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# ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

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**DUKE ENERGY CORPORATION  
MCGUIRE NUCLEAR STATION  
Units 1 and 2**

**2016**



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**LIST OF ACRONYMS USED IN THIS TEXT** *(in alphabetical order)*

AREOR	Annual Radiological Environmental Operating Report
ARERR	Annual Radiological Effluent Release Report
BW	BiWeekly
C	Control
CR	Condition Report (analogous to Nuclear Condition Report (NCR))
DEHNR	Department of Health and Natural Resources
ERA	Environmental Resource Associates
EZA	Eckert & Ziegler Analytics
GEL	General Engineering Laboratory
GI-LLI	Gastrointestinal – Lower Large Intestine
GPS	Global Positioning System
I	Indicator
IR	Inner Ring
ISFSI	Independent Spent Fuel Storage Installation
LLD	Lower Limit of Detection
LLI	Low Level Iodine
M	Monthly
MDA	Minimum Detectable Activity
MNS	McGuire Nuclear Station
mrem	Millirem
MWe	Megawatt (electrical)
NIST	National Institute of Standards and Technology
NCR	Nuclear Condition Report (analogous to Condition Report (CR))
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OR	Outer Ring
pCi/kg	picocurie per kilogram
pCi/l	picocurie per liter
pCi/m <sup>3</sup>	picocurie per cubic meter
Q	Quarterly
REMP	Radiological Environmental Monitoring Program
SA	Semiannually
SI	Special Interest
SLCs	Selected Licensee Commitments
SM	Semimonthly
T. Body	Total Body
TECH SPECS	Technical Specifications
TLD	Thermoluminescent Dosimeter
μCi/ml	microcurie per milliliter
UFSAR	Updated Final Safety Analysis Report
W	Weekly

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# 1.0 EXECUTIVE SUMMARY

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This Annual Radiological Environmental Operating Report describes the McGuire Nuclear Station Radiological Environmental Monitoring Program (REMP), and the program results for the calendar year 2016.

Included are the identification of sampling locations, descriptions of environmental sampling and analysis procedures, comparisons of present environmental radioactivity levels and pre-operational environmental data, comparisons of doses calculated from environmental measurements and effluent data, analysis of trends in environmental radiological data as potentially affected by station operations, and a summary of environmental radiological sampling results. Quality assurance practices, sampling deviations, unavailable samples, and program changes are also discussed.

Sampling activities were conducted as prescribed by Selected Licensee Commitments (SLC's). Required analyses were performed and detection capabilities were met for all collected samples as required by SLC's. Eleven hundred fifty-four samples were analyzed comprising 1,245 test results in order to compile data for the 2016 report. Based on the annual land use census, the current number of sampling sites for McGuire Nuclear Station is sufficient.

Concentrations observed in the environment in 2016 for station related radionuclides were generally within the ranges of concentrations observed in the past. Inspection of data showed that radioactivity concentrations in surface water, drinking water, shoreline sediment and fish are higher than the activities reported for samples collected prior to the operation of the station. Measured concentrations were not higher than expected, and all positively identified measurements attributable to station operation were within limits as specified in SLC's.

Additionally, environmental radiological monitoring data is consistent with effluents introduced into the environment by plant operations. The total body dose estimated to the maximum exposed member of the public as calculated by environmental sampling data, excluding TLD results, was 1.19E-1 mrem for 2016. Background radiation dose in the United States is approximately 620 mrem per year (approximately half from naturally occurring sources such as radon and half from man-made sources such as medical processes).<sup>1</sup> It is therefore concluded that station operations has had no significant radiological impact on the health and safety of the public or the environment.

<sup>1</sup>NCRP (2009). National Council on Radiation Protection and Measurements. *Ionizing Radiation Exposure of the Population of the United States*, NCRP Report No. 160 (National Council on Radiation Protection and Measurements, Bethesda, Maryland).

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## **2.0 INTRODUCTION**

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### **2.1 SITE DESCRIPTION AND SAMPLE LOCATIONS**

McGuire Nuclear Station (MNS) is located geographically near the center of a highly industrialized region of the Carolinas. The land is predominantly rural non-farm with a small amount of land being used for farming. The McGuire site is in northwestern Mecklenburg County, North Carolina, 17 miles north-northwest of Charlotte, North Carolina. The site is bounded to the west by the Catawba River channel and to the north by 32,510 acre Lake Norman. Lake Norman is impounded by Duke Energy Corporation's Cowans Ford Dam Hydroelectric Station. The tailwater of Cowans Ford Dam is the upper limit of Mountain Island Reservoir. Mountain Island Dam is located 15 miles downstream from the site. Lookout Shoals Hydroelectric Station is at the upper reaches of Lake Norman. Marshall Steam Station is located on the western shore of Lake Norman, approximately 16 miles upstream from the site.

MNS consists of two pressurized water reactors. Each reactor unit is essentially a mirror image of the other joined by an auxiliary building housing both separate and common equipment. Each unit was designed to produce approximately 1200 gross MWe. Unit 1 achieved criticality August 8, 1981 and Unit 2 on May 8, 1983.

Figures 2.1-1 and 2.1-2 are maps depicting the Thermoluminescent Dosimeter (TLD) monitoring locations and the sampling locations. The location numbers shown on these maps correspond to those listed in Tables 2.1-A and 2.1-B. Figure 2.1-1 comprises all sample locations within 0.5 mile radius of MNS. Figure 2.1-2 comprises all sample locations within a ten mile radius of MNS.

### **2.2 SCOPE AND REQUIREMENTS OF THE REMP**

An environmental monitoring program has been in effect at McGuire Nuclear Station since 1977, four years prior to operation of Unit 1 in 1981. The preoperational program provides data on the existing environmental radioactivity levels for the site and vicinity which may be used to determine whether increases in environmental levels are attributable to the station. The operational program provides surveillance and backup support of detailed effluent monitoring which is necessary to evaluate the significance, if any, of the contributions to the existing environmental radioactivity levels that result from station operation.

This monitoring program is based on NRC guidance as reflected in the Selected Licensee Commitments Manual, with regard to sample media, sampling locations, sampling frequency, and analytical sensitivity requirements. Indicator and control locations were established for comparison purposes to distinguish radioactivity of station origin from natural or other "man-made" environmental radioactivity. The environmental monitoring program also verifies projected and anticipated radionuclide concentrations in the environment and related exposures from releases of radionuclides from McGuire Nuclear Station. This program satisfies the requirements of Section IV.B.2 of Appendix I to 10CFR50 and provides surveillance of all

appropriate critical exposure pathways to man and protects vital interests of the company, public, and state and federal agencies concerned with the environment. Reporting levels for radioactivity found in environmental samples are listed in Table 2.2-A. Table 2.2-B lists the REMP analysis and frequency schedule.

The Annual Land Use Census, required by Selected Licensee Commitments, is performed to ensure that changes in the use of areas at or beyond the site boundary are identified and that modifications to the Radiological Environmental Monitoring Program are made if required by changes in land use. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10CFR50. Results are shown in Table 3.10.

Participation in an interlaboratory comparison program as required by Selected Licensee Commitments provides for independent checks on the precision and accuracy of measurements of radioactive material in REMP sample matrices. Such checks are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are valid for the purposes of Section IV.B.2 of Appendix I to 10CFR50. A summary of the results obtained as part of this comparison program are in Section 5 of this annual report.

## **2.3 STATISTICAL AND CALCULATIONAL METHODOLOGY**

### **2.3.1 ESTIMATION OF THE MEAN VALUE**

There was one (1) basic statistical calculation performed on the raw data resulting from the environmental sample analysis program. The calculation involved the determination of the mean value for the indicator and the control samples for each sample medium. The mean is a widely used statistic. This value was used in the reduction of the data generated by the sampling and analysis of the various media in the Radiological Environmental Monitoring Program. "Net activity (or concentration)" is the activity (or concentration) determined to be present in the sample. No "Minimum Detectable Activity", "Lower Limit of Detection", "Less Than Level", or negative activities or concentrations are included in the calculation of the mean. The following equation was used to estimate the mean:

$$\bar{x} = \frac{\sum_{i=1}^N x_i}{N}$$

Where:

$\bar{x}$  = estimate of the mean,

$i$  = individual sample,

$N$  = total number of samples with a net activity (or concentration),

$x_i$  = net activity (or concentration) for sample  $i$ .

### **2.3.2 LOWER LIMIT OF DETECTION AND MINIMUM DETECTABLE ACTIVITY**

The Lower Level of Detection (LLD) and Minimum Detectable Activity (MDA) are used throughout the Environmental Monitoring Program.

**LLD** - The LLD, as defined in the Selected Licensee Commitments Manual is the smallest concentration of radioactive material in a sample that will yield a net count, above the system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is an *a priori* lower limit of detection. The actual LLD is dependent upon the standard deviation of the background counting rate, the counting efficiency, the sample size (mass or volume), the radiochemical yield, and the radioactive decay of the sample between sample collection and counting. The "required" LLD's for each sample medium and selected radionuclides are given in the Selected Licensee Commitments and are listed in Table 2.2-C.

**MDA** - The MDA is the net counting rate (sample after subtraction of background) that must be surpassed before a sample is considered to contain a scientifically measurable amount of a radioactive material exceeding background amounts. The MDA is calculated using a sample background and may be thought of as an "actual" LLD for a particular sample measurement. Certain gross counting measurements display a calculated negative value, indicating background is greater than sample activity.

### **2.3.3 TREND IDENTIFICATION**

One of the purposes of an environmental monitoring program is to determine if there is a buildup of radionuclides in the environment due to the operation of the nuclear station. Visual inspection of tabular or graphical presentations of data (including preoperational) is used to determine if a trend exists. A decrease in a particular radionuclide's concentration in an environmental medium does not indicate that reactor operations are removing radioactivity from the environment but that reactor operations are not adding that radionuclide to the environment in quantities exceeding the preoperational level and that the normal removal processes (radioactive decay, deposition, resuspension, etc.) are influencing the concentration.

Substantial increases or decreases in the amount of a particular radionuclide's release from the nuclear plant will greatly affect the resulting environmental levels; therefore, a knowledge of the release of a radionuclide from the nuclear plant is necessary to completely interpret the trends, or lack of trends, determined from the environmental data. Some factors that may affect environmental levels of radionuclides include prevailing weather conditions (periods of drought, solar cycles or heavier than normal precipitation), construction in or around either the nuclear plant or the sampling location, and addition or deletion of other sources of radioactive materials (such as the Chernobyl accident). Some of these factors may be obvious while others are sometimes unknown. Therefore, how trends are identified will include some judgment by plant personnel.



