/2017	FPUR	GROSSBETA	.4877	1.167	1.467	Water
109214004	4/3/2017	FPUR	GROSSBETA	.4877	1.167	1.467	Water
109214004	4/3/2017	FPUR	GROSSBETA	.4877	1.167	1.467	Water
109240004	4/3/2017	FPUR	H3	771	185	926	Water
109215004	4/3/2017	FPUR	J-131	0	0	.783118	Water
109215004	4/3/2017	FPUR	K-40	0	0	11.3717	Water
109215004	4/3/2017	FPUR	LA-140	0	0	.625392	Water
109215004	4/3/2017	FPUR	MN-54	0	0	.366908	Water

109215004	4/3/2017	FPUR	NB-95	0	0	.654962	Water
109215004	4/3/2017	FPUR	RA-226	0	0	0	Water
109215004	4/3/2017	FPUR	RA-228	0	0	0	Water
109215004	4/3/2017	FPUR	ZN-65	0	0	.981107	Water
109215004	4/3/2017	FPUR	ZR-95	0	0	.66808	Water
109660004	5/1/2017	FPUR	BA-140	0	0	2.80586	Water
109660004	5/1/2017	FPUR	BE-7	0	0	5.63764	Water
109660004	5/1/2017	FPUR	CO-58	0	0	.372203	Water
109660004	5/1/2017	FPUR	CO-60	0	0	.759399	Water
109660004	5/1/2017	FPUR	CS-134	0	0	.686623	Water
109660004	5/1/2017	FPUR	CS-137	0	0	.696682	Water
109660004	5/1/2017	FPUR	FE-59	0	0	.685727	Water
109659004	5/1/2017	FPUR	GROSSBETA	2.606	1.416	3.794	Water
109659004	5/1/2017	FPUR	GROSSBETA	2.606	1.416	3.794	Water
109659004	5/1/2017	FPUR	GROSSBETA	2.606	1.416	3.794	Water
109659004	5/1/2017	FPUR	GROSSBETA	2.606	1.416	3.794	Water
109660004	5/1/2017	FPUR	J-131	0	0	.76351	Water
109660004	5/1/2017	FPUR	K-40	0	0	11.0747	Water
109660004	5/1/2017	FPUR	LA-140	0	0	.6765	Water
109660004	5/1/2017	FPUR	MN-54	0	0	.724386	Water
109660004	5/1/2017	FPUR	NB-95	0	0	.780782	Water
109660004	5/1/2017	FPUR	RA-226	0	0	0	Water
109660004	5/1/2017	FPUR	RA-228	0	0	0	Water
109660004	5/1/2017	FPUR	ZN-65	0	0	1.16285	Water
109660004	5/1/2017	FPUR	ZR-95	0	0	.810971	Water
110258004	6/5/2017	FPUR	BA-140	0	0	3.07776	Water
110258004	6/5/2017	FPUR	BE-7	0	0	4.12977	Water
110258004	6/5/2017	FPUR	CO-58	0	0	.69347	Water
110258004	6/5/2017	FPUR	CO-60	0	0	.608921	Water
110258004	6/5/2017	FPUR	CS-134	0	0	.628377	Water
110258004	6/5/2017	FPUR	CS-137	0	0	.504421	Water
110258004	6/5/2017	FPUR	FE-59	0	0	.685854	Water
110257004	6/5/2017	FPUR	GROSSBETA	3.211	1.562	4.522	Water
110257004	6/5/2017	FPUR	GROSSBETA	3.211	1.562	4.522	Water
110257004	6/5/2017	FPUR	GROSSBETA	3.211	1.562	4.522	Water
110257004	6/5/2017	FPUR	GROSSBETA	3.211	1.562	4.522	Water
110258004	6/5/2017	FPUR	J-131	0	0	.693217	Water
110258004	6/5/2017	FPUR	K-40	0	0	11.8749	Water
110258004	6/5/2017	FPUR	LA-140	0	0	.393706	Water
110258004	6/5/2017	FPUR	MN-54	0	0	.684662	Water
110258004	6/5/2017	FPUR	NB-95	0	0	.629905	Water
110258004	6/5/2017	FPUR	RA-226	0	0	0	Water
110258004	6/5/2017	FPUR	RA-228	0	0	0	Water
110258004	6/5/2017	FPUR	ZN-65	0	0	1.48292	Water
110258004	6/5/2017	FPUR	ZR-95	0	0	1.35119	Water
110800004	7/5/2017	FPUR	BA-140	0	0	2.29001	Water
110800004	7/5/2017	FPUR	BE-7	0	0	4.67486	Water

110800004	7/5/2017	FPUR	CO-58	0	0	.372404	Water
110800004	7/5/2017	FPUR	CO-60	0	0	.661859	Water
110800004	7/5/2017	FPUR	CS-134	0	0	.692207	Water
110800004	7/5/2017	FPUR	CS-137	0	0	.693009	Water
110800004	7/5/2017	FPUR	FE-59	0	0	.872952	Water
110798004	7/5/2017	FPUR	GROSSBETA	1.337	1.33	2.454	Water
110798004	7/5/2017	FPUR	GROSSBETA	1.337	1.33	2.454	Water
110798004	7/5/2017	FPUR	GROSSBETA	1.337	1.33	2.454	Water
110798004	7/5/2017	FPUR	GROSSBETA	1.337	1.33	2.454	Water
110869004	7/5/2017	FPUR	H3	585	175	732	Water
110800004	7/5/2017	FPUR	J-131	0	0	.504626	Water
110800004	7/5/2017	FPUR	K-40	0	0	11.0642	Water
110800004	7/5/2017	FPUR	LA-140	0	0	.859137	Water
110800004	7/5/2017	FPUR	MN-54	0	0	.638458	Water
110800004	7/5/2017	FPUR	NB-95	0	0	.776999	Water
110800004	7/5/2017	FPUR	RA-226	0	0	0	Water
110800004	7/5/2017	FPUR	RA-228	0	0	0	Water
110800004	7/5/2017	FPUR	ZN-65	0	0	1.25475	Water
110800004	7/5/2017	FPUR	ZR-95	0	0	1.02865	Water
111395004	8/7/2017	FPUR	BA-140	0	0	2.84927	Water
111395004	8/7/2017	FPUR	BE-7	0	0	6.27102	Water
111395004	8/7/2017	FPUR	CO-58	0	0	.450201	Water
111395004	8/7/2017	FPUR	CO-60	0	0	.370216	Water
111395004	8/7/2017	FPUR	CS-134	0	0	.622664	Water
111395004	8/7/2017	FPUR	CS-137	0	0	.504444	Water
111395004	8/7/2017	FPUR	FE-59	0	0	.664803	Water
111394004	8/7/2017	FPUR	GROSSBETA	2.522	1.55	3.822	Water
111394004	8/7/2017	FPUR	GROSSBETA	2.522	1.55	3.822	Water
111394004	8/7/2017	FPUR	GROSSBETA	2.522	1.55	3.822	Water
111394004	8/7/2017	FPUR	GROSSBETA	2.522	1.55	3.822	Water
111395004	8/7/2017	FPUR	J-131	0	0	.863386	Water
111395004	8/7/2017	FPUR	K-40	0	0	11.0747	Water
111395004	8/7/2017	FPUR	LA-140	0	0	.942113	Water
111395004	8/7/2017	FPUR	MN-54	0	0	.69319	Water
111395004	8/7/2017	FPUR	NB-95	0	0	.537292	Water
111395004	8/7/2017	FPUR	RA-226	0	0	0	Water
111395004	8/7/2017	FPUR	RA-228	0	0	0	Water
111395004	8/7/2017	FPUR	ZN-65	0	0	1.21523	Water
111395004	8/7/2017	FPUR	ZR-95	0	0	.901759	Water
111905004	9/5/2017	FPUR	BA-140	0	0	2.54717	Water
111905004	9/5/2017	FPUR	BE-7	0	0	5.88602	Water
111905004	9/5/2017	FPUR	CO-58	0	0	.53755	Water
111905004	9/5/2017	FPUR	CO-60	0	0	.601112	Water
111905004	9/5/2017	FPUR	CS-134	0	0	.525805	Water
111905004	9/5/2017	FPUR	CS-137	0	0	.678132	Water
111905004	9/5/2017	FPUR	FE-59	0	0	.702599	Water
111907004	9/5/2017	FPUR	GROSSBETA	2.638	1.421	3.83	Water