Figure 2.1-1

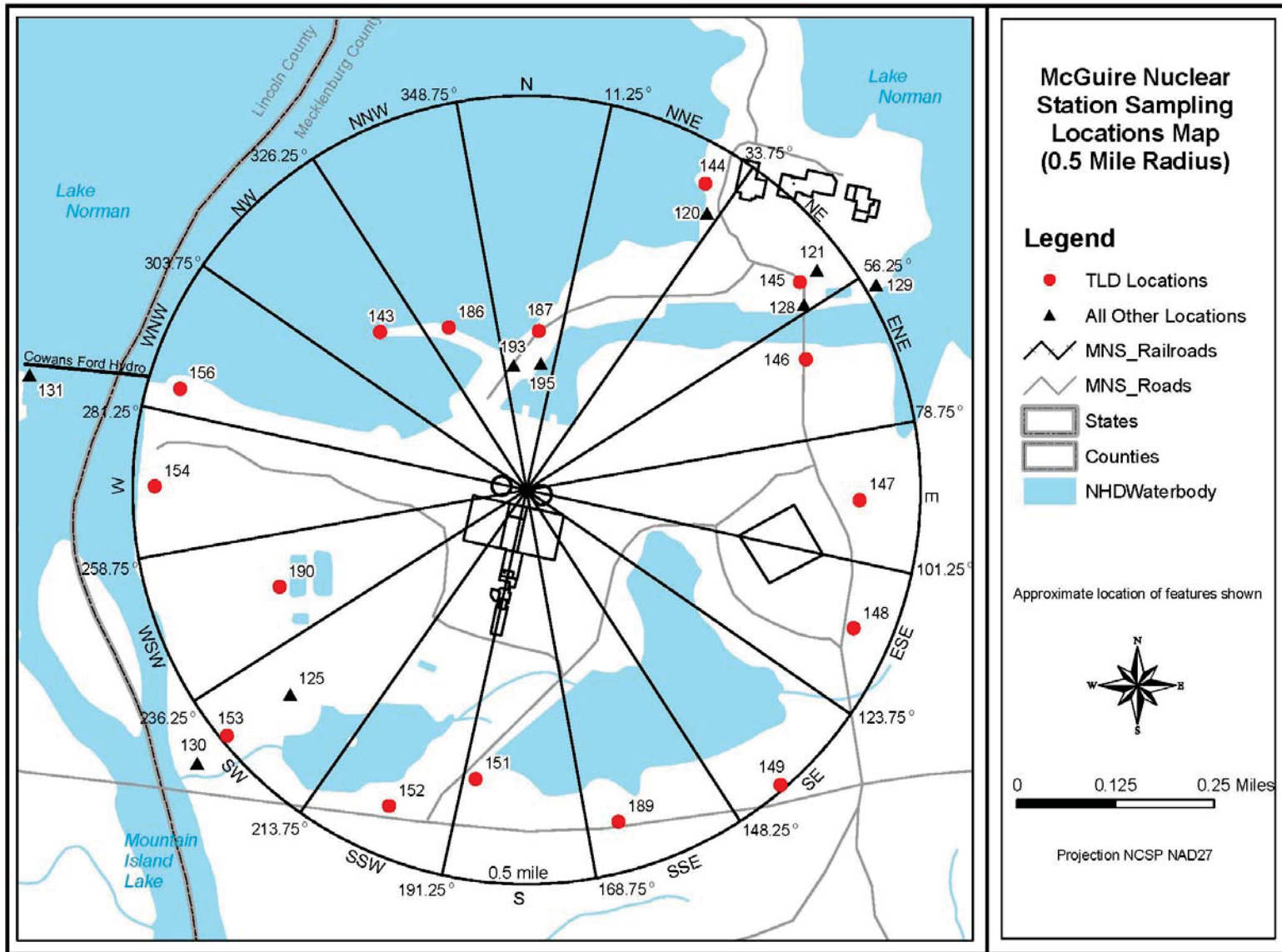
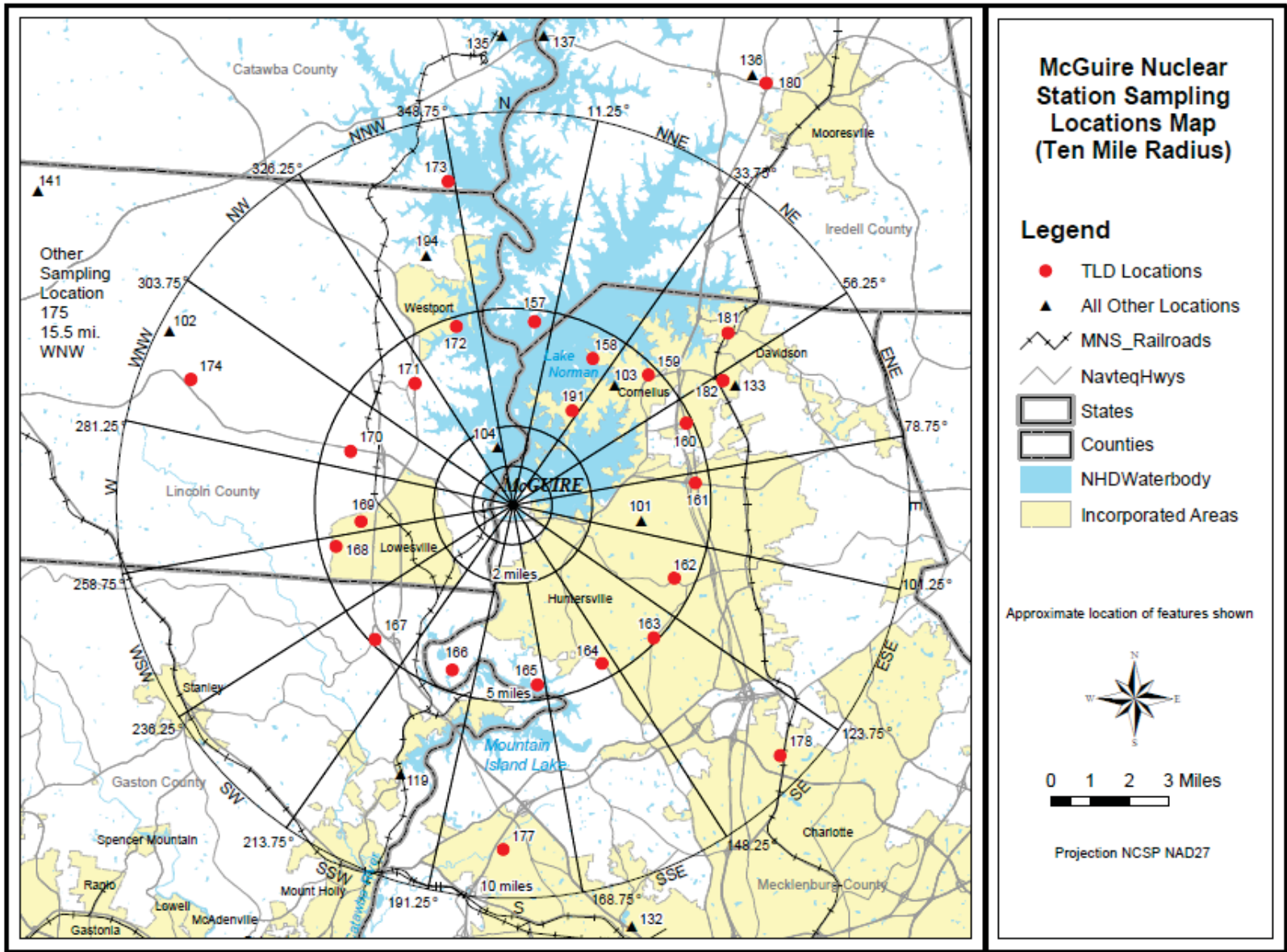


Figure 2.1-2



**TABLE 2.1-A**

**MCGUIRE RADIOLOGICAL MONITORING PROGRAM  
SAMPLING LOCATIONS**

Table 2.1-A Codes			
W	Weekly	SM	Semimonthly
BW	BiWeekly	Q	Quarterly
M	Monthly	SA	Semiannually
C	Control	I	Indicator

Site #	Measure Type	Location Description*	Air Rad. & Part.	Surface Water	Drinking Water	Shoreline Sediment	Food Products	Fish	Milk	Broad Leaf Veg.
101	I	North Mecklenburg Water Treatment Facility ( 3.31 mi E )			M					
102	C	Amity Church Road ( 9.89 mi WNW )	W							M ( b )
103	I	Cottonwood Substation ( 4.20 mi NE )	W							
104	I	5 mile radius Gardens (1.52 mi NNW)					M (a)			
119	I	Mt. Holly Municipal Water Supply ( 7.40 mi SSW )			M					
120	I	Site Boundary ( 0.46 mi NNE )	W							M ( b )
121	I	Site Boundary ( 0.47 mi NE )	W							
125	I	Site Boundary ( 0.38 mi SW )	W							M ( b )
128	I	Discharge Canal Bridge ( 0.45 mi NE )		M						
129	I	Discharge Canal Entrance to Lake Norman ( 0.51 mi ENE )				SA		SA		
130	I	Hwy 73 Bridge Downstream ( 0.52 mi SW )				SA				
131	I	Cowans Ford Dam ( 0.64 mi WNW )		M						
132	I	Charlotte Municipal Water Supply ( 11.1 mi SSE )			M					
133	I	Cornelius ( 6.23 mi ENE )	W							
135	C	Plant Marshall Intake Canal ( 11.9 mi N )		M						
136	C	Mooresville Municipal Water Supply ( 12.7 mi NNE )			M					
137	C	Pinnacle Access Area ( 12.0 mi N )				SA		SA		
141	C	Lynch Dairy-Cows ( 14.8 mi WNW )							SM	
193	I	Site Boundary ( 0.19 mi N )								M ( b )
194	I	East Lincoln County Water Supply ( 6.73 mi NNW )			M					
195	I	Fishing Access Road ( 0.19 mi N )	W							

(a) During Harvest Season

(b) When Available

\* GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.

**TABLE 2.1-B**

**MCGUIRE RADIOLOGICAL MONITORING PROGRAM  
SAMPLING LOCATIONS (TLD SITES)**

Table 2.1-B Codes			
IR	Inner Ring	OR	Outer Ring
C	Control	SI	Special Interest

Site #	Measure Type	Location	Distance* (miles)	Sector	Site #	Measure Type	Location	Distance* (miles)	Sector
143	IR	SITE BOUNDARY	0.27	NW	164	OR	HAMBRIGHT & BEATTIES FORD ROAD	4.64	SSE
144	IR	SITE BOUNDARY	0.46	NNE	165	OR	ARTHER AUTEN ROAD	4.57	S
145	IR	SITE BOUNDARY	0.47	NE	166	OR	NECK ROAD REFUGE BOUNDARY	4.44	SSW
146	IR	SITE BOUNDARY	0.42	ENE	167	OR	LUCIA RIVERBEND HWY/OLD FIREHOUSE	4.87	SW
147	IR	SITE BOUNDARY	0.44	E	168	OR	OLD PLANK ROAD BRIDGE	4.60	WSW
148	IR	SITE BOUNDARY	0.46	ESE	169	OR	GLOVER LANE	4.03	W
149	IR	SITE BOUNDARY	0.50	SE	170	OR	LITTLE EGYPT ROAD	4.32	WNW
151	IR	SITE BOUNDARY	0.37	S	171	OR	TRIANGLE ACE HARDWARE	3.95	NW
152	IR	SITE BOUNDARY	0.44	SSW	172	OR	LAKESHORE S RD ISLAND VIEW COURT	4.69	NNW
153	IR	SITE BOUNDARY	0.47	SW	173	SI	KEISTLER STORE / GLENWOOD ROAD	8.39	NNW
154	IR	SITE BOUNDARY	0.45	W	174	SI	EAST LINCOLN JR. HIGH SCHOOL	8.85	WNW
156	IR	SITE BOUNDARY	0.44	WNW	175	C	BOGER CITY	15.5	WNW
189	IR	SITE BOUNDARY	0.43	SSE	177	SI	BELMARR RD / COULWOOD	8.77	S
190	IR	SITE BOUNDARY	0.37	WSW	178	SI	FLORIDA STEEL CORPORATION	9.36	SE
157	IR	THE POINTE (MOORESVILLE)	4.69	N	180	SI	MOORESVILLE WATER TREATMENT FACILITY	12.7	NNE
158	OR	BETHEL CHURCH RD	4.33	NNE	181	SI	OLD DAVIDSON WATER FACILITY	7.02	NE
159	OR	HENDERSON ROAD	4.77	NE	182	SI	CORNELIUS AIR SITE # 133	6.23	ENE
160	OR	ANCHORAGE MARINE SHOWROOM	4.89	ENE	186	SI	MCGUIRE FISHING ACCESS ROAD	0.24	NNW
161	OR	SAM FURR ROAD & HWY 21	4.70	E	187	SI	ENERGY EXPLORIUM / AIR SITE # 195	0.19	N
162	OR	RANSON ROAD	4.53	ESE	191	SI	PENINSULA DEV. / JOHN CONNOR ROAD	2.84	NNE
163	OR	MCCOY ROAD	4.94	SE					

\* GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.

**TABLE 2.2-A**

**REPORTING LEVELS FOR RADIOACTIVITY  
CONCENTRATIONS IN ENVIRONMENTAL SAMPLES**

Analysis	Water (pCi/liter)	Air Particulates or Gases (pCi/m <sup>3</sup> )	Fish (pCi/kg-wet)	Milk (pCi/liter)	BroadLeaf Vegetation (pCi/kg-wet)
H-3	20,000 <sup>(a),(b)</sup>	---	---	---	---
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-Nb-95	400	---	---	---	---
I-131	2	0.9	---	3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200	---	---	300	---

(a) If no drinking water pathway exists, a value of 30,000 pCi/liter may be used.

(b) H-3 Reporting level not applicable to surface water

**TABLE 2.2-B**

**REMP ANALYSIS FREQUENCY**

Sample Medium	Analysis Schedule	Gamma Isotopic	Tritium	Low Level I-131	Gross Beta	TLD
Air Radioiodine	Weekly	X	---	---	---	---
Air Particulate	Weekly	---	---	---	X	---
	Quarterly Composite	X	---	---	---	---
Direct Radiation	Quarterly	---	---	---	---	X
Surface Water	Monthly Composite	X	---	---	---	---
	Quarterly Composite	---	X	---	---	---
Drinking Water	Monthly Composite	X	---	(a)	X	---
	Quarterly Composite	---	X	---	---	---
Shoreline Sediment	Semiannually	X	---	---	---	---
Milk	Semimonthly	X	---	X	---	---
Fish	Semiannually	X	---	---	---	---
Broadleaf Vegetation	Monthly <sup>(b)</sup>	X	---	---	---	---
Food Products	Monthly <sup>(b)</sup>	X	---	---	---	---

(a) Low-level I-131 analysis will be performed if the dose calculated for the consumption of drinking water is > 1 mrem per year. An LLD of 1 pCi/liter will be required for this analysis.

(b) When Available

**TABLE 2.2-C****MAXIMUM VALUES FOR THE *A PRIORI* LOWER LIMITS OF DETECTION**

Analysis	Water (pCi/liter)	Air Particulates or Gases (pCi/m <sup>3</sup> )	Fish (pCi/kg-wet)	Milk (pCi/liter)	BroadLeaf Vegetation (pCi/kg-wet)	Sediment (pCi/kg-dry)
Gross Beta	4	0.01	---	---	---	---
H-3	2,000 <sup>(a)</sup>	---	---	---	---	---
Mn-54	15	---	130	---	---	---
Fe-59	30	---	260	---	---	---
Co-58, 60	15	---	130	---	---	---
Zn-65	30	---	260	---	---	---
Zr-Nb-95	15	---	---	---	---	---
I-131	1 <sup>(b)</sup>	0.07	---	1	60	---
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140	15	---	---	15	---	---

(a) If no drinking water pathway exists, a value of 3,000 pCi/liter may be used.

(b) If no drinking water pathway exists, the LLD of gamma isotopic analysis may be used.

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## 3.0 INTERPRETATION OF RESULTS

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Review of 2016 REMP analysis results was performed to detect and identify changes in environmental levels as a result of station operation. The radionuclides with Selected Licensee Commitments reporting levels that indicate consistent detectable activity have been historically trended from preoperation to present. Analyses from 1977 - 1978 have been excluded since these results were much higher than the other preoperational years due to outside influences such as weapons testing. The preoperational analyses from 1981 were combined with the operational analyses from the latter part of 1981 and averaged to give one concentration for each radionuclide for that year. Summary tables containing 2016 information required by Technical Specification Administrative Control 5.6.2 are located in Appendix B. McGuire 2016 REMP results are located in Appendix E.

The highest annual mean concentration of applicable Selected Licensee Commitments radionuclides from the indicator locations for each media type was used for trending purposes. Trending was performed by comparing annual mean concentrations to historical results. Factors evaluated include the frequency of detection and the concentration in terms of the percent of the radionuclide's SLC reporting level (Table 2.2-A). All maximum percent of reporting level values attributable to MNS plant operation were well below the 100% action level. The highest value attributable to MNS plant operations during 2016 was 2.85% for drinking water tritium at the North Mecklenburg Water Treatment Facility (Location 101). Only Selected Licensee Commitments radionuclides were detected in 2016.

Ground water monitoring wells located on the MNS site are part of the Nuclear Energy Institute (NEI) 07-07 radiological groundwater monitoring wells and are reported in the MNS Annual Radioactive Effluent Release Report (ARERR). NEI 07-07 was developed to describe the industry's Ground Water Protection Initiative. NEI 07-07 radiological groundwater monitoring wells are used to assure timely detection and effective response to situations involving inadvertent radiological releases to ground water to prevent migration of licensed radioactive material off-site and to quantify impacts on decommissioning. These monitoring wells are not used for Radiological Environmental Monitoring Program (REMP), because they do not monitor water supply for drinking or irrigation purposes. These are not REMP wells because there is no dose associated with this pathway. The McGuire site is bounded to the west by the Catawba River channel and the hydraulic gradient for McGuire flows toward the Catawba River. Sentinel wells are installed and monitored at regular intervals for early detection purposes (NCR # 02035750).

Changes in sample location, analytical technique, and presentation of results must be considered when reviewing for trends. Calculation of the annual mean concentrations has been performed differently over the history of the REMP. During 1979-1986, all net results (sample minus background) positive and negative, were included in the calculation of the mean. Only positive net activity results were used to calculate the mean for the other years. All negative values were replaced with a zero for calculational and graphical purposes to properly represent environmental conditions. A change in gamma spectroscopy analysis systems in 1987 ended a period when many measurements yielded detectable low-level activity for both indicator and control location

samples. It is possible that the method the previous system used to estimate net activity may have been vulnerable to false-positive results.

This section includes tables and graphs containing the highest annual mean concentrations of any effluent related radionuclide detected since the change in analysis systems in 1987. Any zero concentrations used in tables or graphs represent activity measurements less than detectable levels. Only the specific radionuclides that represent the highest dose contributors or demonstrate consistent detectable activity are shown graphically.

Data presented in Sections 3.1 through 3.9 support the conclusion that there was no significant increase in radioactivity in the environment around McGuire Nuclear Station due to station operations in 2016. Similarly, there was no significant increase in ambient background radiation levels in the surrounding areas. The 2016 land use census data, shown in Section 3.10, indicates that no program changes are required as a result of the census.



### 3.1 AIRBORNE RADIOIODINE AND PARTICULATES

In 2016, 364 radioiodine and particulate samples were analyzed, 312 from six indicator locations and 52 from the control location. Particulate samples were analyzed weekly for gross beta. A quarterly gamma analysis was performed on the quarterly filter composite (by location). Radioiodine samples received a weekly gamma analysis.

Western North Carolina wildfires created smoky conditions affecting some air monitoring equipment during 2016 reducing air flow due to filter loading. Air radioiodine and particulate samples collected during these conditions indicated reduced volume, but no sampling deviations or data anomalies were incurred (NCR # 02080774).

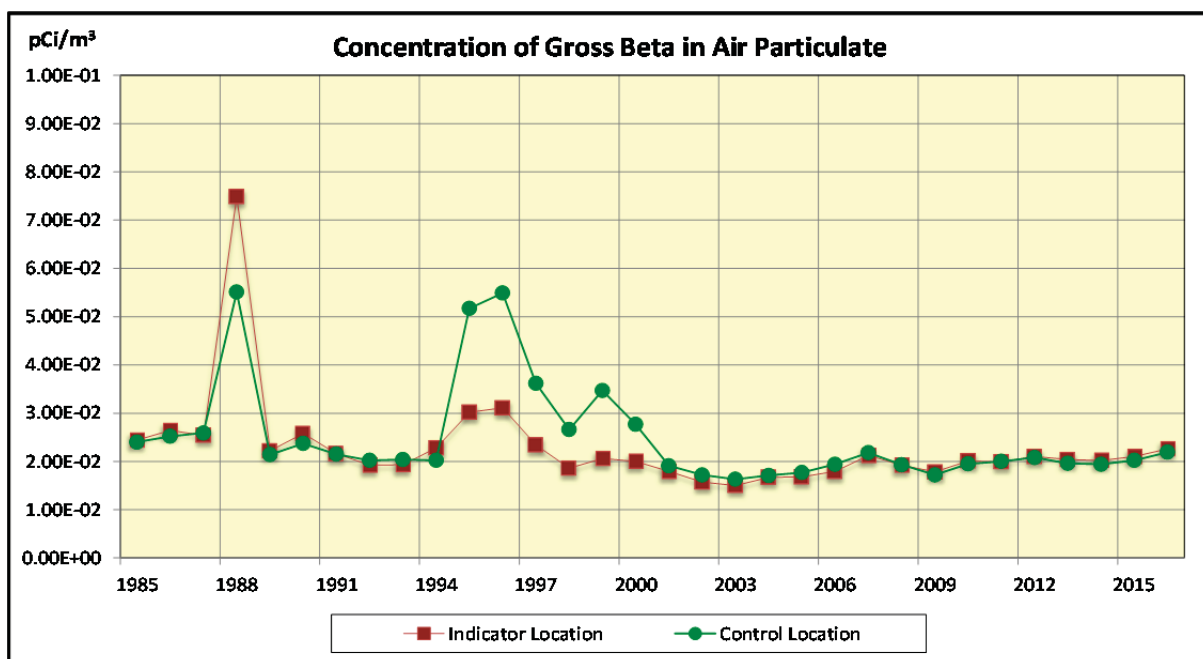
Gross beta analyses indicated  $2.26E-2$  pCi/m<sup>3</sup> at the location with the highest annual mean and  $2.19E-2$  pCi/m<sup>3</sup> at the control location. No gamma emitting radionuclide attributable to MNS plant operation has been detected in any air samples since 2004 when Co-58 was observed (NCR # 01552730).

Figure 3.1 shows gross beta highest annual mean indicator and control location concentrations since 1985. There is no reporting level for gross beta. Table 3.1-A shows indicator and control location highest annual means for Cs-137 and gross beta.

Table 3.1-B gives indicator location highest annual means and control means since 1979 for I-131. Preoperational and ten year averages are also shown. No I-131 activity due to MNS plant operation has been detected since 1989. Since no activity was detected in 2016, no reporting levels were approached.

K-40 and Be-7 observed in air samples are naturally occurring radionuclides.

Figure 3.1



*There is no reporting level for Gross Beta in air particulate*

**Table 3.1-A Mean Concentrations of Radionuclides in Air Particulate**

YEAR	Cs-137 Indicator (pCi/m <sup>3</sup> )	Cs-137 Control (pCi/m <sup>3</sup> )	Beta Indicator (pCi/m <sup>3</sup> )	Beta Control (pCi/m <sup>3</sup> )
1979*	4.40E-3	1.47E-3	Not Performed	Not Performed
1980*	6.70E-3	4.53E-3	Not Performed	Not Performed
1981*	6.16E-3	5.32E-3	Not Performed	Not Performed
1982*	3.82E-3	2.29E-3	Not Performed	Not Performed
1983*	2.93E-3	3.21E-3	Not Performed	Not Performed
1984	1.74E-3	8.29E-4	Not Performed	Not Performed
1985	1.86E-3	1.32E-3	2.44E-2	2.40E-2
1986	4.98E-3	3.03E-3	2.64E-2	2.52E-2
1987 <sup>(1)</sup>	1.07E-2	7.91E-3	2.54E-2	2.59E-2
1988	0.00E0	0.00E0	7.49E-2	5.51E-2
1989	0.00E0	0.00E0	2.22E-2	2.14E-2
1990	0.00E0	0.00E0	2.58E-2	2.37E-2
1991	0.00E0	0.00E0	2.16E-2	2.15E-2
1992	0.00E0	0.00E0	1.92E-2	2.02E-2
1993	0.00E0	0.00E0	1.93E-2	2.04E-2
1994	0.00E0	0.00E0	2.28E-2	2.02E-2
1995	0.00E0	0.00E0	3.02E-2	5.17E-2
1996	0.00E0	0.00E0	3.11E-2	5.49E-2
1997	0.00E0	0.00E0	2.34E-2	3.62E-2
1998	0.00E0	0.00E0	1.86E-2	2.66E-2
1999	0.00E0	0.00E0	2.06E-2	3.47E-2
2000	0.00E0	0.00E0	2.00E-2	2.77E-2
2001	0.00E0	0.00E0	1.79E-2	1.91E-2
2002	0.00E0	0.00E0	1.57E-2	1.72E-2
2003	0.00E0	0.00E0	1.50E-2	1.63E-2
2004	0.00E0	0.00E0	1.67E-2	1.71E-2
2005	0.00E0	0.00E0	1.68E-2	1.77E-2
2006	0.00E0	0.00E0	1.79E-2	1.94E-2
2007	0.00E0	0.00E0	2.12E-2	2.18E-2
2008	0.00E0	0.00E0	1.92E-2	1.93E-2
2009	0.00E0	0.00E0	1.79E-2	1.76E-2
2010	0.00E0	0.00E0	2.01E-2	1.95E-2
2011 <sup>(2)</sup>	7.06E-3	0.00E0	1.99E-2	2.00E-2
2012	0.00E0	0.00E0	2.10E-2	2.08E-2
2013	0.00E0	0.00E0	2.04E-2	1.96E-2
2014 <sup>(3)</sup>	0.00E0	0.00E0	2.02E-2	1.94E-2
2015	0.00E0	0.00E0	2.10E-2	2.02E-2
2016	0.00E0	0.00E0	2.26E-2	2.19E-2

0.00E0 indicates no detectable measurements

\* Radioiodine and Particulates analyzed together

(1) 1987 – Gamma spectroscopy system change

(2) 2011 – Concentration affected by Fukushima Daiichi

(3) 2014 – Gamma spectroscopy system change

**Table 3.1-B Mean Concentrations of Air Radioiodine (I-131)**

Year	Indicator Location (pCi/m <sup>3</sup> )	Control Location (pCi/m <sup>3</sup> )
1979*	3.28E-3	1.04E-3
1980*	2.01E-3	1.10E-3
1981*	4.17E-3	6.27E-4
1982*	1.42E-3	2.48E-3
1983*	1.99E-3	2.01E-4
1984	3.17E-3	0.00E0
1985	3.15E-3	1.04E-3
1986	1.27E-2	6.10E-3
1987 <sup>(1)</sup>	1.07E-2	6.60E-3
1988	0.00E0	0.00E0
1989	2.18E-2	0.00E0
1990	0.00E0	0.00E0
1991	0.00E0	0.00E0
1992	0.00E0	0.00E0
1993	0.00E0	0.00E0
1994	0.00E0	0.00E0
1995	0.00E0	0.00E0
1996	0.00E0	0.00E0
1997	0.00E0	0.00E0
1998	0.00E0	0.00E0
1999	0.00E0	0.00E0
2000	0.00E0	0.00E0
2001	0.00E0	0.00E0
2002	0.00E0	0.00E0
2003	0.00E0	0.00E0
2004	0.00E0	0.00E0
2005	0.00E0	0.00E0
2006	0.00E0	0.00E0
2007	0.00E0	0.00E0
2008	0.00E0	0.00E0
2009	0.00E0	0.00E0
2010	0.00E0	0.00E0
2011 <sup>(2)</sup>	6.00E-2	5.46E-2
2012	0.00E0	0.00E0
2013	0.00E0	0.00E0
2014 <sup>(3)</sup>	0.00E0	0.00E0
2015	0.00E0	0.00E0
2016	0.00E0	0.00E0

0.00E0 indicates no detectable measurements

\* Radioiodine and Particulate analyzed together.

(1) 1987 – Gamma spectroscopy system change

(2) 2011– Concentration affected by Fukushima Daiichi

(3) 2014 – Gamma spectroscopy system change

### 3.2 DRINKING WATER

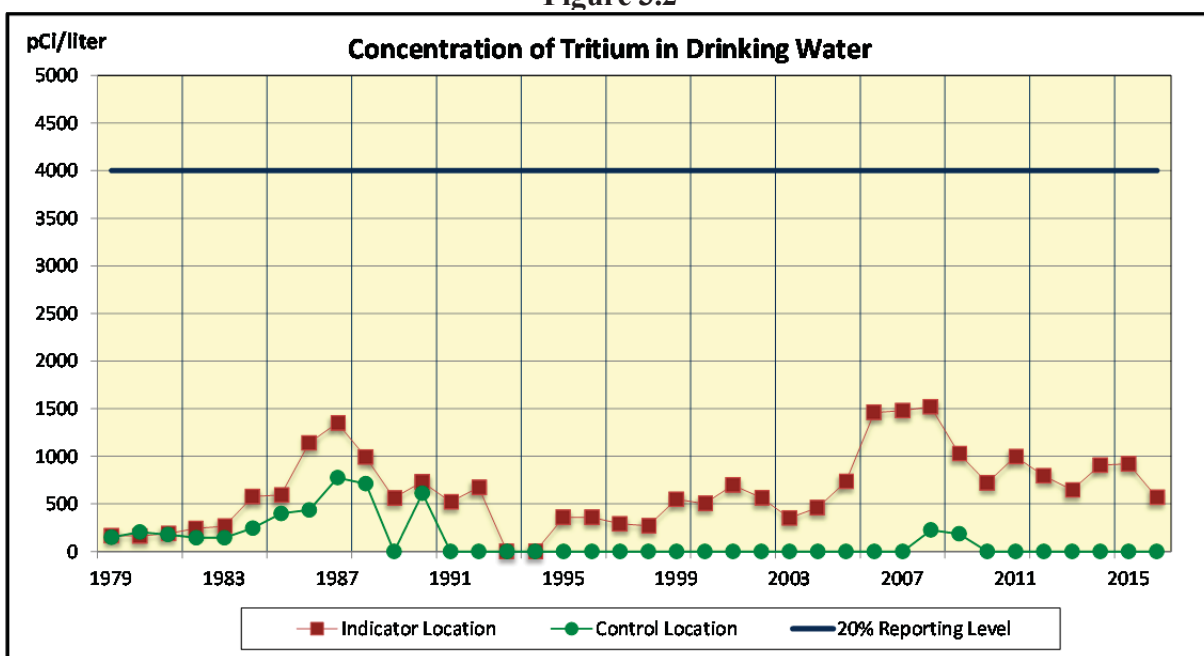
In 2016, 65 drinking water samples were analyzed for gross beta and gamma emitting radionuclides. Fifty-two samples were from the four indicator locations and 13 from the control location. Tritium (H-3) analyses were performed on 20 composite samples, 16 at indicator locations and four at the control location.