111907004	9/5/2017	FPUR	GROSSBETA	2.638	1.421	3.83	Water
111907004	9/5/2017	FPUR	GROSSBETA	2.638	1.421	3.83	Water
111907004	9/5/2017	FPUR	GROSSBETA	2.638	1.421	3.83	Water
111905004	9/5/2017	FPUR	J-131	0	0	.608215	Water
111905004	9/5/2017	FPUR	K-40	0	0	10.7981	Water
111905004	9/5/2017	FPUR	LA-140	0	0	.494759	Water
111905004	9/5/2017	FPUR	MN-54	0	0	.450254	Water
111905004	9/5/2017	FPUR	NB-95	0	0	.55524	Water
111905004	9/5/2017	FPUR	RA-226	0	0	0	Water
111905004	9/5/2017	FPUR	RA-228	0	0	0	Water
111905004	9/5/2017	FPUR	ZN-65	0	0	1.25709	Water
111905004	9/5/2017	FPUR	ZR-95	0	0	1.2616	Water
112429004	10/2/2017	FPUR	BA-140	0	0	1.91086	Water
112429004	10/2/2017	FPUR	BE-7	0	0	6.28238	Water
112429004	10/2/2017	FPUR	CO-58	0	0	.658301	Water
112429004	10/2/2017	FPUR	CO-60	0	0	.445804	Water
112429004	10/2/2017	FPUR	CS-134	0	0	.713315	Water
112429004	10/2/2017	FPUR	CS-137	0	0	.732431	Water
112429004	10/2/2017	FPUR	FE-59	0	0	.713679	Water
112428004	10/2/2017	FPUR	GROSSBETA	2.696	1.785	4.195	Water
112428004	10/2/2017	FPUR	GROSSBETA	2.696	1.785	4.195	Water
112428004	10/2/2017	FPUR	GROSSBETA	2.696	1.785	4.195	Water
112428004	10/2/2017	FPUR	GROSSBETA	2.696	1.785	4.195	Water
112455004	10/2/2017	FPUR	H3	686	187	844	Water
112429004	10/2/2017	FPUR	J-131	0	0	.692371	Water
112429004	10/2/2017	FPUR	K-40	0	0	11.2931	Water
112429004	10/2/2017	FPUR	LA-140	0	0	.72552	Water
112429004	10/2/2017	FPUR	MN-54	0	0	.539337	Water
112429004	10/2/2017	FPUR	NB-95	0	0	.817641	Water
112429004	10/2/2017	FPUR	RA-226	0	0	0	Water
112429004	10/2/2017	FPUR	RA-228	0	0	0	Water
112429004	10/2/2017	FPUR	ZN-65	0	0	1.48907	Water
112429004	10/2/2017	FPUR	ZR-95	0	0	.887804	Water
112992004	11/7/2017	FPUR	BA-140	0	0	1.82454	Water
112992004	11/7/2017	FPUR	BE-7	0	0	4.39272	Water
112992004	11/7/2017	FPUR	CO-58	0	0	.266241	Water
112992004	11/7/2017	FPUR	CO-60	0	0	.551631	Water
112992004	11/7/2017	FPUR	CS-134	0	0	.31642	Water
112992004	11/7/2017	FPUR	CS-137	0	0	.314759	Water
112992004	11/7/2017	FPUR	FE-59	0	0	.527408	Water
112993004	11/7/2017	FPUR	GROSSBETA	1.91	1.603	3.255	Water
112993004	11/7/2017	FPUR	GROSSBETA	1.91	1.603	3.255	Water
112993004	11/7/2017	FPUR	GROSSBETA	1.91	1.603	3.255	Water
112993004	11/7/2017	FPUR	GROSSBETA	1.91	1.603	3.255	Water
112992004	11/7/2017	FPUR	J-131	0	0	.432297	Water
112992004	11/7/2017	FPUR	K-40	0	0	11.5682	Water
112992004	11/7/2017	FPUR	LA-140	0	0	.523194	Water

112992004	11/7/2017	FPUR	MN-54	0	0	.412412	Water
112992004	11/7/2017	FPUR	NB-95	0	0	.594147	Water
112992004	11/7/2017	FPUR	RA-226	0	0	0	Water
112992004	11/7/2017	FPUR	RA-228	0	0	0	Water
112992004	11/7/2017	FPUR	ZN-65	0	0	.824981	Water
112992004	11/7/2017	FPUR	ZR-95	0	0	.584195	Water
113340004	12/4/2017	FPUR	BA-140	0	0	2.00013	Water
113340004	12/4/2017	FPUR	BE-7	0	0	3.00356	Water
113340004	12/4/2017	FPUR	CO-58	0	0	.443156	Water
113340004	12/4/2017	FPUR	CO-60	0	0	.446758	Water
113340004	12/4/2017	FPUR	CS-134	0	0	.443715	Water
113340004	12/4/2017	FPUR	CS-137	0	0	.353673	Water
113340004	12/4/2017	FPUR	FE-59	0	0	.98202	Water
113341004	12/4/2017	FPUR	GROSSBETA	2.041	1.721	3.486	Water
113341004	12/4/2017	FPUR	GROSSBETA	2.041	1.721	3.486	Water
113341004	12/4/2017	FPUR	GROSSBETA	2.041	1.721	3.486	Water
113341004	12/4/2017	FPUR	GROSSBETA	2.041	1.721	3.486	Water
113340004	12/4/2017	FPUR	J-131	0	0	.85597	Water
113340004	12/4/2017	FPUR	K-40	0	0	12.7832	Water
113340004	12/4/2017	FPUR	LA-140	0	0	.500755	Water
113340004	12/4/2017	FPUR	MN-54	0	0	.40172	Water
113340004	12/4/2017	FPUR	NB-95	0	0	.652782	Water
113340004	12/4/2017	FPUR	RA-226	0	0	0	Water
113340004	12/4/2017	FPUR	RA-228	0	0	0	Water
113340004	12/4/2017	FPUR	ZN-65	0	0	.931117	Water
113340004	12/4/2017	FPUR	ZR-95	0	0	.550978	Water
107713001	1/3/2017	RAUC	BA-140	0	0	25.5476	Water
107713001	1/3/2017	RAUC	BE-7	0	0	33.5802	Water
107713001	1/3/2017	RAUC	CO-58	0	0	4.57826	Water
107713001	1/3/2017	RAUC	CO-60	0	0	3.49502	Water
107713001	1/3/2017	RAUC	CS-134	0	0	7.5679	Water
107713001	1/3/2017	RAUC	CS-137	0	0	4.51997	Water
107713001	1/3/2017	RAUC	FE-59	0	0	12.0175	Water
107712001	1/3/2017	RAUC	GROSSBETA	3.969	1.522	5.247	Water
107712001	1/3/2017	RAUC	GROSSBETA	3.969	1.522	5.247	Water
107712001	1/3/2017	RAUC	GROSSBETA	3.969	1.522	5.247	Water
107712001	1/3/2017	RAUC	GROSSBETA	3.969	1.522	5.247	Water
107713001	1/3/2017	RAUC	J-131	0	0	4.03683	Water
107713001	1/3/2017	RAUC	K-40	0	0	111.07	Water
107713001	1/3/2017	RAUC	LA-140	0	0	4.19103	Water
107713001	1/3/2017	RAUC	MN-54	0	0	7.34725	Water
107713001	1/3/2017	RAUC	NB-95	0	0	3.72665	Water
107713001	1/3/2017	RAUC	RA-226	0	0	0	Water
107713001	1/3/2017	RAUC	RA-228	0	0	0	Water
107713001	1/3/2017	RAUC	ZN-65	0	0	10.4661	Water
107713001	1/3/2017	RAUC	ZR-95	0	0	14.0381	Water
107753005	1/4/2017	RAUC	H3	-113	179	150	Water

108330001	2/7/2017	RAUC	BA-140	0	0	18.3327	Water
108330001	2/7/2017	RAUC	BE-7	0	0	28.5858	Water
108330001	2/7/2017	RAUC	CO-58	0	0	4.61274	Water
108330001	2/7/2017	RAUC	CO-60	0	0	7.10166	Water
108330001	2/7/2017	RAUC	CS-134	0	0	3.82522	Water
108330001	2/7/2017	RAUC	CS-137	0	0	3.99074	Water
108330001	2/7/2017	RAUC	FE-59	0	0	5.32648	Water
108329001	2/7/2017	RAUC	GROSSBETA	1.663	1.307	2.76	Water
108329001	2/7/2017	RAUC	GROSSBETA	1.663	1.307	2.76	Water
108329001	2/7/2017	RAUC	GROSSBETA	1.663	1.307	2.76	Water
108329001	2/7/2017	RAUC	GROSSBETA	1.663	1.307	2.76	Water
108330001	2/7/2017	RAUC	J-131	0	0	6.7709	Water
108330001	2/7/2017	RAUC	K-40	0	0	128.833	Water
108330001	2/7/2017	RAUC	LA-140	0	0	2.96175	Water
108330001	2/7/2017	RAUC	MN-54	0	0	3.9932	Water
108330001	2/7/2017	RAUC	NB-95	0	0	7.8279	Water
108330001	2/7/2017	RAUC	RA-226	0	0	0	Water
108330001	2/7/2017	RAUC	RA-228	0	0	0	Water
108330001	2/7/2017	RAUC	ZN-65	0	0	16.9249	Water
108330001	2/7/2017	RAUC	ZR-95	0	0	13.9508	Water
108721001	3/7/2017	RAUC	BA-140	0	0	18.5948	Water
108721001	3/7/2017	RAUC	BE-7	0	0	43.5126	Water
108721001	3/7/2017	RAUC	CO-58	0	0	3.77451	Water
108721001	3/7/2017	RAUC	CO-60	0	0	3.47934	Water
108721001	3/7/2017	RAUC	CS-134	0	0	4.37456	Water
108721001	3/7/2017	RAUC	CS-137	0	0	5.56774	Water
108721001	3/7/2017	RAUC	FE-59	0	0	6.99495	Water
108767001	3/7/2017	RAUC	GROSSBETA	2.335	1.372	3.486	Water
108767001	3/7/2017	RAUC	GROSSBETA	2.335	1.372	3.486	Water
108767001	3/7/2017	RAUC	GROSSBETA	2.335	1.372	3.486	Water
108767001	3/7/2017	RAUC	GROSSBETA	2.335	1.372	3.486	Water
108721001	3/7/2017	RAUC	J-131	0	0	6.45016	Water
108721001	3/7/2017	RAUC	K-40	0	0	145.759	Water
108721001	3/7/2017	RAUC	LA-140	0	0	5.47904	Water
108721001	3/7/2017	RAUC	MN-54	0	0	4.01064	Water
108721001	3/7/2017	RAUC	NB-95	0	0	4.39051	Water
108721001	3/7/2017	RAUC	RA-226	0	0	0	Water
108721001	3/7/2017	RAUC	RA-228	0	0	0	Water
108721001	3/7/2017	RAUC	ZN-65	0	0	13.599	Water
108721001	3/7/2017	RAUC	ZR-95	0	0	11.1363	Water
109215001	4/3/2017	RAUC	BA-140	0	0	28.2773	Water
109215001	4/3/2017	RAUC	BE-7	0	0	47.5719	Water
109215001	4/3/2017	RAUC	CO-58	0	0	4.16597	Water
109215001	4/3/2017	RAUC	CO-60	0	0	7.75981	Water
109215001	4/3/2017	RAUC	CS-134	0	0	5.34483	Water
109215001	4/3/2017	RAUC	CS-137	0	0	4.10234	Water
109215001	4/3/2017	RAUC	FE-59	0	0	12.839	Water