No detectable gamma activity attributable to MNS plant operation was found in drinking water samples in 2016 and has not been detected since 1987. K-40 observed in some drinking water samples is a naturally occurring radionuclide. Gross beta analyses indicated 2.85 pCi/l at the location with the highest annual mean and 1.80 pCi/l at the control location. Tritium was detected in 12 of the 16 indicator composite samples taken in 2016. The 2016 highest mean indicator tritium concentration from location 101 was 569 pCi/liter, which is 2.85% of the 20,000 pCi/l tritium reporting level. Tritium was not detected in any of the four control location samples. The dose for consumption of water was less than one mrem per year, historically and for 2016; therefore low-level iodine analysis is not required.

Figure 3.2 shows tritium highest annual mean indicator and control location concentrations with comparisons to 20% of the reporting level. Table 3.2 gives indicator location highest annual means and control means since 1979 for tritium and gross beta. There is no reporting level for gross beta.

Drinking water Location 101 was added to the sampling program in 1999. Figure 3.2 shows an increase beginning in that year. There was an increase in tritium releases in 2006 due to silica removal from the spent fuel pools which resulted in additional water volume being released from the plant. An extreme drought during the second half of 2007 and much of 2008 affecting the Catawba River Basin resulted in less dilution volume available in Lake Norman.

Figure 3.2



**Table 3.2 Mean Concentrations of Radionuclides in Drinking Water**

YEAR	Gross Beta (pCi/l)		Tritium (pCi/l)	
	Indicator Location	Control Location	Indicator Location	Control Location
1979	2.40E0	2.03E0	1.65E2	1.50E2
1980	2.34E0	1.87E0	1.63E2	2.05E2
1981	2.79E0	2.41E0	1.88E2	1.78E2
1982	2.62E0	2.43E0	2.43E2	1.45E2
1983	1.80E0	1.87E0	2.65E2	1.45E2
1984	2.78E0	1.81E0	5.77E2	2.45E2
1985	1.88E0	1.90E0	5.93E2	4.00E2
1986	2.13E0	2.15E0	1.14E3	4.37E2
1987	2.30E0	2.00E0	1.35E3	7.75E2
1988	2.00E0	2.00E0	9.92E2	7.11E2
1989	2.80E0	2.70E0	5.62E2	0.00E0
1990	3.70E0	4.30E0	7.32E2	6.11E2
1991	2.40E0	2.50E0	5.22E2	0.00E0
1992	2.00E0	1.70E0	6.73E2	0.00E0
1993	2.80E0	2.40E0	0.00E0	0.00E0
1994	2.47E0	2.90E0	0.00E0	0.00E0
1995	4.20E0	3.30E0	3.58E2	0.00E0
1996	2.75E0	2.11E0	3.60E2	0.00E0
1997	2.70E0	2.24E0	2.90E2	0.00E0
1998	2.75E0	2.33E0	2.68E2	0.00E0
1999	2.48E0	2.17E0	5.49E2	0.00E0
2000	2.66E0	1.99E0	5.04E2	0.00E0
2001	2.48E0	2.19E0	6.98E2	0.00E0
2002	2.47E0	2.08E0	5.64E2	0.00E0
2003	1.81E0	1.52E0	3.51E2	0.00E0
2004	1.68E0	1.29E0	4.61E2	0.00E0
2005	1.74E0	1.30E0	7.35E2	0.00E0
2006	1.75E0	1.80E0	1.46E3	0.00E0
2007	1.81E0	1.76E0	1.48E3	0.00E0
2008	2.40E0	1.87E0	1.52E3	2.26E2
2009	1.90E0	1.81E0	1.03E3	1.86E2
2010	1.85E0	1.74E0	7.20E2	0.00E0
2011	1.77E0	1.75E0	9.97E2	0.00E0
2012	1.74E0	1.66E0	7.95E2	0.00E0
2013	1.73E0	1.61E0	6.47E2	0.00E0
2014	2.18E0	1.95E0	9.07E2	0.00E0
2015	2.14E0	1.91E0	9.19E2	0.00E0
2016	2.85E0	1.80E0	5.69E2	0.00E0

0.00E0 indicates no detectable measurements

### 3.3 SURFACE WATER

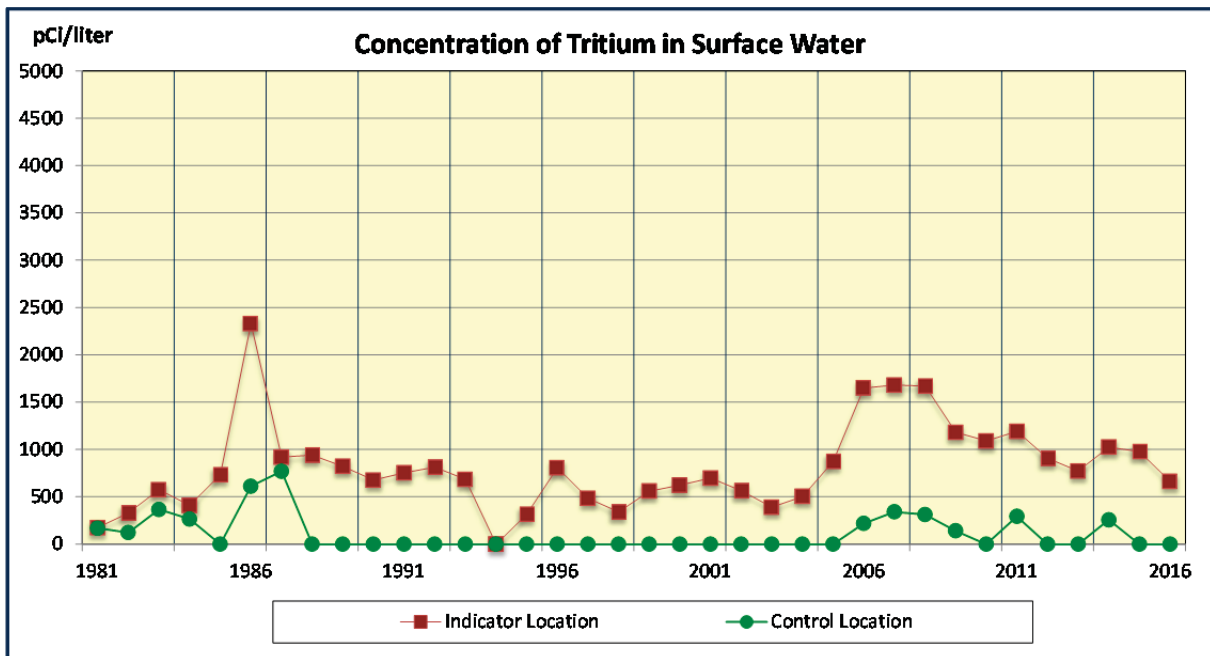
In 2016, 39 surface water samples were analyzed for gamma emitting radionuclides, 26 at the two indicator locations and 13 at the control location. Analyses for H-3 were performed on 12 samples, eight at indicator locations and four at the control location.

No detectable gamma activity attributable to MNS plant operation was found in surface water samples in 2016 and has not been detected since 1988. K-40 observed in some surface water samples is a naturally occurring radionuclide. Tritium was detected in all of the eight indicator composite samples taken in 2016. Tritium was not detected in any of the four control location composite samples in 2016.

Figure 3.3 shows tritium highest annual mean indicator and control location concentrations. Table 3.3 gives indicator and control location highest annual means since 1979 for tritium.

There was an increase in surface water tritium in 2006 due to silica removal from the spent fuel pools which resulted in additional water volume being released from the plant. An extreme drought during the second half of 2007 and much of 2008 affecting the Catawba River Basin resulted in less dilution volume available in Lake Norman.

Figure 3.3



*There is no reporting level for tritium in surface water*

**Table 3.3 Mean Concentrations of Tritium in Surface Water**

<b>YEAR</b>	<b>H-3 Indicator (pCi/l)</b>	<b>H-3 Control (pCi/l)</b>
1979	1.85E2	1.66E2
1980	2.13E2	1.93E2
1981	1.75E2	1.70E2
1982	3.30E2	1.23E2
1983	5.75E2	3.67E2
1984	4.10E2	2.65E2
1985	7.33E2	0.00E0
1986	2.33E3	6.13E2
1987	9.20E2	7.70E2
1988	9.40E2	0.00E0
1989	8.22E2	0.00E0
1990	6.77E2	0.00E0
1991	7.53E2	0.00E0
1992	8.13E2	0.00E0
1993	6.85E2	0.00E0
1994	0.00E0	0.00E0
1995	3.15E2	0.00E0
1996	8.08E2	0.00E0
1997	4.85E2	0.00E0
1998	3.40E2	0.00E0
1999	5.60E2	0.00E0
2000	6.22E2	0.00E0
2001	6.98E2	0.00E0
2002	5.65E2	0.00E0
2003	3.91E2	0.00E0
2004	5.04E2	0.00E0
2005	8.74E2	0.00E0
2006	1.65E3	2.19E2
2007	1.68E3	3.42E2
2008	1.67E3	3.13E2
2009	1.18E3	1.41E2
2010	1.09E3	0.00E0
2011	1.19E3	2.94E2
2012	9.06E2	0.00E0
2013	7.73E2	0.00E0
2014	1.03E3	2.57E2
2015	9.79E2	0.00E0
2016	6.63E2	0.00E0

0.00E0 indicates no detectable measurements

### 3.4 MILK

In 2016, 26 milk samples from the control location were analyzed for low level I-131 and other gamma emitting radionuclides. No indicator dairies were sampled during 2016 and none were identified by the 2016 land use census.

There were no gamma emitting radionuclides due to MNS plant operations identified in milk samples in 2016. Cs-137 is the only radionuclide, other than naturally occurring, reported in milk samples since 1990 (excluding Fukushima Daiichi). Cs-137 in milk is not unusual. It is a constituent of nuclear weapons test fallout and nuclear plant accidents and has been observed periodically in samples from indicator and control locations since the preoperational period.

Table 3.4 gives indicator location highest annual means and control means since 1979 for Cs-137. Since no Cs-137 was detected in 2016, no reporting levels were approached.

K-40 observed in milk samples is a naturally occurring radionuclide.



**Table 3.4 Mean Concentrations of Cs-137 in Milk**

<b>YEAR</b>	<b>Cs-137 Indicator (pCi/l)</b>	<b>Cs-137 Control (pCi/l)</b>
1979	2.48E1	6.04E0
1980	1.72E1	4.13E0
1981	2.04E1	4.15E0
1982	1.21E1	5.20E0
1983	2.01E1	2.82E0
1984	1.48E1	2.56E0
1985	1.42E1	2.72E0
1986	3.74E0	3.45E0
1987 <sup>(1)</sup>	5.20E0	8.60E0
1988	3.40E0	2.90E0
1989	6.00E0	5.60E0
1990	5.30E0	2.60E0
1991	0.00E0	0.00E0
1992	0.00E0	0.00E0
1993	0.00E0	0.00E0
1994	0.00E0	0.00E0
1995	0.00E0	0.00E0
1996	0.00E0	0.00E0
1997	0.00E0	0.00E0
1998	0.00E0	0.00E0
1999	0.00E0	0.00E0
2000	0.00E0	0.00E0
2001	0.00E0	0.00E0
2002	No Indicator Location	0.00E0
2003	No Indicator Location	0.00E0
2004	No Indicator Location	0.00E0
2005	No Indicator Location	0.00E0
2006	No Indicator Location	0.00E0
2007	No Indicator Location	0.00E0
2008	No Indicator Location	0.00E0
2009	No Indicator Location	0.00E0
2010	No Indicator Location	0.00E0
2011	No Indicator Location	0.00E0
2012	No Indicator Location	0.00E0
2013	No Indicator Location	0.00E0
2014 <sup>(2)</sup>	No Indicator Location	0.00E0
2015	No Indicator Location	0.00E0
2016	No Indicator Location	0.00E0

0.00E0 indicates no detectable measurements

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

### **3.5 BROADLEAF VEGETATION**

In 2016, 48 broadleaf vegetation samples were analyzed, 36 at the three indicator locations and twelve at the control location.

Gamma spectroscopy analysis detected Cs-137 in one indicator broadleaf vegetation sample during 2016. Cs-137 was detected at location 120 with a mean concentration of 12.2 pCi/kg which represents 0.61% of the reporting level. There were no gamma emitting radionuclides attributable to MNS plant operation identified in any control location broadleaf vegetation samples in 2016.

Cs-137 is the only radionuclide, other than naturally occurring, reported in vegetation samples since the change in gamma spectroscopy analysis systems in 1987. No airborne Cs-137 has been released from the plant since 1998.

It is not unusual for Cs-137 to be present in vegetation. It is a constituent of nuclear weapons test fallout and nuclear plant accidents and has been observed in samples from indicator and control locations since the preoperational period. Table 3.5 lists the highest indicator location annual mean and control location annual mean for Cs-137 since early in the station's operational history. Visual inspection of the tabular data did not reveal any increasing trends.

K-40 and Be-7 observed in broadleaf vegetation samples are naturally occurring radionuclides.

**Table 3.5 Mean Concentrations of Cs-137 in Broadleaf Vegetation**

YEAR	Cs-137 Indicator (pCi/kg)	Cs-137 Control (pCi/kg)
1979	2.19E1	1.93E1
1980	2.30E1	1.92E1
1981	3.04E1	2.02E1
1982	2.46E1	1.22E1
1983	9.07E0	7.85E0
1984	1.02E1	1.05E1
1985	8.05E0	2.37E-2
1986	4.03E1	1.27E1
1987 <sup>(1)</sup>	2.20E1	1.70E1
1988	3.90E1	3.40E1
1989	9.60E1	0.00E0
1990	4.00E1	0.00E0
1991	3.30E1	0.00E0
1992	4.90E1	0.00E0
1993	1.60E1	0.00E0
1994	0.00E0	0.00E0
1995	0.00E0	0.00E0
1996	0.00E0	0.00E0
1997	0.00E0	0.00E0
1998	0.00E0	2.69E1
1999	0.00E0	0.00E0
2000	0.00E0	0.00E0
2001	0.00E0	0.00E0
2002	0.00E0	0.00E0
2003	0.00E0	0.00E0
2004	0.00E0	0.00E0
2005	0.00E0	0.00E0
2006	2.98E1	0.00E0
2007	1.34E1	0.00E0
2008	0.00E0	0.00E0
2009	0.00E0	0.00E0
2010	0.00E0	0.00E0
2011 <sup>(2)</sup>	2.29E1	0.00E0
2012	0.00E0	0.00E0
2013	0.00E0	0.00E0
2014 <sup>(3)</sup>	0.00E0	0.00E0
2015	0.00E0	0.00E0
2016	1.22E1	0.00E0

0.00E0 indicates no detectable measurements

(1) 1987 – Gamma spectroscopy system change

(2) 2011 – Concentration affected by Fukushima Daiichi

(3) 2014 – Gamma spectroscopy system change

### **3.6 FOOD PRODUCTS**

In 2016, 7 food products (crops) samples were analyzed from one indicator location. There is no control location for this media.

No detectable activity attributable to MNS station operation has been detected in this media since 1987. Table 3.6 shows Cs-137 indicator highest annual means with preoperational data. Since no activity was detected in 2016, no reporting levels were approached.

K-40 and Be-7 observed in food product samples are naturally occurring radionuclides.

**Table 3.6 Mean Concentrations of Cs-137 in Food Products**

YEAR	Cs-137 Indicator (pCi/kg)
1979	2.19E1
1980	2.30E1
1981	3.04E1
1982	2.46E1
1983	9.07E0
1984	8.45E0
1985	7.99E0
1986	2.15E1
1987 <sup>(1)</sup>	2.90E1
1988	0.00E0
1989	0.00E0
1990	0.00E0
1991	0.00E0
1992	0.00E0
1993	0.00E0
1994	0.00E0
1995	0.00E0
1996	0.00E0
1997	0.00E0
1998	0.00E0
1999	0.00E0
2000	0.00E0
2001	0.00E0
2002	0.00E0
2003	0.00E0
2004	0.00E0
2005	0.00E0
2006	0.00E0
2007	0.00E0
2008	0.00E0
2009	0.00E0
2010	0.00E0
2011 <sup>(2)</sup>	3.06E1
2012	0.00E0
2013	0.00E0
2014 <sup>(3)</sup>	0.00E0
2015	0.00E0
2016	0.00E0

0.00E0 indicates no detectable measurements

(1) 1987 – Gamma spectroscopy system change

(2) 2011 – Concentration affected by Fukushima Daiichi

(3) 2014 – Gamma spectroscopy system change

### 3.7 FISH

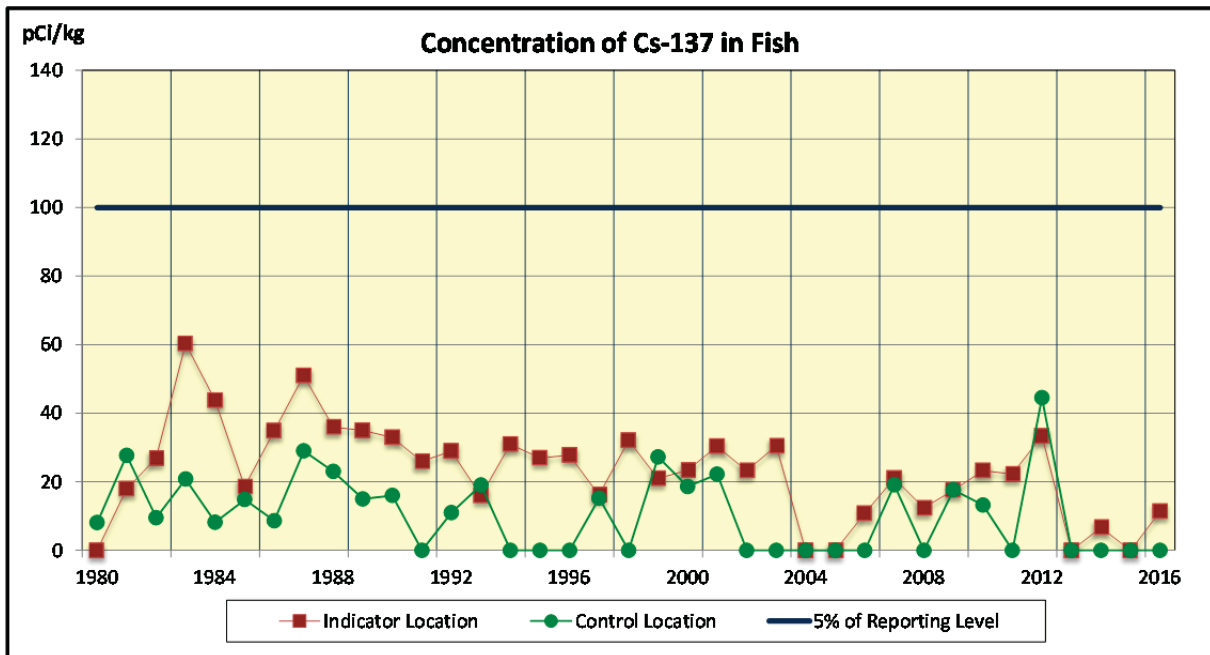
In 2016, 12 fish samples were analyzed for gamma emitting radionuclides, six at the indicator location and six at the control location.

Gamma spectroscopy analysis detected Cs-137 in one indicator fish sample during 2016. Cs-137 was detected at location 129 with a mean concentration of 11.4 pCi/kg which represents 0.57% of the reporting level. There were no gamma emitting radionuclides attributable to MNS plant operation identified in any control location fish samples in 2016.

Figure 3.7 shows Cs-137 highest annual mean indicator and control location concentrations with comparisons to 5% of the reporting level. Table 3.7 gives indicator location highest annual means since 1980 for all radionuclides detected since the analysis change in 1988. All other radionuclides not shown in the table have demonstrated no detectable activity since 1986.

K-40 is a naturally occurring radionuclide observed in fish samples.

Figure 3.7



**Table 3.7 Mean Concentrations of Radionuclides in Fish (pCi/kg)**

YEAR	Mn-54 Indicator	Co-58 Indicator	Co-60 Indicator	Cs-134 Indicator	Cs-137 Indicator
1980	-1.97E1	8.36E0	-2.25E1	-2.70E1	-4.13E0
1981	-2.71E0	-2.98E0	-2.65E0	-1.99E0	1.80E1
1982	-3.83E0	8.16E0	-4.34E-1	-8.22E-1	2.69E1
1983	-2.60E0	2.60E1	1.11E1	-1.32E0	6.03E1
1984	3.61E0	1.45E2	2.82E1	3.11E1	4.38E1
1985	2.53E-1	7.19E0	1.72E1	-1.56E0	1.86E1
1986	1.03E0	3.17E1	2.96E1	1.67E1	3.49E1
1987 <sup>(1)</sup>	0.00E0	2.71E2	1.25E2	2.60E1	5.10E1
1988	1.20E1	7.70E1	0.00E0	2.70E1	3.60E1
1989	9.00E1	4.05E2	2.99E2	1.10E1	3.50E1
1990	0.00E0	5.60E1	4.10E1	0.00E0	3.30E1
1991	6.20E0	1.40E1	6.50E1	5.90E0	2.60E1
1992	0.00E0	0.00E0	0.00E0	0.00E0	2.90E1
1993	0.00E0	8.20E1	1.30E1	0.00E0	1.60E1
1994	0.00E0	0.00E0	0.00E0	0.00E0	3.10E1
1995	0.00E0	0.00E0	0.00E0	0.00E0	2.70E1
1996	0.00E0	0.00E0	0.00E0	0.00E0	2.78E1
1997	0.00E0	0.00E0	0.00E0	0.00E0	1.62E1
1998	0.00E0	0.00E0	0.00E0	0.00E0	3.21E1
1999	0.00E0	3.53E1	0.00E0	0.00E0	2.10E1
2000	0.00E0	4.28E1	0.00E0	0.00E0	2.34E1
2001	0.00E0	1.32E1	0.00E0	0.00E0	3.04E1
2002	0.00E0	0.00E0	0.00E0	0.00E0	2.33E1
2003	0.00E0	0.00E0	0.00E0	0.00E0	3.05E1
2004	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2005	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2006	0.00E0	0.00E0	0.00E0	0.00E0	1.08E1
2007	0.00E0	0.00E0	0.00E0	0.00E0	2.11E1
2008	0.00E0	0.00E0	0.00E0	0.00E0	1.24E1
2009	0.00E0	0.00E0	0.00E0	0.00E0	1.76E1
2010	0.00E0	0.00E0	0.00E0	0.00E0	2.33E1
2011	0.00E0	0.00E0	0.00E0	0.00E0	2.23E1
2012	0.00E0	0.00E0	0.00E0	0.00E0	3.34E1
2013	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2014 <sup>(2)</sup>	0.00E0	0.00E0	0.00E0	0.00E0	6.75E0
2015	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
2016	0.00E0	0.00E0	0.00E0	0.00E0	1.14E1

0.00E0 indicates no detectable measurements

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

### 3.8 SHORELINE SEDIMENT

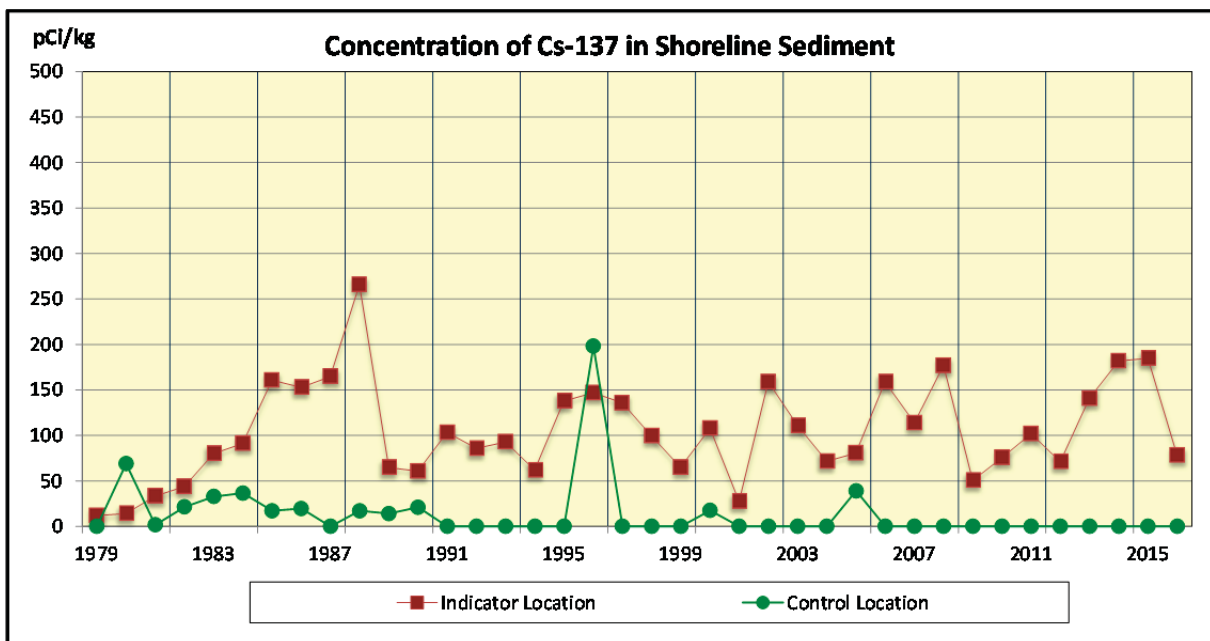
In 2016, six shoreline sediment samples were analyzed, four from two indicator locations and two at the control location.

Cs-137 activity was detected in two of the four indicator samples taken. The shoreline sediment location with the highest annual mean was location 130 with a mean concentration of 78.4 pCi/kg. Cs-137 was not detected in any of the control location samples.

Figure 3.8 shows Cs-137 highest annual mean indicator and control location concentrations since 1979. Table 3.8 gives indicator location highest annual means since 1979 for all radionuclides detected since the analysis change in 1988. There is no reporting level for shoreline sediment.

K-40 and Be-7 observed in shoreline samples are naturally occurring radionuclides.