109214001	4/3/2017	RAUC	GROSSBETA	5.823	1.714	7.261	Water
109214001	4/3/2017	RAUC	GROSSBETA	5.823	1.714	7.261	Water
109214001	4/3/2017	RAUC	GROSSBETA	5.823	1.714	7.261	Water
109214001	4/3/2017	RAUC	GROSSBETA	5.823	1.714	7.261	Water
109240001	4/3/2017	RAUC	H3	252	177	401	Water
109215001	4/3/2017	RAUC	J-131	0	0	7.72821	Water
109215001	4/3/2017	RAUC	K-40	0	0	92.5165	Water
109215001	4/3/2017	RAUC	LA-140	0	0	3.81598	Water
109215001	4/3/2017	RAUC	MN-54	0	0	8.37789	Water
109215001	4/3/2017	RAUC	NB-95	0	0	3.24541	Water
109215001	4/3/2017	RAUC	RA-226	0	0	0	Water
109215001	4/3/2017	RAUC	RA-228	0	0	0	Water
109215001	4/3/2017	RAUC	ZN-65	0	0	12.2218	Water
109215001	4/3/2017	RAUC	ZR-95	0	0	7.17207	Water
109660001	5/2/2017	RAUC	BA-140	0	0	22.7244	Water
109660001	5/2/2017	RAUC	BE-7	0	0	33.6941	Water
109660001	5/2/2017	RAUC	CO-58	0	0	4.60411	Water
109660001	5/2/2017	RAUC	CO-60	0	0	2.83832	Water
109660001	5/2/2017	RAUC	CS-134	0	0	8.06219	Water
109660001	5/2/2017	RAUC	CS-137	0	0	7.92966	Water
109660001	5/2/2017	RAUC	FE-59	0	0	11.9898	Water
109659001	5/2/2017	RAUC	GROSSBETA	1.497	1.256	2.551	Water
109659001	5/2/2017	RAUC	GROSSBETA	1.497	1.256	2.551	Water
109659001	5/2/2017	RAUC	GROSSBETA	1.497	1.256	2.551	Water
109659001	5/2/2017	RAUC	GROSSBETA	1.497	1.256	2.551	Water
109660001	5/2/2017	RAUC	J-131	0	0	8.3553	Water
109660001	5/2/2017	RAUC	K-40	0	0	116.407	Water
109660001	5/2/2017	RAUC	LA-140	0	0	6.64344	Water
109660001	5/2/2017	RAUC	MN-54	0	0	5.90179	Water
109660001	5/2/2017	RAUC	NB-95	0	0	7.88672	Water
109660001	5/2/2017	RAUC	RA-226	0	0	0	Water
109660001	5/2/2017	RAUC	RA-228	0	0	0	Water
109660001	5/2/2017	RAUC	ZN-65	0	0	7.24502	Water
109660001	5/2/2017	RAUC	ZR-95	0	0	8.94952	Water
110258001	6/6/2017	RAUC	BA-140	0	0	14.5731	Water
110258001	6/6/2017	RAUC	BE-7	0	0	29.2886	Water
110258001	6/6/2017	RAUC	CO-58	0	0	4.84862	Water
110258001	6/6/2017	RAUC	CO-60	0	0	3.25983	Water
110258001	6/6/2017	RAUC	CS-134	0	0	6.27762	Water
110258001	6/6/2017	RAUC	CS-137	0	0	6.14723	Water
110258001	6/6/2017	RAUC	FE-59	0	0	9.29006	Water
110257001	6/6/2017	RAUC	GROSSBETA	1.897	1.394	3.067	Water
110257001	6/6/2017	RAUC	GROSSBETA	1.897	1.394	3.067	Water
110257001	6/6/2017	RAUC	GROSSBETA	1.897	1.394	3.067	Water
110257001	6/6/2017	RAUC	GROSSBETA	1.897	1.394	3.067	Water
110258001	6/6/2017	RAUC	J-131	0	0	4.38115	Water
110258001	6/6/2017	RAUC	K-40	0	0	102.017	Water

110258001	6/6/2017	RAUC	LA-140	0	0	6.97806	Water
110258001	6/6/2017	RAUC	MN-54	0	0	4.15654	Water
110258001	6/6/2017	RAUC	NB-95	0	0	3.40292	Water
110258001	6/6/2017	RAUC	RA-226	0	0	0	Water
110258001	6/6/2017	RAUC	RA-228	0	0	0	Water
110258001	6/6/2017	RAUC	ZN-65	0	0	14.9543	Water
110258001	6/6/2017	RAUC	ZR-95	0	0	8.87074	Water
110800001	7/5/2017	RAUC	BA-140	0	0	21.9691	Water
110800001	7/5/2017	RAUC	BE-7	0	0	61.2033	Water
110800001	7/5/2017	RAUC	CO-58	0	0	3.5649	Water
110800001	7/5/2017	RAUC	CO-60	0	0	6.11535	Water
110800001	7/5/2017	RAUC	CS-134	0	0	4.36105	Water
110800001	7/5/2017	RAUC	CS-137	0	0	3.8462	Water
110800001	7/5/2017	RAUC	FE-59	0	0	9.88112	Water
110798001	7/5/2017	RAUC	GROSSBETA	4.446	1.649	5.831	Water
110798001	7/5/2017	RAUC	GROSSBETA	4.446	1.649	5.831	Water
110798001	7/5/2017	RAUC	GROSSBETA	4.446	1.649	5.831	Water
110798001	7/5/2017	RAUC	GROSSBETA	4.446	1.649	5.831	Water
110869001	7/5/2017	RAUC	H3	-38.6	169	142	Water
110800001	7/5/2017	RAUC	J-131	0	0	9.91267	Water
110800001	7/5/2017	RAUC	K-40	0	0	113.626	Water
110800001	7/5/2017	RAUC	LA-140	0	0	3.65128	Water
110800001	7/5/2017	RAUC	MN-54	0	0	7.05286	Water
110800001	7/5/2017	RAUC	NB-95	0	0	7.81019	Water
110800001	7/5/2017	RAUC	RA-226	0	0	0	Water
110800001	7/5/2017	RAUC	RA-228	0	0	0	Water
110800001	7/5/2017	RAUC	ZN-65	0	0	6.01495	Water
110800001	7/5/2017	RAUC	ZR-95	0	0	12.2103	Water
111395001	8/8/2017	RAUC	BA-140	0	0	13.3074	Water
111395001	8/8/2017	RAUC	BE-7	0	0	29.9007	Water
111395001	8/8/2017	RAUC	CO-58	0	0	4.27342	Water
111395001	8/8/2017	RAUC	CO-60	0	0	5.61193	Water
111395001	8/8/2017	RAUC	CS-134	0	0	6.4594	Water
111395001	8/8/2017	RAUC	CS-137	0	0	4.82163	Water
111395001	8/8/2017	RAUC	FE-59	0	0	7.05967	Water
111394001	8/8/2017	RAUC	GROSSBETA	3.065	1.583	4.394	Water
111394001	8/8/2017	RAUC	GROSSBETA	3.065	1.583	4.394	Water
111394001	8/8/2017	RAUC	GROSSBETA	3.065	1.583	4.394	Water
111394001	8/8/2017	RAUC	GROSSBETA	3.065	1.583	4.394	Water
111395001	8/8/2017	RAUC	J-131	0	0	3.84998	Water
111395001	8/8/2017	RAUC	K-40	0	0	149.939	Water
111395001	8/8/2017	RAUC	LA-140	0	0	5.12237	Water
111395001	8/8/2017	RAUC	MN-54	0	0	4.06558	Water
111395001	8/8/2017	RAUC	NB-95	0	0	5.28868	Water
111395001	8/8/2017	RAUC	RA-226	0	0	0	Water
111395001	8/8/2017	RAUC	RA-228	0	0	0	Water
111395001	8/8/2017	RAUC	ZN-65	0	0	10.254	Water

111395001	8/8/2017	RAUC	ZR-95	0	0	6.35844	Water
111905001	9/6/2017	RAUC	BA-140	0	0	25.6458	Water
111905001	9/6/2017	RAUC	BE-7	0	0	23.359	Water
111905001	9/6/2017	RAUC	CO-58	0	0	2.57504	Water
111905001	9/6/2017	RAUC	CO-60	0	0	2.2337	Water
111905001	9/6/2017	RAUC	CS-134	0	0	5.46698	Water
111905001	9/6/2017	RAUC	CS-137	0	0	3.01389	Water
111905001	9/6/2017	RAUC	FE-59	0	0	5.13661	Water
111907001	9/6/2017	RAUC	GROSSBETA	3.502	1.491	4.754	Water
111907001	9/6/2017	RAUC	GROSSBETA	3.502	1.491	4.754	Water
111907001	9/6/2017	RAUC	GROSSBETA	3.502	1.491	4.754	Water
111907001	9/6/2017	RAUC	GROSSBETA	3.502	1.491	4.754	Water
111905001	9/6/2017	RAUC	J-131	0	0	5.90187	Water
111905001	9/6/2017	RAUC	K-40	0	0	104.855	Water
111905001	9/6/2017	RAUC	LA-140	0	0	5.10347	Water
111905001	9/6/2017	RAUC	MN-54	0	0	3.42391	Water
111905001	9/6/2017	RAUC	NB-95	0	0	7.0116	Water
111905001	9/6/2017	RAUC	RA-226	0	0	0	Water
111905001	9/6/2017	RAUC	RA-228	0	0	0	Water
111905001	9/6/2017	RAUC	ZN-65	0	0	7.89818	Water
111905001	9/6/2017	RAUC	ZR-95	0	0	9.40521	Water
112429001	10/2/2017	RAUC	BA-140	0	0	21.0863	Water
112429001	10/2/2017	RAUC	BE-7	0	0	74.7416	Water
112429001	10/2/2017	RAUC	CO-58	0	0	8.88489	Water
112429001	10/2/2017	RAUC	CO-60	0	0	9.8868	Water
112429001	10/2/2017	RAUC	CS-134	0	0	4.24855	Water
112429001	10/2/2017	RAUC	CS-137	0	0	10.9827	Water
112429001	10/2/2017	RAUC	FE-59	0	0	17.1348	Water
112428001	10/2/2017	RAUC	GROSSBETA	4.896	1.957	6.539	Water
112428001	10/2/2017	RAUC	GROSSBETA	4.896	1.957	6.539	Water
112428001	10/2/2017	RAUC	GROSSBETA	4.896	1.957	6.539	Water
112428001	10/2/2017	RAUC	GROSSBETA	4.896	1.957	6.539	Water
112455001	10/2/2017	RAUC	H3	174	181	326	Water
112429001	10/2/2017	RAUC	J-131	0	0	10.2293	Water
112429001	10/2/2017	RAUC	K-40	0	0	155.39	Water
112429001	10/2/2017	RAUC	LA-140	0	0	10.1418	Water
112429001	10/2/2017	RAUC	MN-54	0	0	10.3804	Water
112429001	10/2/2017	RAUC	NB-95	0	0	7.77418	Water
112429001	10/2/2017	RAUC	RA-226	0	0	0	Water
112429001	10/2/2017	RAUC	RA-228	0	0	0	Water
112429001	10/2/2017	RAUC	ZN-65	0	0	16.4568	Water
112429001	10/2/2017	RAUC	ZR-95	0	0	6.46445	Water
112992001	11/6/2017	RAUC	BA-140	0	0	21.4597	Water
112992001	11/6/2017	RAUC	BE-7	0	0	48.6154	Water
112992001	11/6/2017	RAUC	CO-58	0	0	3.47373	Water
112992001	11/6/2017	RAUC	CO-60	0	0	4.24997	Water
112992001	11/6/2017	RAUC	CS-134	0	0	3.41153	Water

112992001	11/6/2017	RAUC	CS-137	0	0	7.36061	Water
112992001	11/6/2017	RAUC	FE-59	0	0	10.1952	Water
112993001	11/6/2017	RAUC	GROSSBETA	2.902	2.113	4.675	Water
112993001	11/6/2017	RAUC	GROSSBETA	2.902	2.113	4.675	Water
112993001	11/6/2017	RAUC	GROSSBETA	2.902	2.113	4.675	Water
112993001	11/6/2017	RAUC	GROSSBETA	2.902	2.113	4.675	Water
112992001	11/6/2017	RAUC	J-131	0	0	5.47211	Water
112992001	11/6/2017	RAUC	K-40	0	0	125.937	Water
112992001	11/6/2017	RAUC	LA-140	0	0	4.79768	Water
112992001	11/6/2017	RAUC	MN-54	0	0	5.70613	Water
112992001	11/6/2017	RAUC	NB-95	0	0	7.99939	Water
112992001	11/6/2017	RAUC	RA-226	0	0	0	Water
112992001	11/6/2017	RAUC	RA-228	0	0	0	Water
112992001	11/6/2017	RAUC	ZN-65	0	0	13.5744	Water
112992001	11/6/2017	RAUC	ZR-95	0	0	10.8481	Water
113340001	12/4/2017	RAUC	BA-140	0	0	21.6493	Water
113340001	12/4/2017	RAUC	BE-7	0	0	41.2226	Water
113340001	12/4/2017	RAUC	CO-58	0	0	4.09708	Water
113340001	12/4/2017	RAUC	CO-60	0	0	2.81959	Water
113340001	12/4/2017	RAUC	CS-134	0	0	6.3365	Water
113340001	12/4/2017	RAUC	CS-137	0	0	6.97703	Water
113340001	12/4/2017	RAUC	FE-59	0	0	6.19299	Water
113341001	12/4/2017	RAUC	GROSSBETA	.4253	1.487	1.673	Water
113341001	12/4/2017	RAUC	GROSSBETA	.4253	1.487	1.673	Water
113341001	12/4/2017	RAUC	GROSSBETA	.4253	1.487	1.673	Water
113341001	12/4/2017	RAUC	GROSSBETA	.4253	1.487	1.673	Water
113340001	12/4/2017	RAUC	J-131	0	0	4.52273	Water
113340001	12/4/2017	RAUC	K-40	0	0	112.258	Water
113340001	12/4/2017	RAUC	LA-140	0	0	3.82264	Water
113340001	12/4/2017	RAUC	MN-54	0	0	6.50749	Water
113340001	12/4/2017	RAUC	NB-95	0	0	3.55594	Water
113340001	12/4/2017	RAUC	RA-226	0	0	0	Water
113340001	12/4/2017	RAUC	RA-228	0	0	0	Water
113340001	12/4/2017	RAUC	ZN-65	0	0	9.74116	Water
113340001	12/4/2017	RAUC	ZR-95	0	0	5.51003	Water
107713005	1/4/2017	RPOR	BA-140	0	0	16.9262	Water
107713005	1/4/2017	RPOR	BE-7	0	0	54.0273	Water
107713005	1/4/2017	RPOR	CO-58	0	0	3.18113	Water
107713005	1/4/2017	RPOR	CO-60	0	0	3.60007	Water
107713005	1/4/2017	RPOR	CS-134	0	0	5.44634	Water
107713005	1/4/2017	RPOR	CS-137	0	0	4.75299	Water
107713005	1/4/2017	RPOR	FE-59	0	0	13.0728	Water
107712005	1/4/2017	RPOR	GROSSBETA	2.101	1.365	3.246	Water
107712005	1/4/2017	RPOR	GROSSBETA	2.101	1.365	3.246	Water
107712005	1/4/2017	RPOR	GROSSBETA	2.101	1.365	3.246	Water
107712005	1/4/2017	RPOR	GROSSBETA	2.101	1.365	3.246	Water
107753003	1/4/2017	RPOR	H3	127	183	281	Water

107713005	1/4/2017	RPOR	J-131	0	0	5.31969	Water
107713005	1/4/2017	RPOR	K-40	0	0	127.121	Water
107713005	1/4/2017	RPOR	LA-140	0	0	4.31652	Water
107713005	1/4/2017	RPOR	MN-54	0	0	4.95718	Water
107713005	1/4/2017	RPOR	NB-95	0	0	5.89512	Water
107713005	1/4/2017	RPOR	RA-226	0	0	0	Water
107713005	1/4/2017	RPOR	RA-228	0	0	0	Water
107713005	1/4/2017	RPOR	ZN-65	0	0	15.6149	Water
107713005	1/4/2017	RPOR	ZR-95	0	0	13.0417	Water
108330005	2/7/2017	RPOR	BA-140	0	0	23.9156	Water
108330005	2/7/2017	RPOR	BE-7	0	0	29.938	Water
108330005	2/7/2017	RPOR	CO-58	0	0	5.42669	Water
108330005	2/7/2017	RPOR	CO-60	0	0	6.38691	Water
108330005	2/7/2017	RPOR	CS-134	0	0	5.06098	Water
108330005	2/7/2017	RPOR	CS-137	0	0	4.13028	Water
108330005	2/7/2017	RPOR	FE-59	0	0	8.28543	Water
108329005	2/7/2017	RPOR	GROSSBETA	2.209	1.412	3.394	Water
108329005	2/7/2017	RPOR	GROSSBETA	2.209	1.412	3.394	Water
108329005	2/7/2017	RPOR	GROSSBETA	2.209	1.412	3.394	Water
108329005	2/7/2017	RPOR	GROSSBETA	2.209	1.412	3.394	Water
108330005	2/7/2017	RPOR	J-131	0	0	5.47059	Water
108330005	2/7/2017	RPOR	K-40	0	0	122.857	Water
108330005	2/7/2017	RPOR	LA-140	0	0	3.53182	Water
108330005	2/7/2017	RPOR	MN-54	0	0	3.19942	Water
108330005	2/7/2017	RPOR	NB-95	0	0	3.42489	Water
108330005	2/7/2017	RPOR	RA-226	0	0	0	Water
108330005	2/7/2017	RPOR	RA-228	0	0	0	Water
108330005	2/7/2017	RPOR	ZN-65	0	0	8.47375	Water
108330005	2/7/2017	RPOR	ZR-95	0	0	9.82044	Water
108721005	3/7/2017	RPOR	BA-140	0	0	23.7635	Water
108721005	3/7/2017	RPOR	BE-7	0	0	51.6112	Water
108721005	3/7/2017	RPOR	CO-58	0	0	4.09048	Water
108721005	3/7/2017	RPOR	CO-60	0	0	3.88337	Water
108721005	3/7/2017	RPOR	CS-134	0	0	3.81629	Water
108721005	3/7/2017	RPOR	CS-137	0	0	6.22691	Water
108721005	3/7/2017	RPOR	FE-59	0	0	12.1074	Water
108767005	3/7/2017	RPOR	GROSSBETA	2.852	1.447	4.066	Water
108767005	3/7/2017	RPOR	GROSSBETA	2.852	1.447	4.066	Water
108767005	3/7/2017	RPOR	GROSSBETA	2.852	1.447	4.066	Water
108767005	3/7/2017	RPOR	GROSSBETA	2.852	1.447	4.066	Water
108721005	3/7/2017	RPOR	J-131	0	0	7.97659	Water
108721005	3/7/2017	RPOR	K-40	0	0	118.246	Water
108721005	3/7/2017	RPOR	LA-140	0	0	6.57417	Water
108721005	3/7/2017	RPOR	MN-54	0	0	7.621	Water
108721005	3/7/2017	RPOR	NB-95	0	0	3.77233	Water
108721005	3/7/2017	RPOR	RA-226	0	0	0	Water
108721005	3/7/2017	RPOR	RA-228	0	0	0	Water