Figure 3.8



*There is no reporting level for Cs-137 in shoreline sediment*



**Table 3.8 Mean Concentrations of Radionuclides in Shoreline Sediment (pCi/kg)**

YEAR	Mn-54 Indicator	Co-58 Indicator	Co-60 Indicator	Cs-134 Indicator	Cs-137 Indicator
1979	-1.07E1	2.25E1	-6.50E0	0.00E0	1.20E1
1980	1.06E1	-8.74E0	2.36E1	-3.53E0	1.44E1
1981	2.13E1	1.20E1	8.21E0	3.97E1	3.36E1
1982	5.38E1	1.66E1	-1.69E0	7.67E1	4.40E1
1983	4.40E0	3.43E1	2.12E1	7.65E1	8.02E1
1984	1.19E1	7.11E1	3.04E1	3.34E1	9.13E1
1985	4.77E0	1.46E1	9.20E0	2.02E1	1.61E2
1986	1.37E1	1.02E1	1.16E1	6.35E1	1.53E2
1987 <sup>(1)</sup>	0.00E0	1.06E2	2.10E1	4.20E1	1.65E2
1988	6.50E0	9.20E1	1.20E1	9.10E0	2.66E2
1989	2.90E1	3.80E1	2.90E1	5.30E1	6.50E1
1990	3.80E1	2.70E1	1.68E2	0.00E0	6.10E1
1991	2.80E1	5.30E1	1.31E2	0.00E0	1.03E2
1992	9.40E0	0.00E0	5.10E1	9.20E0	8.60E1
1993	0.00E0	2.20E1	8.60E1	0.00E0	9.30E1
1994	4.10E1	0.00E0	0.00E0	0.00E0	8.00E1
1995	1.70E1	0.00E0	2.30E1	0.00E0	1.38E2
1996	2.90E1	1.78E1	3.50E1	0.00E0	1.47E2
1997	0.00E0	0.00E0	1.11E2	3.10E1	1.36E2
1998	0.00E0	0.00E0	5.21E1	0.00E0	9.97E1
1999	0.00E0	2.47E1	8.49E1	0.00E0	6.51E1
2000	0.00E0	3.04E1	0.00E0	0.00E0	1.08E2
2001	0.00E0	0.00E0	0.00E0	0.00E0	2.77E1
2002	2.24E1	0.00E0	0.00E0	0.00E0	1.59E2
2003	0.00E0	0.00E0	0.00E0	0.00E0	1.11E2
2004	0.00E0	0.00E0	0.00E0	0.00E0	7.17E1
2005	0.00E0	0.00E0	0.00E0	0.00E0	8.08E1
2006	0.00E0	0.00E0	0.00E0	0.00E0	1.59E2
2007	0.00E0	0.00E0	0.00E0	0.00E0	1.14E2
2008	0.00E0	0.00E0	0.00E0	0.00E0	1.77E2
2009	0.00E0	0.00E0	0.00E0	0.00E0	5.08E1
2010	0.00E0	0.00E0	0.00E0	0.00E0	7.58E1
2011	0.00E0	0.00E0	0.00E0	0.00E0	1.02E2
2012	0.00E0	0.00E0	0.00E0	0.00E0	7.13E1
2013	0.00E0	0.00E0	0.00E0	0.00E0	1.41E2
2014 <sup>(2)</sup>	0.00E0	0.00E0	0.00E0	0.00E0	1.82E2
2015	0.00E0	0.00E0	0.00E0	0.00E0	1.85E2
2016	0.00E0	0.00E0	0.00E0	0.00E0	7.84E1

0.00E0 indicates no detectable measurements

(1) 1987 – Gamma spectroscopy system change

(2) 2014 – Gamma spectroscopy system change

## **3.9 DIRECT GAMMA RADIATION**

### **3.9.1 ENVIRONMENTAL TLD**

McGuire is licensed with an exclusion area boundary defined by UFSAR Section 2.1.2.1 as a 2500 foot radius from station center. This is the same boundary established for determining radioactive effluent release limits. No permanent public access is permitted within the exclusion area. TLD locations designated as "inner ring" are within a 0.5 mile radius from station center and all are used as indicators. Due to close proximity with McGuire, and most being within the exclusion area boundary, inner ring TLD locations are not good indicators of radiation exposure to a member of the public, but are good at determining nearby environmental effects due to plant operation. Based on their placement, inner ring TLD locations are expected to occasionally be influenced by normal plant operation. TLD locations designated as "outer ring" are outside the 0.5 mile "inner ring" but within a 5 mile radius of station center. All outer ring TLD locations are used as indicators. A subset of TLD locations are designated as "special interest". The nearest "special interest" locations are within the Owner Control Area approximately 0.2 miles from station center. They are located near public access areas for fishing and the Energy Explorium. The remaining "special interest" locations are within a 3 to 13 mile radius from station center. The one "control" location is greater than 15 miles from station center. This location was chosen to reduce the probability of influence from McGuire operation on data. The control location is not used as background subtraction in the TLD analysis. Its purpose is to provide a comparison to indicator locations.

In 2016, 163 total TLDs were analyzed, 159 at indicator locations and 4 at the control location. TLDs are collected and analyzed quarterly. Transit and laboratory background dose is determined and subtracted from gross field readings as required by ANSI N545-1975. Based on Appendix B TLD data, the highest annual total dose was 102 mrem at indicator location 180, 12.7 miles NNE of station center. Figure 3.9 and Table 3.9 show TLD inner ring, outer ring, and control location annual averages in mrem per year. Data is provided from 1979 to show preoperational values. As shown in the graph, doses measured by environmental TLDs show little or no change since the current TLD system was implemented. As shown in the graph, historical inner and outer ring averages compare similarly, while control data is somewhat higher. This is most likely an artifact of the underlying geologic structures at the control location. Comparing data from the 2016 McGuire Annual Radiological Effluent Release Report (ARERR), dose to a member of the public resulting from gaseous effluent releases at McGuire is a small fraction of measured TLD dose. Therefore, it can be concluded that gaseous effluents from McGuire had negligible impact on measured TLD values.

Starting in 2014, enhanced analytical methods were implemented. Quarterly and annual baseline dose was determined using appropriate statistical methods considering data from 2000 through 2012. Quarterly and annual dose for 2016 was compared to baseline values to determine if an Investigation Level had been exceeded for evaluation of potential dose to a member of the public. No TLD location exceeded the Quarterly or Annual Investigation Level in 2016, therefore no evaluation of dose to a member of the public from direct or scattered radiation was performed. Table 3.9-B summarizes the data.

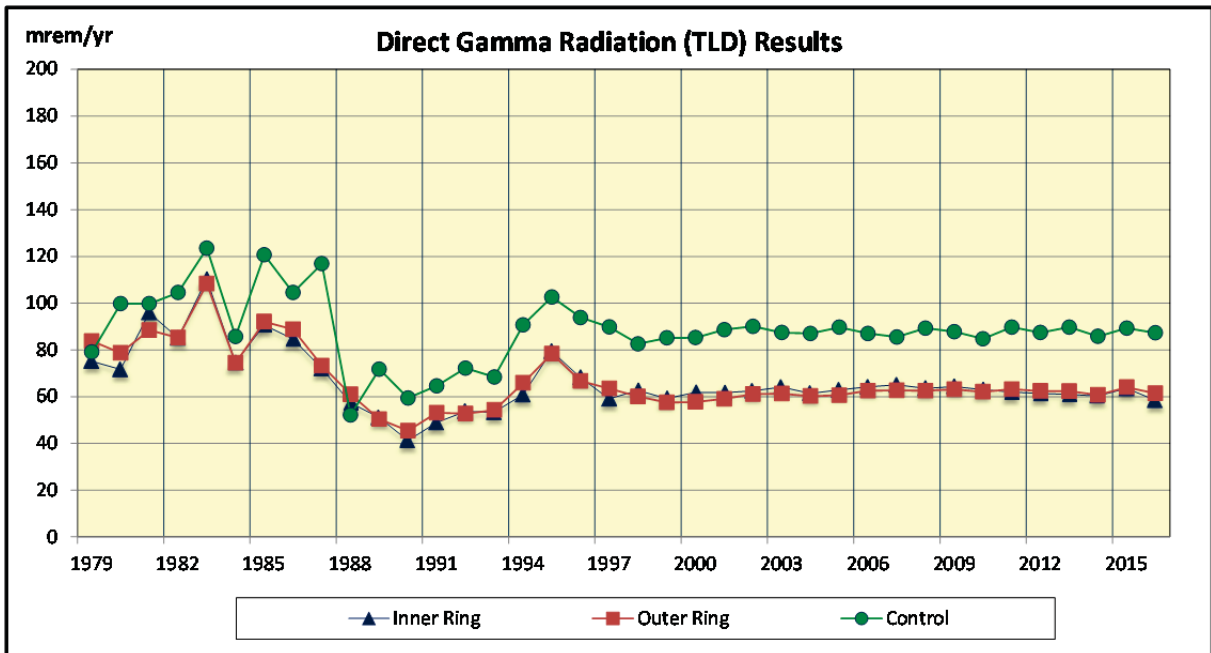
A TLD intercomparison program is conducted as part of the quality assurance program. Results of this program are included in section 5.7.

### **3.9.2 ISFSI**

The McGuire ISFSI began operation in 2000. It is located approximately 0.15 miles west of station center in a secured area specifically constructed to provide dry storage for spent nuclear fuel. The ISFSI is situated at a lower elevation compared to other structures in the protected area. Exposure from direct radiation north of the ISFSI is shielded by the berm on the south boundary of Lake Norman. Exposure from direct radiation at the exclusion area boundary west of the ISFSI is shielded by the decrease in elevation at the ISFSI to the river bank below Cowan's Ford Dam. These geographic features lessen the potential dose to a member of the public in accessible areas within the exclusion area boundary. The ISFSI employs the multiple vertical storage designs. Irradiated fuel assemblies are confined, protected, and shielded by reinforced concrete modules. All designs used are completely passive and designed to provide radiation shielding and safe confinement for a range of accident conditions and natural events. They each use a passive natural circulation ventilation system to remove decay heat from the modules. No radiological liquid or gaseous effluents are expected from the passive storage provided by the ISFSI. Therefore any dose to offsite locations would be from direct and scattered gamma radiation.

Environmental TLD results described in 3.9.1 above are reviewed quarterly to identify trends and demonstrate compliance with dose and dose rate limits at the 2500 foot exclusion area boundary. Additional TLD locations not associated with REMP are presently located on the McGuire protected area fence near the ISFSI and on the ISFSI boundary. These are used to demonstrate compliance with occupational exposure controls and augment REMP TLD results. Doses measured by environmental TLDs show little or no change since the ISFSI began operation.

Figure 3.9



*There is no reporting level for Direct Radiation (TLD)*

**Table 3.9-A Direct Gamma Radiation (TLD) Results**

YEAR	Inner Ring Average (mrem/yr)	Outer Ring Average (mrem/yr)	Control (mrem/yr)
1979	7.51E1	8.38E1	7.90E1
1980	7.16E1 <sup>†</sup>	7.88E1 <sup>†</sup>	9.98E1 <sup>†</sup>
1981	9.60E1	8.84E1	9.98E1
1982	8.50E1	8.52E1	1.05E2
1983	1.10E2	1.08E2	1.24E2
1984	7.46E1	7.44E1	8.57E1
1985	9.06E1	9.21E1	1.21E2
1986	8.46E1	8.88E1	1.05E2
1987	7.20E1	7.32E1	1.17E2
1988	5.73E1	6.10E1	5.21E1
1989	5.10E1	5.04E1	7.17E1
1990	4.12E1	4.54E1	5.94E1
1991	4.88E1	5.31E1	6.46E1
1992	5.37E1	5.27E1	7.22E1
1993	5.33E1	5.42E1	6.84E1
1994	6.08E1	6.58E1	9.07E1
1995	7.94E1	7.84E1	1.03E2
1996	6.82E1	6.67E1	9.39E1
1997	5.91E1	6.35E1	8.98E1
1998	6.26E1	6.00E1	8.26E1
1999	5.92E1	5.75E1	8.51E1
2000	6.18E1	5.77E1	8.52E1
2001	6.16E1	5.91E1	8.86E1
2002	6.24E1	6.11E1	9.01E1
2003	6.41E1	6.13E1	8.74E1
2004	6.14E1	6.02E1	8.70E1
2005	6.29E1	6.06E1	8.97E1
2006	6.41E1	6.25E1	8.70E1
2007	6.50E1	6.27E1	8.55E1
2008	6.36E1	6.25E1	8.93E1
2009	6.43E1	6.31E1	8.78E1
2010	6.30E1	6.20E1	8.47E1
2011	6.18E1	6.32E1	8.97E1
2012	6.13E1	6.24E1	8.74E1
2013	6.09E1	6.23E1	8.97E1
2014	6.03E1	6.08E1	8.57E1
2015	6.35E1	6.40E1	8.93E1
2016	5.84E1	6.14E1	8.73E1

<sup>†</sup> Values are based on two quarters due to change in TLD locations.