108721005	3/7/2017	RPOR	ZN-65	0	0	7.42076	Water
108721005	3/7/2017	RPOR	ZR-95	0	0	6.2949	Water
109215005	4/4/2017	RPOR	BA-140	0	0	31.0358	Water
109215005	4/4/2017	RPOR	BE-7	0	0	61.0974	Water
109215005	4/4/2017	RPOR	CO-58	0	0	5.75364	Water
109215005	4/4/2017	RPOR	CO-60	0	0	7.51568	Water
109215005	4/4/2017	RPOR	CS-134	0	0	8.75194	Water
109215005	4/4/2017	RPOR	CS-137	0	0	8.36609	Water
109215005	4/4/2017	RPOR	FE-59	0	0	4.56273	Water
109214005	4/4/2017	RPOR	GROSSBETA	3.57	1.528	4.853	Water
109214005	4/4/2017	RPOR	GROSSBETA	3.57	1.528	4.853	Water
109214005	4/4/2017	RPOR	GROSSBETA	3.57	1.528	4.853	Water
109214005	4/4/2017	RPOR	GROSSBETA	3.57	1.528	4.853	Water
109240005	4/4/2017	RPOR	H3	792	185	948	Water
109215005	4/4/2017	RPOR	J-131	0	0	7.62468	Water
109215005	4/4/2017	RPOR	K-40	0	0	101.205	Water
109215005	4/4/2017	RPOR	LA-140	0	0	7.3381	Water
109215005	4/4/2017	RPOR	MN-54	0	0	6.517	Water
109215005	4/4/2017	RPOR	NB-95	0	0	8.17854	Water
109215005	4/4/2017	RPOR	RA-226	0	0	0	Water
109215005	4/4/2017	RPOR	RA-228	0	0	0	Water
109215005	4/4/2017	RPOR	ZN-65	0	0	6.25835	Water
109215005	4/4/2017	RPOR	ZR-95	0	0	13.0605	Water
109660005	5/2/2017	RPOR	BA-140	0	0	22.6093	Water
109660005	5/2/2017	RPOR	BE-7	0	0	32.4708	Water
109660005	5/2/2017	RPOR	CO-58	0	0	5.28212	Water
109660005	5/2/2017	RPOR	CO-60	0	0	7.80097	Water
109660005	5/2/2017	RPOR	CS-134	0	0	3.76196	Water
109660005	5/2/2017	RPOR	CS-137	0	0	3.52651	Water
109660005	5/2/2017	RPOR	FE-59	0	0	11.2188	Water
109659005	5/2/2017	RPOR	GROSSBETA	1.795	1.331	2.912	Water
109659005	5/2/2017	RPOR	GROSSBETA	1.795	1.331	2.912	Water
109659005	5/2/2017	RPOR	GROSSBETA	1.795	1.331	2.912	Water
109659005	5/2/2017	RPOR	GROSSBETA	1.795	1.331	2.912	Water
109660005	5/2/2017	RPOR	J-131	0	0	9.5277	Water
109660005	5/2/2017	RPOR	K-40	0	0	99.8961	Water
109660005	5/2/2017	RPOR	LA-140	0	0	10.5138	Water
109660005	5/2/2017	RPOR	MN-54	0	0	9.09461	Water
109660005	5/2/2017	RPOR	NB-95	0	0	7.78113	Water
109660005	5/2/2017	RPOR	RA-226	0	0	0	Water
109660005	5/2/2017	RPOR	RA-228	0	0	0	Water
109660005	5/2/2017	RPOR	ZN-65	0	0	13.1298	Water
109660005	5/2/2017	RPOR	ZR-95	0	0	9.97645	Water
110258005	6/6/2017	RPOR	BA-140	0	0	19.1936	Water
110258005	6/6/2017	RPOR	BE-7	0	0	73.6518	Water
110258005	6/6/2017	RPOR	CO-58	0	0	2.67662	Water
110258005	6/6/2017	RPOR	CO-60	0	0	8.06163	Water

110258005	6/6/2017	RPOR	CS-134	0	0	7.40076	Water
110258005	6/6/2017	RPOR	CS-137	0	0	6.50912	Water
110258005	6/6/2017	RPOR	FE-59	0	0	6.21306	Water
110257005	6/6/2017	RPOR	GROSSBETA	2.663	1.487	3.911	Water
110257005	6/6/2017	RPOR	GROSSBETA	2.663	1.487	3.911	Water
110257005	6/6/2017	RPOR	GROSSBETA	2.663	1.487	3.911	Water
110257005	6/6/2017	RPOR	GROSSBETA	2.663	1.487	3.911	Water
110258005	6/6/2017	RPOR	J-131	0	0	7.76924	Water
110258005	6/6/2017	RPOR	K-40	0	0	146.966	Water
110258005	6/6/2017	RPOR	LA-140	0	0	7.76331	Water
110258005	6/6/2017	RPOR	MN-54	0	0	6.94678	Water
110258005	6/6/2017	RPOR	NB-95	0	0	4.18251	Water
110258005	6/6/2017	RPOR	RA-226	0	0	0	Water
110258005	6/6/2017	RPOR	RA-228	0	0	0	Water
110258005	6/6/2017	RPOR	ZN-65	0	0	12.7124	Water
110258005	6/6/2017	RPOR	ZR-95	0	0	13.0015	Water
110800005	7/5/2017	RPOR	BA-140	0	0	20.4424	Water
110800005	7/5/2017	RPOR	BE-7	0	0	46.1296	Water
110800005	7/5/2017	RPOR	CO-58	0	0	2.89472	Water
110800005	7/5/2017	RPOR	CO-60	0	0	2.20743	Water
110800005	7/5/2017	RPOR	CS-134	0	0	6.14581	Water
110800005	7/5/2017	RPOR	CS-137	0	0	5.54481	Water
110800005	7/5/2017	RPOR	FE-59	0	0	13.563	Water
110798005	7/5/2017	RPOR	GROSSBETA	3.138	1.537	4.428	Water
110798005	7/5/2017	RPOR	GROSSBETA	3.138	1.537	4.428	Water
110798005	7/5/2017	RPOR	GROSSBETA	3.138	1.537	4.428	Water
110798005	7/5/2017	RPOR	GROSSBETA	3.138	1.537	4.428	Water
110869005	7/5/2017	RPOR	H3	223	172	367	Water
110800005	7/5/2017	RPOR	J-131	0	0	7.1384	Water
110800005	7/5/2017	RPOR	K-40	0	0	125.434	Water
110800005	7/5/2017	RPOR	LA-140	0	0	4.91705	Water
110800005	7/5/2017	RPOR	MN-54	0	0	7.23403	Water
110800005	7/5/2017	RPOR	NB-95	0	0	6.25796	Water
110800005	7/5/2017	RPOR	RA-226	0	0	0	Water
110800005	7/5/2017	RPOR	RA-228	0	0	0	Water
110800005	7/5/2017	RPOR	ZN-65	0	0	11.5237	Water
110800005	7/5/2017	RPOR	ZR-95	0	0	7.0589	Water
111395005	8/7/2017	RPOR	BA-140	0	0	20.8295	Water
111395005	8/7/2017	RPOR	BE-7	0	0	57.9638	Water
111395005	8/7/2017	RPOR	CO-58	0	0	3.36382	Water
111395005	8/7/2017	RPOR	CO-60	0	0	3.58563	Water
111395005	8/7/2017	RPOR	CS-134	0	0	6.39348	Water
111395005	8/7/2017	RPOR	CS-137	0	0	4.33085	Water
111395005	8/7/2017	RPOR	FE-59	0	0	13.4981	Water
111394005	8/7/2017	RPOR	GROSSBETA	5.078	1.775	6.568	Water
111394005	8/7/2017	RPOR	GROSSBETA	5.078	1.775	6.568	Water
111394005	8/7/2017	RPOR	GROSSBETA	5.078	1.775	6.568	Water

111394005	8/7/2017	RPOR	GROSSBETA	5.078	1.775	6.568	Water
111395005	8/7/2017	RPOR	J-131	0	0	4.27405	Water
111395005	8/7/2017	RPOR	K-40	0	0	127.504	Water
111395005	8/7/2017	RPOR	LA-140	0	0	6.01942	Water
111395005	8/7/2017	RPOR	MN-54	0	0	6.14369	Water
111395005	8/7/2017	RPOR	NB-95	0	0	4.07151	Water
111395005	8/7/2017	RPOR	RA-226	0	0	0	Water
111395005	8/7/2017	RPOR	RA-228	0	0	0	Water
111395005	8/7/2017	RPOR	ZN-65	0	0	12.7377	Water
111395005	8/7/2017	RPOR	ZR-95	0	0	7.92288	Water
111905005	9/5/2017	RPOR	BA-140	0	0	30.7157	Water
111905005	9/5/2017	RPOR	BE-7	0	0	42.3122	Water
111905005	9/5/2017	RPOR	CO-58	0	0	6.98981	Water
111905005	9/5/2017	RPOR	CO-60	0	0	5.94519	Water
111905005	9/5/2017	RPOR	CS-134	0	0	6.67857	Water
111905005	9/5/2017	RPOR	CS-137	0	0	5.16332	Water
111905005	9/5/2017	RPOR	FE-59	0	0	12.7804	Water
111907005	9/5/2017	RPOR	GROSSBETA	3.655	1.504	4.918	Water
111907005	9/5/2017	RPOR	GROSSBETA	3.655	1.504	4.918	Water
111907005	9/5/2017	RPOR	GROSSBETA	3.655	1.504	4.918	Water
111907005	9/5/2017	RPOR	GROSSBETA	3.655	1.504	4.918	Water
111905005	9/5/2017	RPOR	J-131	0	0	6.20641	Water
111905005	9/5/2017	RPOR	K-40	0	0	136.238	Water
111905005	9/5/2017	RPOR	LA-140	0	0	4.76813	Water
111905005	9/5/2017	RPOR	MN-54	0	0	5.81286	Water
111905005	9/5/2017	RPOR	NB-95	0	0	3.42509	Water
111905005	9/5/2017	RPOR	RA-226	0	0	0	Water
111905005	9/5/2017	RPOR	RA-228	0	0	0	Water
111905005	9/5/2017	RPOR	ZN-65	0	0	5.92663	Water
111905005	9/5/2017	RPOR	ZR-95	0	0	7.15885	Water
112429005	10/2/2017	RPOR	BA-140	0	0	12.5161	Water
112429005	10/2/2017	RPOR	BE-7	0	0	57.5768	Water
112429005	10/2/2017	RPOR	CO-58	0	0	7.3841	Water
112429005	10/2/2017	RPOR	CO-60	0	0	4.55896	Water
112429005	10/2/2017	RPOR	CS-134	0	0	6.75631	Water
112429005	10/2/2017	RPOR	CS-137	0	0	4.23858	Water
112429005	10/2/2017	RPOR	FE-59	0	0	5.61165	Water
112428005	10/2/2017	RPOR	GROSSBETA	4.28	1.954	5.92	Water
112428005	10/2/2017	RPOR	GROSSBETA	4.28	1.954	5.92	Water
112428005	10/2/2017	RPOR	GROSSBETA	4.28	1.954	5.92	Water
112428005	10/2/2017	RPOR	GROSSBETA	4.28	1.954	5.92	Water
112455005	10/2/2017	RPOR	H3	550	185	706	Water
112429005	10/2/2017	RPOR	J-131	0	0	6.00836	Water
112429005	10/2/2017	RPOR	K-40	0	0	114.28	Water
112429005	10/2/2017	RPOR	LA-140	0	0	3.75053	Water
112429005	10/2/2017	RPOR	MN-54	0	0	7.95497	Water
112429005	10/2/2017	RPOR	NB-95	0	0	3.70592	Water

112429005	10/2/2017	RPOR	RA-226	0	0	0	Water
112429005	10/2/2017	RPOR	RA-228	0	0	0	Water
112429005	10/2/2017	RPOR	ZN-65	0	0	12.4061	Water
112429005	10/2/2017	RPOR	ZR-95	0	0	10.1857	Water
112992005	11/7/2017	RPOR	BA-140	0	0	14.6831	Water
112992005	11/7/2017	RPOR	BE-7	0	0	32.8257	Water
112992005	11/7/2017	RPOR	CO-58	0	0	4.20364	Water
112992005	11/7/2017	RPOR	CO-60	0	0	3.64662	Water
112992005	11/7/2017	RPOR	CS-134	0	0	3.44746	Water
112992005	11/7/2017	RPOR	CS-137	0	0	7.10451	Water
112992005	11/7/2017	RPOR	FE-59	0	0	6.6178	Water
112993005	11/7/2017	RPOR	GROSSBETA	3.394	1.761	4.872	Water
112993005	11/7/2017	RPOR	GROSSBETA	3.394	1.761	4.872	Water
112993005	11/7/2017	RPOR	GROSSBETA	3.394	1.761	4.872	Water
112993005	11/7/2017	RPOR	GROSSBETA	3.394	1.761	4.872	Water
112992005	11/7/2017	RPOR	J-131	0	0	6.56985	Water
112992005	11/7/2017	RPOR	K-40	0	0	93.9788	Water
112992005	11/7/2017	RPOR	LA-140	0	0	7.00416	Water
112992005	11/7/2017	RPOR	MN-54	0	0	7.48701	Water
112992005	11/7/2017	RPOR	NB-95	0	0	4.95677	Water
112992005	11/7/2017	RPOR	RA-226	0	0	0	Water
112992005	11/7/2017	RPOR	RA-228	0	0	0	Water
112992005	11/7/2017	RPOR	ZN-65	0	0	10.0693	Water
112992005	11/7/2017	RPOR	ZR-95	0	0	6.73402	Water
113340005	12/4/2017	RPOR	BA-140	0	0	21.0457	Water
113340005	12/4/2017	RPOR	BE-7	0	0	37.0299	Water
113340005	12/4/2017	RPOR	CO-58	0	0	4.32476	Water
113340005	12/4/2017	RPOR	CO-60	0	0	5.67943	Water
113340005	12/4/2017	RPOR	CS-134	0	0	6.1275	Water
113340005	12/4/2017	RPOR	CS-137	0	0	3.10235	Water
113340005	12/4/2017	RPOR	FE-59	0	0	10.9942	Water
113341005	12/4/2017	RPOR	GROSSBETA	2.894	1.775	4.384	Water
113341005	12/4/2017	RPOR	GROSSBETA	2.894	1.775	4.384	Water
113341005	12/4/2017	RPOR	GROSSBETA	2.894	1.775	4.384	Water
113341005	12/4/2017	RPOR	GROSSBETA	2.894	1.775	4.384	Water
113340005	12/4/2017	RPOR	J-131	0	0	6.89028	Water
113340005	12/4/2017	RPOR	K-40	0	0	104.873	Water
113340005	12/4/2017	RPOR	LA-140	0	0	6.82796	Water
113340005	12/4/2017	RPOR	MN-54	0	0	4.32834	Water
113340005	12/4/2017	RPOR	NB-95	0	0	6.22678	Water
113340005	12/4/2017	RPOR	RA-226	0	0	0	Water
113340005	12/4/2017	RPOR	RA-228	0	0	0	Water
113340005	12/4/2017	RPOR	ZN-65	0	0	9.61558	Water
113340005	12/4/2017	RPOR	ZR-95	0	0	11.6292	Water
107713003	1/3/2017	RPUR	BA-140	0	0	17.0929	Water
107713003	1/3/2017	RPUR	BE-7	0	0	34.8325	Water
107713003	1/3/2017	RPUR	CO-58	0	0	4.78745	Water

107713003	1/3/2017	RPUR	CO-60	0	0	3.99807	Water
107713003	1/3/2017	RPUR	CS-134	0	0	5.00029	Water
107713003	1/3/2017	RPUR	CS-137	0	0	6.18771	Water
107713003	1/3/2017	RPUR	FE-59	0	0	4.24427	Water
107712003	1/3/2017	RPUR	GROSSBETA	1.836	1.32	2.943	Water
107712003	1/3/2017	RPUR	GROSSBETA	1.836	1.32	2.943	Water
107712003	1/3/2017	RPUR	GROSSBETA	1.836	1.32	2.943	Water
107712003	1/3/2017	RPUR	GROSSBETA	1.836	1.32	2.943	Water
107753001	1/3/2017	RPUR	H3	145	187	302	Water
107713003	1/3/2017	RPUR	J-131	0	0	3.41965	Water
107713003	1/3/2017	RPUR	K-40	0	0	83.2432	Water
107713003	1/3/2017	RPUR	LA-140	0	0	7.54284	Water
107713003	1/3/2017	RPUR	MN-54	0	0	5.53167	Water
107713003	1/3/2017	RPUR	NB-95	0	0	6.19543	Water
107713003	1/3/2017	RPUR	RA-226	0	0	0	Water
107713003	1/3/2017	RPUR	RA-228	0	0	0	Water
107713003	1/3/2017	RPUR	ZN-65	0	0	6.10726	Water
107713003	1/3/2017	RPUR	ZR-95	0	0	8.7591	Water
108330003	2/6/2017	RPUR	BA-140	0	0	11.2945	Water
108330003	2/6/2017	RPUR	BE-7	0	0	42.7373	Water
108330003	2/6/2017	RPUR	CO-58	0	0	4.61349	Water
108330003	2/6/2017	RPUR	CO-60	0	0	6.02128	Water
108330003	2/6/2017	RPUR	CS-134	0	0	3.93722	Water
108330003	2/6/2017	RPUR	CS-137	0	0	2.34402	Water
108330003	2/6/2017	RPUR	FE-59	0	0	9.02987	Water
108329003	2/6/2017	RPUR	GROSSBETA	.6624	1.215	1.682	Water
108329003	2/6/2017	RPUR	GROSSBETA	.6624	1.215	1.682	Water
108329003	2/6/2017	RPUR	GROSSBETA	.6624	1.215	1.682	Water
108329003	2/6/2017	RPUR	GROSSBETA	.6624	1.215	1.682	Water
108330003	2/6/2017	RPUR	J-131	0	0	5.94382	Water
108330003	2/6/2017	RPUR	K-40	0	0	70.8183	Water
108330003	2/6/2017	RPUR	LA-140	0	0	7.87641	Water
108330003	2/6/2017	RPUR	MN-54	0	0	5.77744	Water
108330003	2/6/2017	RPUR	NB-95	0	0	5.37279	Water
108330003	2/6/2017	RPUR	RA-226	0	0	0	Water
108330003	2/6/2017	RPUR	RA-228	0	0	0	Water
108330003	2/6/2017	RPUR	ZN-65	0	0	10.6546	Water
108330003	2/6/2017	RPUR	ZR-95	0	0	9.85845	Water
108721003	3/6/2017	RPUR	BA-140	0	0	10.6125	Water
108721003	3/6/2017	RPUR	BE-7	0	0	43.8551	Water
108721003	3/6/2017	RPUR	CO-58	0	0	6.19616	Water
108721003	3/6/2017	RPUR	CO-60	0	0	2.86637	Water
108721003	3/6/2017	RPUR	CS-134	0	0	6.84505	Water
108721003	3/6/2017	RPUR	CS-137	0	0	3.96424	Water
108721003	3/6/2017	RPUR	FE-59	0	0	12.748	Water
108767003	3/6/2017	RPUR	GROSSBETA	2.014	1.366	3.161	Water
108767003	3/6/2017	RPUR	GROSSBETA	2.014	1.366	3.161	Water