**Table 3.9-B Direct Gamma Radiation (TLD) McGuire 2016 Investigation Level**

McGuire 2016 MDD <sub>Q</sub> : 6	McGuire 2016 MDD <sub>A</sub> : 11
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Location	Quarterly (mrem)								Annual(mrem)			
	B <sub>Q</sub>	M <sub>Q</sub> Q1	M <sub>Q</sub> Q2	M <sub>Q</sub> Q3	M <sub>Q</sub> Q4	L <sub>Q</sub> Q1	L <sub>Q</sub> Q2	L <sub>Q</sub> Q3	L <sub>Q</sub> Q4	B <sub>A</sub>	M <sub>A</sub> *	L <sub>A</sub>
143	15.9	15.8	16.5	15.1	15.8	ND	ND	ND	ND	65.0	63.2	ND
144	14.3	16.4	12.9	12.9	14.0	ND	ND	ND	ND	57.5	56.2	ND
145	14.5	16.4	13.8	12.6	13.7	ND	ND	ND	ND	58.5	56.5	ND
146	13.6	15.2	13.0	12.5	13.5	ND	ND	ND	ND	54.9	54.2	ND
147	14.4	13.8	13.3	14.2	16.3	ND	ND	ND	ND	57.7	57.6	ND
148	12.6	14.4	11.8	10.9	12.7	ND	ND	ND	ND	51.2	49.9	ND
149	12.1	12.4	12.6	10.4	10.4	ND	ND	ND	ND	48.7	45.7	ND
151	14.6	13.6	14.6	13.6	13.6	ND	ND	ND	ND	59.2	55.4	ND
152	14.1	12.8	13.1	12.3	12.6	ND	ND	ND	ND	56.9	50.8	ND
153	18.7	16.8	17.4	16.2	16.8	ND	ND	ND	ND	75.0	67.2	ND
154	20.7	20.4	16.4	16.8	17.1	ND	ND	ND	ND	82.8	70.8	ND
156	16.3	17.0	15.3	14.4	15.0	ND	ND	ND	ND	68.3	61.8	ND
157	14.8	15.8	13.9	13.4	14.3	ND	ND	ND	ND	60.3	57.4	ND
158	14.2	15.0	14.3	11.6	13.9	ND	ND	ND	ND	57.8	54.8	ND
159	20.7	15.6	15.7	14.4	14.8	ND	ND	ND	ND	86.0	60.5	ND
160	16.1	17.1	18.7	13.9	16.3	ND	ND	ND	ND	65.4	66.0	ND
161	15.3	16.2	13.7	13.1	15.6	ND	ND	ND	ND	62.1	58.6	ND
162	11.4	12.7	10.1	10.7	11.1	ND	ND	ND	ND	45.8	44.7	ND
163	10.9	13.2	10.3	9.7	9.3	ND	ND	ND	ND	44.4	42.5	ND
165	18.3	19.4	19.4	16.6	19.8	ND	ND	ND	ND	74.5	75.1	ND
166	17.1	16.4	18.1	16.2	18.0	ND	ND	ND	ND	68.4	68.7	ND
167	18.3	19.7	16.9	16.2	18.9	ND	ND	ND	ND	73.2	71.6	ND
168	15.3	16.0	15.5	14.3	15.8	ND	ND	ND	ND	59.9	61.5	ND
169	13.7	12.6	14.2	13.7	14.5	ND	ND	ND	ND	55.4	55.0	ND
170	20.2	24.7	24.7	23.3	25.7	ND	ND	ND	ND	80.5	98.4	17.9 <sup>(1)</sup>
171	15.9	17.5	15.9	14.6	17.9	ND	ND	ND	ND	63.9	65.8	ND
172	15.2	14.3	13.6	13.5	14.0	ND	ND	ND	ND	62.9	55.3	ND
173	23.6	22.8	23.3	19.9	23.4	ND	ND	ND	ND	94.4	89.3	ND
174	21.4	21.1	21.3	20.3	21.8	ND	ND	ND	ND	87.5	84.5	ND
175	21.9	22.0	23.8	20.2	21.2	ND	ND	ND	ND	87.6	87.3	ND
177	13.3	13.4	12.3	10.9	13.8	ND	ND	ND	ND	53.2	50.4	ND
178	14.1	13.9	12.6	11.8	14.7	ND	ND	ND	ND	56.5	53.0	ND
180	25.5	26.3	24.0	---	26.4	ND	ND	ND	ND	102.0	102.3	ND
181	15.7	16.7	14.1	14.1	17.9	ND	ND	ND	ND	63.7	62.7	ND
182	15.6	17.9	16.4	17.2	15.9	ND	ND	ND	ND	62.3	67.4	ND
186	16.5	15.1	14.8	14.7	16.1	ND	ND	ND	ND	66.6	60.7	ND
187	16.6	17.1	16.9	15.5	16.0	ND	ND	ND	ND	68.0	65.5	ND
189	15.2	14.3	14.7	12.4	13.8	ND	ND	ND	ND	60.5	55.1	ND
190	19.5	18.8	19.2	16.3	19.1	ND	ND	ND	ND	78.0	73.4	ND
191	15.9	17.2	15.1	14.3	16.5	ND	ND	ND	ND	63.1	63.2	ND

\* M<sub>A</sub> determined by normalizing available quarterly data to 4 full quarters  
 ' --- ' indicates no data resulting from missing TLD, erroneous TLD reading, or omitted after investigation <sup>Note</sup>  
 (1) Result considered valid, but not related to McGuire operation.

Note: Data may be omitted after investigation considering the following: (1) Other TLD locations' data from upwind, downwind, and adjacent sectors (2) Review of documentation on location's characteristics, geography, topography, etc. (3) Comparison with other radiological data (i.e. gaseous effluent releases, direct radiation reports, surveys, dose calculations, Area TLDs, etc.).

**Table 3.9-B definition of terms**

- $MDD_Q$  = minimum differential dose, quarterly, 3 times 90<sup>th</sup> percentile  $s_Q$  determined from analysis in mrem
- $MDD_A$  = minimum differential dose, annual, 3 times 90<sup>th</sup> percentile  $s_A$  determined from analysis in mrem
- $B_Q$  = Quarterly baseline (mrem)
- $M_Q$  = location's 91 day standard quarter normalized dose (mrem per standard quarter)
- $L_Q$  = quarterly investigation level dose (mrem)
- $B_A$  = baseline background dose (mrem) (annual)
- $M_A$  = annual monitoring data -  $M_a$  determined by normalizing available quarterly data to 4 full quarters
- $L_A$  = annual investigation level dose (mrem)
- ND = not detected

### 3.10 LAND USE CENSUS

The land use census was conducted 6/8– 6/9/2016 as required by SLC 16.11.14. Table 3.10 summarizes census results. A map indicating identified locations is shown in Figure 3.10.

During the 2016 census, no new residences (nearer to the plant), no new irrigated gardens (superior to existing gardens) or milk locations were identified. The nearest residence is located in the East sector at 0.52 miles. No environmental program changes were required as a result of the 2016 land use census.

**Table 3.10 McGuire 2016 Land Use Census Results**

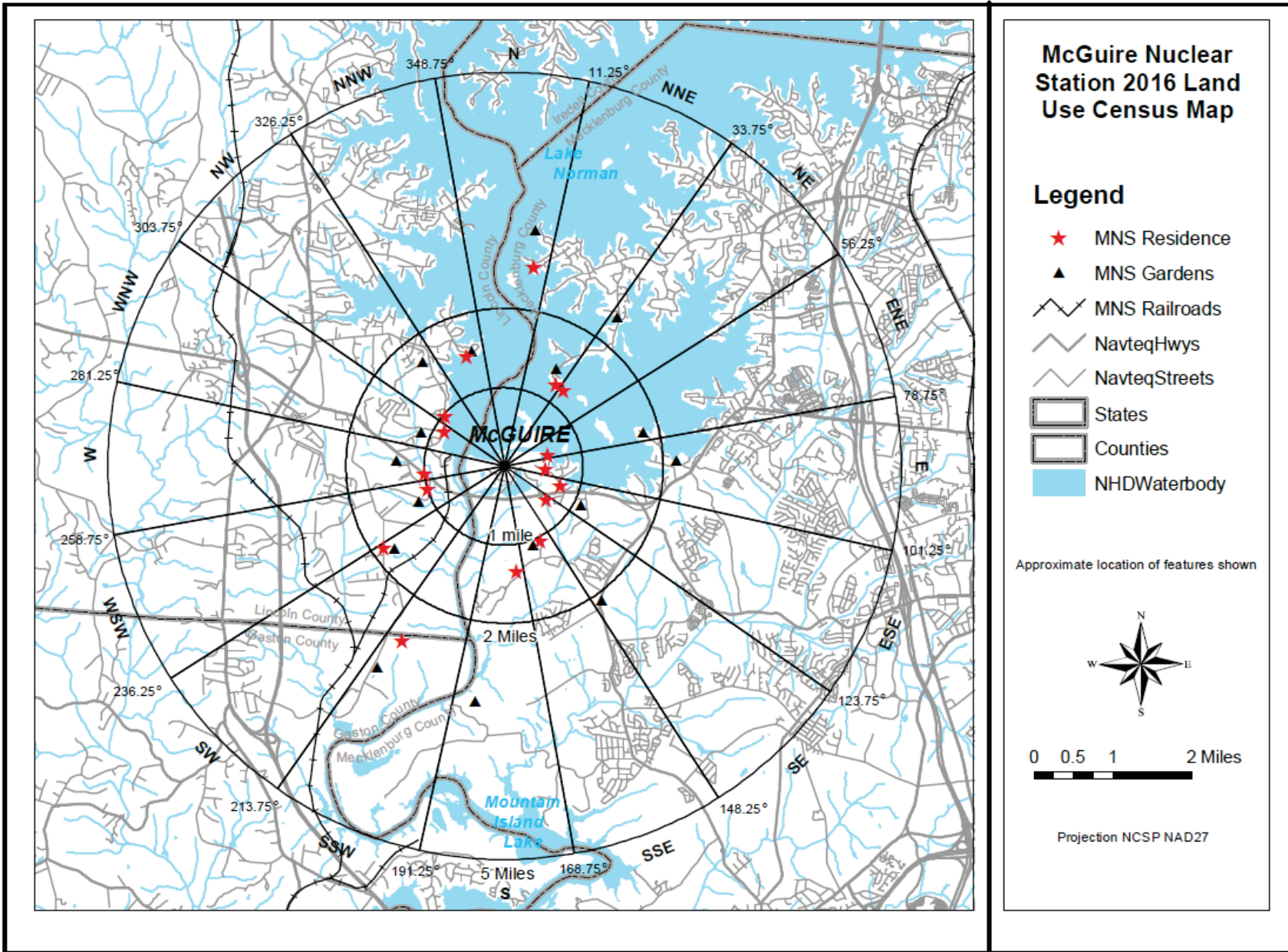
Sector		Distance (Miles)	Sector		Distance (Miles)
N	Nearest Residence	2.53	S	Nearest Residence	1.35
	Nearest Garden (Irr.)	3.03		Nearest Garden	3.14
	Nearest Milk Animal	-		Nearest Milk Animal	-
NNE	Nearest Residence	1.23	SSW	Nearest Residence	2.56
	Nearest Garden	1.40		Nearest Garden	2.94
	Nearest Milk Animal	-		Nearest Milk Animal	-
NE	Nearest Residence	1.21	SW	Nearest Residence	1.85
	Nearest Garden	2.38		Nearest Garden	1.88
	Nearest Milk Animal	-		Nearest Milk Animal	-
ENE	Nearest Residence	0.56	WSW	Nearest Residence	1.01
	Nearest Garden	1.98		Nearest Garden	1.10
	Nearest Milk Animal	-		Nearest Milk Animal	-
E	Nearest Residence	0.52	W	Nearest Residence	1.15
	Nearest Garden	2.11		Nearest Garden	1.23
	Nearest Milk Animal	-		Nearest Milk Animal	-
ESE	Nearest Residence	0.65	WNW	Nearest Residence	0.88
	Nearest Garden	1.06		Nearest Garden	1.15
	Nearest Milk Animal	-		Nearest Milk Animal	-
SE	Nearest Residence	0.67	NW	Nearest Residence	0.95
	Nearest Garden	2.10		Nearest Garden	1.68
	Nearest Milk Animal	-		Nearest Milk Animal	-
SSE	Nearest Residence	1.06	NNW	Nearest Residence	1.48
	Nearest Garden	1.06		Nearest Garden (Irr.)	1.52
	Nearest Milk Animal	-		Nearest Milk Animal	-

“-“ indicates no occurrences within the 5 mile radius

“(Irr.)” indicates irrigated garden



Figure 3.10



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## 4.0 EVALUATION OF DOSE

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### 4.1 DOSE FROM ENVIRONMENTAL MEASUREMENTS

Annual doses to maximum exposed individuals were estimated based on measured concentrations of radionuclides in 2016 MNS REMP samples. The primary purpose of estimating doses based on sample results is to allow comparison to effluent program dose estimates.

Doses based on sample results were calculated using the methodology and data presented in NRC Regulatory Guide 1.109. Measured radionuclide concentrations, averaged over the entire year for a specific radionuclide, indicator location and sample type, were used to calculate REMP-based doses. Where applicable, average background concentration at the corresponding control location was subtracted. Regulatory Guide 1.109 consumption rates for the maximum exposed individual were used in the calculations. When the guide listed “NO DATA” as the dose factor for a given radionuclide and organ, a dose factor of zero was assumed.

Maximum dose estimates (Highest Annual Mean Concentration) based on drinking water, fish, and shoreline sediment sample results are reported in Table 4.1-A. The individual critical population and pathway dose calculations are reported in Table 4.1-B.

REMP-based dose estimates are not reported for airborne radioiodine, airborne particulate, food crops, or milk sample types because no radionuclides attributable to MNS station operations were detected. Naturally occurring K-40 and Be-7 were detected in some samples but were not included in any REMP-based dose estimates. Dose estimates are not reported for surface water because sampled surface water is not considered to be a potable drinking water source although surface water tritium concentrations are used in calculating doses from fish. Exposure estimates based upon REMP TLD results are discussed in Section 3.9.

The maximum environmental organ dose estimate for any single sample type (excluding TLD results) collected during 2016 was 1.04E-1 mrem to the child bone from the consumption of vegetation.

### 4.2 ESTIMATED DOSE FROM RELEASES

Throughout the year, dose estimates were calculated based on actual 2016 liquid and gaseous effluent release data. Effluent-based dose estimates were calculated using the RETDAS computer program which employs methodology and data presented in NRC Regulatory Guide 1.109. These doses are shown in Table 4.1-A along with the corresponding REMP-based dose estimates. Summaries of RETDAS dose calculations are reported in the Annual Radioactive Effluent Release Report.

The effluent-based liquid release doses are summations of the dose contributions from the drinking water, fish, and shoreline pathways. For iodine, particulate, and tritium exposure the effluent-based gaseous release doses are summations of the dose contributors from ground/plane, inhalation, milk and vegetation pathways.

### **4.3 COMPARISON OF DOSES**

The environmental and effluent dose estimates given in Table 4.1-A agree reasonably well. The similarity of the doses indicate that the radioactivity levels in the environment do not differ significantly from those expected based on effluent measurements and modeling of the environmental exposure pathways. This indicates that effluent program dose estimates are both valid and reasonably conservative.

There are some differences in how effluent and environmental doses are calculated that affect the comparison. Doses calculated from environmental data are conservative because they are based on a mean that includes only samples with a net positive activity versus a mean that includes all sample results (i.e. zero results are not included in the mean). Also, airborne tritium is not measured in environmental samples but is used to calculate effluent doses.

Additionally, in 2010 McGuire began reporting estimated dose from effluent Carbon 14 (C-14). This change came about with the issuing of Regulatory Guide 1.21, Revision 2, Measuring, Evaluating and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste. A description of this change is found in the 2010 Annual Radiological Effluent Release Report. C-14 cannot be easily measured in the environment and therefore, environmental and effluent doses from C-14 cannot be compared directly.

In calculations based on liquid release pathways, drinking water consumption was the predominant dose pathway based on environmental and effluent data. The maximum total organ dose based on 2016 environmental sample results was 8.44E-2 mrem to the child liver. The maximum total organ dose of 1.07E-1 mrem for liquid effluent-based estimates was to the child liver.