108767003	3/6/2017	RPUR	GROSSBETA	2.014	1.366	3.161	Water
108767003	3/6/2017	RPUR	GROSSBETA	2.014	1.366	3.161	Water
108721003	3/6/2017	RPUR	J-131	0	0	4.74101	Water
108721003	3/6/2017	RPUR	K-40	0	0	94.328	Water
108721003	3/6/2017	RPUR	LA-140	0	0	4.60634	Water
108721003	3/6/2017	RPUR	MN-54	0	0	2.66623	Water
108721003	3/6/2017	RPUR	NB-95	0	0	7.02406	Water
108721003	3/6/2017	RPUR	RA-226	0	0	0	Water
108721003	3/6/2017	RPUR	RA-228	0	0	0	Water
108721003	3/6/2017	RPUR	ZN-65	0	0	11.191	Water
108721003	3/6/2017	RPUR	ZR-95	0	0	9.43076	Water
109215003	4/3/2017	RPUR	BA-140	0	0	22.9793	Water
109215003	4/3/2017	RPUR	BE-7	0	0	49.8204	Water
109215003	4/3/2017	RPUR	CO-58	0	0	6.57414	Water
109215003	4/3/2017	RPUR	CO-60	0	0	6.54217	Water
109215003	4/3/2017	RPUR	CS-134	0	0	6.81503	Water
109215003	4/3/2017	RPUR	CS-137	0	0	5.02207	Water
109215003	4/3/2017	RPUR	FE-59	0	0	6.78227	Water
109214003	4/3/2017	RPUR	GROSSBETA	2.31	1.375	3.465	Water
109214003	4/3/2017	RPUR	GROSSBETA	2.31	1.375	3.465	Water
109214003	4/3/2017	RPUR	GROSSBETA	2.31	1.375	3.465	Water
109214003	4/3/2017	RPUR	GROSSBETA	2.31	1.375	3.465	Water
109240003	4/3/2017	RPUR	H3	776	183	930	Water
109215003	4/3/2017	RPUR	J-131	0	0	4.17511	Water
109215003	4/3/2017	RPUR	K-40	0	0	132.849	Water
109215003	4/3/2017	RPUR	LA-140	0	0	4.56107	Water
109215003	4/3/2017	RPUR	MN-54	0	0	6.49055	Water
109215003	4/3/2017	RPUR	NB-95	0	0	6.94596	Water
109215003	4/3/2017	RPUR	RA-226	0	0	0	Water
109215003	4/3/2017	RPUR	RA-228	0	0	0	Water
109215003	4/3/2017	RPUR	ZN-65	0	0	7.41273	Water
109215003	4/3/2017	RPUR	ZR-95	0	0	6.9571	Water
109660003	5/1/2017	RPUR	BA-140	0	0	23.7886	Water
109660003	5/1/2017	RPUR	BE-7	0	0	61.1296	Water
109660003	5/1/2017	RPUR	CO-58	0	0	4.14871	Water
109660003	5/1/2017	RPUR	CO-60	0	0	9.61414	Water
109660003	5/1/2017	RPUR	CS-134	0	0	5.47665	Water
109660003	5/1/2017	RPUR	CS-137	0	0	10.7856	Water
109660003	5/1/2017	RPUR	FE-59	0	0	8.80887	Water
109659003	5/1/2017	RPUR	GROSSBETA	2.012	1.342	3.138	Water
109659003	5/1/2017	RPUR	GROSSBETA	2.012	1.342	3.138	Water
109659003	5/1/2017	RPUR	GROSSBETA	2.012	1.342	3.138	Water
109659003	5/1/2017	RPUR	GROSSBETA	2.012	1.342	3.138	Water
109660003	5/1/2017	RPUR	J-131	0	0	4.79146	Water
109660003	5/1/2017	RPUR	K-40	0	0	155.39	Water
109660003	5/1/2017	RPUR	LA-140	0	0	6.07081	Water
109660003	5/1/2017	RPUR	MN-54	0	0	5.50788	Water

109660003	5/1/2017	RPUR	NB-95	0	0	5.57503	Water
109660003	5/1/2017	RPUR	RA-226	0	0	0	Water
109660003	5/1/2017	RPUR	RA-228	0	0	0	Water
109660003	5/1/2017	RPUR	ZN-65	0	0	8.55745	Water
109660003	5/1/2017	RPUR	ZR-95	0	0	10.8745	Water
110258003	6/5/2017	RPUR	BA-140	0	0	18.0497	Water
110258003	6/5/2017	RPUR	BE-7	0	0	47.4627	Water
110258003	6/5/2017	RPUR	CO-58	0	0	4.1867	Water
110258003	6/5/2017	RPUR	CO-60	0	0	5.85206	Water
110258003	6/5/2017	RPUR	CS-134	0	0	7.25807	Water
110258003	6/5/2017	RPUR	CS-137	0	0	4.62513	Water
110258003	6/5/2017	RPUR	FE-59	0	0	15.7078	Water
110257003	6/5/2017	RPUR	GROSSBETA	2.446	1.48	3.688	Water
110257003	6/5/2017	RPUR	GROSSBETA	2.446	1.48	3.688	Water
110257003	6/5/2017	RPUR	GROSSBETA	2.446	1.48	3.688	Water
110257003	6/5/2017	RPUR	GROSSBETA	2.446	1.48	3.688	Water
110258003	6/5/2017	RPUR	J-131	0	0	8.0244	Water
110258003	6/5/2017	RPUR	K-40	0	0	91.2751	Water
110258003	6/5/2017	RPUR	LA-140	0	0	9.21828	Water
110258003	6/5/2017	RPUR	MN-54	0	0	5.74587	Water
110258003	6/5/2017	RPUR	NB-95	0	0	7.43476	Water
110258003	6/5/2017	RPUR	RA-226	0	0	0	Water
110258003	6/5/2017	RPUR	RA-228	0	0	0	Water
110258003	6/5/2017	RPUR	ZN-65	0	0	16.9714	Water
110258003	6/5/2017	RPUR	ZR-95	0	0	9.21942	Water
110800003	7/5/2017	RPUR	BA-140	0	0	22.5287	Water
110800003	7/5/2017	RPUR	BE-7	0	0	48.517	Water
110800003	7/5/2017	RPUR	CO-58	0	0	4.77556	Water
110800003	7/5/2017	RPUR	CO-60	0	0	3.02539	Water
110800003	7/5/2017	RPUR	CS-134	0	0	5.49235	Water
110800003	7/5/2017	RPUR	CS-137	0	0	5.86519	Water
110800003	7/5/2017	RPUR	FE-59	0	0	6.0319	Water
110798003	7/5/2017	RPUR	GROSSBETA	2.456	1.456	3.677	Water
110798003	7/5/2017	RPUR	GROSSBETA	2.456	1.456	3.677	Water
110798003	7/5/2017	RPUR	GROSSBETA	2.456	1.456	3.677	Water
110798003	7/5/2017	RPUR	GROSSBETA	2.456	1.456	3.677	Water
110869003	7/5/2017	RPUR	H3	418	172	562	Water
110800003	7/5/2017	RPUR	J-131	0	0	7.41499	Water
110800003	7/5/2017	RPUR	K-40	0	0	82.7607	Water
110800003	7/5/2017	RPUR	LA-140	0	0	3.05477	Water
110800003	7/5/2017	RPUR	MN-54	0	0	3.18021	Water
110800003	7/5/2017	RPUR	NB-95	0	0	6.45578	Water
110800003	7/5/2017	RPUR	RA-226	0	0	0	Water
110800003	7/5/2017	RPUR	RA-228	0	0	0	Water
110800003	7/5/2017	RPUR	ZN-65	0	0	6.43084	Water
110800003	7/5/2017	RPUR	ZR-95	0	0	8.04552	Water
111395003	8/7/2017	RPUR	BA-140	0	0	15.4063	Water

111395003	8/7/2017	RPUR	BE-7	0	0	47.2242	Water
111395003	8/7/2017	RPUR	CO-58	0	0	6.79841	Water
111395003	8/7/2017	RPUR	CO-60	0	0	6.01109	Water
111395003	8/7/2017	RPUR	CS-134	0	0	3.44032	Water
111395003	8/7/2017	RPUR	CS-137	0	0	5.28809	Water
111395003	8/7/2017	RPUR	FE-59	0	0	11.7279	Water
111394003	8/7/2017	RPUR	GROSSBETA	5.961	2.475	8.038	Water
111394003	8/7/2017	RPUR	GROSSBETA	5.961	2.475	8.038	Water
111394003	8/7/2017	RPUR	GROSSBETA	5.961	2.475	8.038	Water
111394003	8/7/2017	RPUR	GROSSBETA	5.961	2.475	8.038	Water
111395003	8/7/2017	RPUR	J-131	0	0	9.17349	Water
111395003	8/7/2017	RPUR	K-40	0	0	134.25	Water
111395003	8/7/2017	RPUR	LA-140	0	0	3.6421	Water
111395003	8/7/2017	RPUR	MN-54	0	0	4.62393	Water
111395003	8/7/2017	RPUR	NB-95	0	0	9.2392	Water
111395003	8/7/2017	RPUR	RA-226	0	0	0	Water
111395003	8/7/2017	RPUR	RA-228	0	0	0	Water
111395003	8/7/2017	RPUR	ZN-65	0	0	12.0277	Water
111395003	8/7/2017	RPUR	ZR-95	0	0	14.1815	Water
111905003	9/5/2017	RPUR	BA-140	0	0	32.6681	Water
111905003	9/5/2017	RPUR	BE-7	0	0	32.5446	Water
111905003	9/5/2017	RPUR	CO-58	0	0	6.1778	Water
111905003	9/5/2017	RPUR	CO-60	0	0	3.76815	Water
111905003	9/5/2017	RPUR	CS-134	0	0	3.55568	Water
111905003	9/5/2017	RPUR	CS-137	0	0	9.17137	Water
111905003	9/5/2017	RPUR	FE-59	0	0	7.63483	Water
111907003	9/5/2017	RPUR	GROSSBETA	2.939	1.446	4.153	Water
111907003	9/5/2017	RPUR	GROSSBETA	2.939	1.446	4.153	Water
111907003	9/5/2017	RPUR	GROSSBETA	2.939	1.446	4.153	Water
111907003	9/5/2017	RPUR	GROSSBETA	2.939	1.446	4.153	Water
111905003	9/5/2017	RPUR	J-131	0	0	10.7825	Water
111905003	9/5/2017	RPUR	K-40	0	0	134.505	Water
111905003	9/5/2017	RPUR	LA-140	0	0	5.95822	Water
111905003	9/5/2017	RPUR	MN-54	0	0	7.67037	Water
111905003	9/5/2017	RPUR	NB-95	0	0	4.21548	Water
111905003	9/5/2017	RPUR	RA-226	0	0	0	Water
111905003	9/5/2017	RPUR	RA-228	0	0	0	Water
111905003	9/5/2017	RPUR	ZN-65	0	0	6.44777	Water
111905003	9/5/2017	RPUR	ZR-95	0	0	8.84483	Water
112429003	10/2/2017	RPUR	BA-140	0	0	28.6094	Water
112429003	10/2/2017	RPUR	BE-7	0	0	53.9895	Water
112429003	10/2/2017	RPUR	CO-58	0	0	4.05683	Water
112429003	10/2/2017	RPUR	CO-60	0	0	3.97659	Water
112429003	10/2/2017	RPUR	CS-134	0	0	3.88036	Water
112429003	10/2/2017	RPUR	CS-137	0	0	5.02076	Water
112429003	10/2/2017	RPUR	FE-59	0	0	8.01107	Water
112428003	10/2/2017	RPUR	GROSSBETA	2.503	1.741	3.964	Water

112428003	10/2/2017	RPUR	GROSSBETA	2.503	1.741	3.964	Water
112428003	10/2/2017	RPUR	GROSSBETA	2.503	1.741	3.964	Water
112428003	10/2/2017	RPUR	GROSSBETA	2.503	1.741	3.964	Water
112455003	10/2/2017	RPUR	H3	745	188	902	Water
112429003	10/2/2017	RPUR	J-131	0	0	7.00328	Water
112429003	10/2/2017	RPUR	K-40	0	0	149.939	Water
112429003	10/2/2017	RPUR	LA-140	0	0	6.30356	Water
112429003	10/2/2017	RPUR	MN-54	0	0	9.90132	Water
112429003	10/2/2017	RPUR	NB-95	0	0	4.16541	Water
112429003	10/2/2017	RPUR	RA-226	0	0	0	Water
112429003	10/2/2017	RPUR	RA-228	0	0	0	Water
112429003	10/2/2017	RPUR	ZN-65	0	0	10.286	Water
112429003	10/2/2017	RPUR	ZR-95	0	0	7.36993	Water
112992003	11/7/2017	RPUR	BA-140	0	0	20.9103	Water
112992003	11/7/2017	RPUR	BE-7	0	0	24.0928	Water
112992003	11/7/2017	RPUR	CO-58	0	0	4.69443	Water
112992003	11/7/2017	RPUR	CO-60	0	0	5.42504	Water
112992003	11/7/2017	RPUR	CS-134	0	0	5.14557	Water
112992003	11/7/2017	RPUR	CS-137	0	0	4.55447	Water
112992003	11/7/2017	RPUR	FE-59	0	0	11.6982	Water
112993003	11/7/2017	RPUR	GROSSBETA	3.169	1.705	4.6	Water
112993003	11/7/2017	RPUR	GROSSBETA	3.169	1.705	4.6	Water
112993003	11/7/2017	RPUR	GROSSBETA	3.169	1.705	4.6	Water
112993003	11/7/2017	RPUR	GROSSBETA	3.169	1.705	4.6	Water
112992003	11/7/2017	RPUR	J-131	0	0	3.72518	Water
112992003	11/7/2017	RPUR	K-40	0	0	94.6279	Water
112992003	11/7/2017	RPUR	LA-140	0	0	5.9907	Water
112992003	11/7/2017	RPUR	MN-54	0	0	4.00412	Water
112992003	11/7/2017	RPUR	NB-95	0	0	4.29551	Water
112992003	11/7/2017	RPUR	RA-226	0	0	0	Water
112992003	11/7/2017	RPUR	RA-228	0	0	0	Water
112992003	11/7/2017	RPUR	ZN-65	0	0	9.58343	Water
112992003	11/7/2017	RPUR	ZR-95	0	0	6.59962	Water
113340003	12/4/2017	RPUR	BA-140	0	0	23.1545	Water
113340003	12/4/2017	RPUR	BE-7	0	0	26.7244	Water
113340003	12/4/2017	RPUR	CO-58	0	0	4.26422	Water
113340003	12/4/2017	RPUR	CO-60	0	0	2.38551	Water
113340003	12/4/2017	RPUR	CS-134	0	0	7.15465	Water
113340003	12/4/2017	RPUR	CS-137	0	0	3.51041	Water
113340003	12/4/2017	RPUR	FE-59	0	0	7.14484	Water
113341003	12/4/2017	RPUR	GROSSBETA	2.285	1.707	3.718	Water
113341003	12/4/2017	RPUR	GROSSBETA	2.285	1.707	3.718	Water
113341003	12/4/2017	RPUR	GROSSBETA	2.285	1.707	3.718	Water
113341003	12/4/2017	RPUR	GROSSBETA	2.285	1.707	3.718	Water
113340003	12/4/2017	RPUR	J-131	0	0	8.16381	Water
113340003	12/4/2017	RPUR	K-40	0	0	108.81	Water
113340003	12/4/2017	RPUR	LA-140	0	0	7.06052	Water

113340003	12/4/2017	RPUR	MN-54	0	0	5.60251	Water
113340003	12/4/2017	RPUR	NB-95	0	0	6.30494	Water
113340003	12/4/2017	RPUR	RA-226	0	0	0	Water
113340003	12/4/2017	RPUR	RA-228	0	0	0	Water
113340003	12/4/2017	RPUR	ZN-65	0	0	6.6465	Water
113340003	12/4/2017	RPUR	ZR-95	0	0	16.8485	Water

Direct Radiation

	Q1	Q2	Q3	Q4
V01A	15.537	16.588	17.696	13.951
V02A	13.122	14.569	11.717	8.606
V03A	16.141	18.394	17.299	14.036
V04A	12.716	13.640	13.361	10.117
V05A	10.804	12.859	12.976	8.593
V06A	10.465	10.893	8.863	4.537
V07A	12.265	13.237	10.650	7.849
V08A	9.675	11.421	10.281	6.756
V09A	11.233	12.031	9.353	6.951
V10A	10.706	12.787	12.119	6.929
V11A	10.794	13.287	11.849	7.440
V12A	11.134	13.696	13.358	8.403
V13A	11.834	12.541	10.489	5.807
V14A	10.529	11.963	10.511	8.030
V15A	12.897	14.676	12.941	8.087
V16A	11.611	11.869	11.708	5.362
V17A	12.483	11.877	13.326	6.965
V18A	11.421	13.044	12.172	8.171
V19A	15.649	13.816	16.021	11.059
V20A	19.936	18.736	19.203	14.952
V21A	11.901	12.402	12.905	7.298
V22A	15.491	16.709	14.476	11.662
V23A	12.937	13.382	11.645	8.610
V24A	8.136	12.119	11.008	5.563
V25A	6.786	10.889	6.983	3.785
V26A	8.993	12.555	9.206	6.244
V27A	9.564	13.092	8.785	6.435
V28A	11.340	11.982	12.215	
V29A	17.854	17.985	16.144	11.658
V30A	12.029	14.047	14.023	8.200
V31A	9.801	11.219	10.164	4.889
V32A	14.666	15.469	16.838	10.409
V35A	12.736	15.677	13.831	10.429
V36A	14.244	16.076	14.438	10.066
V37A	12.072	13.673	10.908	7.261
V43A	12.425	13.353	11.640	6.983
V47A	10.454	12.676	10.759	6.341
V48A	11.376	11.010	10.682	6.899
V51A	10.284	10.586	11.602	8.571
V52A	12.616	14.620	16.029	10.140