In calculations based on gaseous release pathways, vegetation was the predominant dose pathway for effluent samples. The maximum organ dose for gaseous effluent estimates was 3.27E0 mrem to the child bone, with C-14 being the primary dose contributor. The maximum environmental dose was 1.04E-1 mrem to the child bone from the vegetation pathway.

The doses calculated do not exceed 40CFR190 or 10CFR50 dose commitment limits for members of the public. Doses to members of the public attributable to the operation of MNS are being maintained well within regulatory limits and are described in the Annual Radiological Effluent Release Report (ARERR).

**TABLE 4.1-A**

**MCGUIRE NUCLEAR STATION  
2016 ENVIRONMENTAL AND EFFLUENT DOSE COMPARISON**

**LIQUID RELEASE PATHWAY**

<b>Organ</b>	<b>Environmental or Effluent Data</b>	<b>Critical Age <sup>(1)</sup></b>	<b>Critical Pathway <sup>(2)</sup></b>	<b>Location</b>	<b>Maximum Dose <sup>(3)</sup> (mrem)</b>
Skin	Environmental	Teen	Shoreline Sediment	130 (0.52 mi SW)	2.06E-04
Skin	Effluent	Teen	Shoreline Sediment	Discharge Pt.	2.61E-04
Bone	Environmental	Child	Fresh Water Fish	129 (0.51 mi ENE)	2.57E-02
Bone	Effluent	Child	Fresh Water Fish	Discharge Pt.	9.00E-03
Liver	Environmental	Child	Drinking Water	101 (3.31 mi E)	8.44E-02
Liver	Effluent	Child	Drinking Water	3.31 mi E	1.07E-01
T. Body	Environmental	Child	Drinking Water	101 (3.31 mi E)	6.34E-02
T. Body	Effluent	Child	Drinking Water	3.31 mi E	1.04E-01
Thyroid	Environmental	Child	Drinking Water	101 (3.31 mi E)	5.97E-02
Thyroid	Effluent	Child	Drinking Water	3.31 mi E	1.03E-01
Kidney	Environmental	Child	Drinking Water	101 (3.31 mi E)	6.78E-02
Kidney	Effluent	Child	Drinking Water	3.31 mi E	1.04E-01
Lung	Environmental	Child	Drinking Water	101 (3.31 mi E)	6.26E-02
Lung	Effluent	Child	Drinking Water	3.31 mi E	1.03E-01
GI-LLI	Environmental	Child	Drinking Water	101 (3.31 mi E)	5.99E-02
GI-LLI	Effluent	Child	Drinking Water	3.31 mi E	1.03E-01

(1) Critical Age is the highest total dose (all pathways) to an age group.

(2) Critical Pathway is the highest individual dose within the identified Critical Age group.

(3) Maximum dose is a summation of the fish, drinking water and shoreline sediment pathways.

GASEOUS RELEASE PATHWAY**IODINE, PARTICULATE, and TRITIUM**

<b>Organ</b>	<b>Environmental or Effluent Data</b>	<b>Critical Age <sup>(1)</sup></b>	<b>Critical Pathway <sup>(2)</sup></b>	<b>Location</b>	<b>Maximum Dose <sup>(3)</sup> (mrem)</b>
Skin	Environmental	-	-	-	0.00E+00
Skin	Effluent	All	Ground Plane	1.0 mi. NNE	0.00E+00
Bone	Environmental	Child	Vegetation	120 (0.46 mi NNE)	1.04E-01
Bone	Effluent	Child	Vegetation	1.0 mi. NNE	3.27E+00
Liver	Environmental	Child	Vegetation	120 (0.46 mi NNE)	9.93E-02
Liver	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01
T. Body	Environmental	Adult	Vegetation	120 (0.46 mi NNE)	5.57E-02
T. Body	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01
Thyroid	Environmental	-	-	-	0.00E+00
Thyroid	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01
Kidney	Environmental	Child	Vegetation	120 (0.46 mi NNE)	3.24E-02
Kidney	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01
Lung	Environmental	Child	Vegetation	120 (0.46 mi NNE)	1.16E-02
Lung	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01
GI-LLI	Environmental	Child	Vegetation	120 (0.46 mi NNE)	1.65E-03
GI-LLI	Effluent	Child	Vegetation	1.0 mi. NNE	8.98E-01

(1) Critical Age is the highest total dose (all pathways) to an age group.

(2) Critical Pathway is the highest individual dose within the identified Critical Age group.

(3) Maximum dose is a summation of the ground/plane, inhalation, milk and vegetation pathways.

**TABLE 4.1-B***Maximum Individual Dose for 2016 based on Environmental Measurements (mrem) for McGuire Nuclear Station*

Age	Sample Medium	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Skin
<b>Infant</b>	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	<u>TOTAL</u>	0.00E+00	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	0.00E+00
<b>Child</b>	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	1.04E-01	9.93E-02	1.47E-02	0.00E+00	3.24E-02	1.16E-02	6.22E-04	0.00E+00
	Fish	2.57E-02	2.55E-02	4.47E-03	8.36E-04	8.86E-03	3.72E-03	9.90E-04	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	3.69E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.30E-05
	<u>TOTAL</u>	1.30E-01	1.84E-01	7.81E-02	5.97E-02	1.00E-01	7.42E-02	6.05E-02	4.30E-05
<b>Teen</b>	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	5.74E-02	7.63E-02	2.66E-02	0.00E+00	2.60E-02	1.01E-02	1.09E-03	0.00E+00
	Fish	2.04E-02	2.82E-02	1.05E-02	1.01E-03	1.03E-02	4.61E-03	1.40E-03	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	1.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.06E-04
	<u>TOTAL</u>	7.78E-02	1.35E-01	6.81E-02	3.18E-02	6.71E-02	4.55E-02	3.33E-02	2.06E-04
<b>Adult</b>	Airborne	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Drinking Water	0.00E+00	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02	0.00E+00
	Milk	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Broadleaf Vegetation	6.22E-02	8.51E-02	5.57E-02	0.00E+00	2.89E-02	9.60E-03	1.65E-03	0.00E+00
	Fish	1.91E-02	2.74E-02	1.84E-02	1.32E-03	1.02E-02	4.26E-03	1.82E-03	0.00E+00
	Shoreline Sediment	0.00E+00	0.00E+00	3.16E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.69E-05
	<u>TOTAL</u>	8.13E-02	1.56E-01	1.18E-01	4.49E-02	8.27E-02	5.75E-02	4.71E-02	3.69E-05

Note: Dose tables are provided for sample media displaying positive nuclide occurrence.

**McGuire Nuclear Station**  
**Dose from Drinking Water Pathway for 2016 Data**  
**Maximum Exposed Infant**

Infant Dose from Drinking Water Pathway (mrem) = Usage (l) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/l)

Usage (intake in one year) = 330 l

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Water (pCi/l)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	1.99E-05	4.51E-06	NO DATA	4.41E-06	NO DATA	7.31E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	3.60E-06	8.98E-06	NO DATA	NO DATA	NO DATA	8.97E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	3.08E-05	5.38E-05	2.12E-05	NO DATA	NO DATA	1.59E-05	2.57E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	1.08E-05	2.55E-05	NO DATA	NO DATA	NO DATA	2.57E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	1.84E-05	6.31E-05	2.91E-05	NO DATA	3.06E-05	NO DATA	5.33E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	4.20E-08	1.73E-08	1.00E-08	NO DATA	1.24E-08	NO DATA	1.46E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	2.06E-07	5.02E-08	3.56E-08	NO DATA	5.41E-08	NO DATA	2.50E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	3.59E-05	4.23E-05	1.86E-05	1.39E-02	4.94E-05	NO DATA	1.51E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	3.77E-04	7.03E-04	7.10E-05	NO DATA	1.81E-04	7.42E-05	1.91E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	5.22E-04	6.11E-04	4.33E-05	NO DATA	1.64E-04	6.64E-05	1.91E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BaLa-140	1.71E-04	1.71E-07	8.81E-06	NO DATA	4.06E-08	1.05E-07	4.20E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	3.08E-07	3.08E-07	3.08E-07	3.08E-07	3.08E-07	3.08E-07	101	569	0.00E+00	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02
Dose Commitment (mrem) =										0.00E+00	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02	5.78E-02

**McGuire Nuclear Station**  
**Dose from Drinking Water Pathway for 2016 Data**  
**Maximum Exposed Child**

Child Dose from Drinking Water Pathway (mrem) = Usage (l) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/l)

Usage (intake in one year)= 510 l

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Water (pCi/l)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	1.07E-05	2.85E-06	NO DATA	3.00E-06	NO DATA	8.98E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	1.80E-06	5.51E-06	NO DATA	NO DATA	NO DATA	1.05E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	1.65E-05	2.67E-05	1.33E-05	NO DATA	NO DATA	7.74E-06	2.78E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C0-60	NO DATA	5.29E-06	1.56E-05	NO DATA	NO DATA	NO DATA	2.93E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	1.37E-05	3.65E-05	2.27E-05	NO DATA	2.30E-05	NO DATA	6.41E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	2.25E-08	8.76E-09	6.26E-09	NO DATA	8.23E-09	NO DATA	1.62E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	1.16E-07	2.55E-08	2.27E-08	NO DATA	3.65E-08	NO DATA	2.66E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	1.72E-05	1.73E-05	9.83E-06	5.72E-03	2.84E-05	NO DATA	1.54E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	2.34E-04	3.84E-04	8.10E-05	NO DATA	1.19E-04	4.27E-05	2.07E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	3.27E-04	3.13E-04	4.62E-05	NO DATA	1.02E-04	3.67E-05	1.96E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BaLa-140	8.31E-05	7.28E-08	4.85E-06	NO DATA	2.37E-08	4.34E-08	4.21E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	101	569	0.00E+00	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02
Dose Commitment (mrem) =										0.00E+00	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02	5.89E-02



**McGuire Nuclear Station**  
**Dose from Broadleaf Vegetation Pathway for 2016 Data**  
**Maximum Exposed Child**

Child Dose from Vegetation Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year)= 26 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Food (pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
I-131	1.72E-05	1.73E-05	9.83E-06	5.72E-03	2.84E-05	NO DATA	1.54E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	2.34E-04	3.84E-04	8.10E-05	NO DATA	1.19E-04	4.27E-05	2.07E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	3.27E-04	3.13E-04	4.62E-05	NO DATA	1.02E-04	3.67E-05	1.96E-06	120	12.2	1.04E-01	9.93E-02	1.47E-02	0.00E+00	3.24E-02	1.16E-02	6.22E-04
Dose Commitment (mrem) =										1.04E-01	9.93E-02	1.47E-02	0.00E+00	3.24E-02	1.16E-02	6.22E-04

**McGuire Nuclear Station**  
**Dose from Fish Pathway for 2016 Data**  
**Maximum Exposed Child**

Child Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 663 pCi/l x 0.9 = 597 pCi/kg

Usage (intake in one year) = 6.9 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator	Fish	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
								Location	(pCi/kg)							
Mn-54	NO DATA	1.07E-05	2.85E-06	NO DATA	3.00E-06	NO DATA	8.98E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	1.80E-06	5.51E-06	NO DATA	NO DATA	NO DATA	1.05E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	1.65E-05	2.67E-05	1.33E-05	NO DATA	NO DATA	7.74E-06	2.78E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C0-60	NO DATA	5.29E-06	1.56E-05	NO DATA	NO DATA	NO DATA	2.93E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	1.37E-05	3.65E-05	2.27E-05	NO DATA	2.30E-05	NO DATA	6.41E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	2.34E-04	3.84E-04	8.10E-05	NO DATA	1.19E-04	4.27E-05	2.07E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	3.27E-04	3.13E-04	4.62E-05	NO DATA	1.02E-04	3.67E-05	1.96E-06	129	11.4	2.57E-02	2.46E-02	3.63E-03	0.00E+00	8.02E-03	2.89E-03	1.54E-04
H-3	NO DATA	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	128	597	0.00E+00	8.36E-04	8.36E-04	8.36E-04	8.36E-04	8.36E-04	8.36E-04
Dose Commitment (mrem) =										2.57E-02	2.55E-02	4.47E-03	8.36E-04	8.86E-03	3.72E-03	9.90E-04

***McGuire Nuclear Station***  
***Dose from Shoreline Sediment Pathway for 2016 Data***  
***Maximum Exposed Child***

Shoreline Recreation = 14 hr (in one year)  
 Shore Width Factor = 0.3 (lake shore - location 129)  
 Shore Width Factor = 0.2 (river shoreline - location 130)  
 Sediment Surface Mass = 40 kg/m<sup>2</sup>

Child Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External Dose Factor (mrem/hr per pCi/m<sup>2</sup>) x Shore Width Factor x Sediment Surface Mass (kg/m<sup>2</sup>) x Sediment Concentration (pCi/kg)

Radionuclide	External Dose Factor Standing <u>on Contaminated Ground</u>		Indicator Location	Highest Annual Net <u>Mean Concentration</u> Sediment (pCi/kg)	<u>Dose</u> (mrem)	
	T. Body	Skin			T. Body	Skin
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00
Cs-137	4.20E-09	4.90E-09	130	78.4	3.69E-05	4.30E-05
Dose Commitment (mrem) =					3.69E-05	4.30E-05

**McGuire Nuclear Station**  
**Dose from Drinking Water Pathway for 2016 Data**  
**Maximum Exposed Teen**

Teen Dose from Drinking Water Pathway (mrem) = Usage (l) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/l)

Usage (intake in one year)= 510 l

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Water (pCi/l)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	5.90E-06	1.17E-06	NO DATA	1.76E-06	NO DATA	1.21E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	9.72E-07	2.24E-06	NO DATA	NO DATA	NO DATA	1.34E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	5.87E-06	1.37E-05	5.29E-06	NO DATA	NO DATA	4.32E-06	3.24E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.81E-06	6.33E-06	NO DATA	NO DATA	NO DATA	3.66E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	5.76E-06	2.00E-05	9.33E-06	NO DATA	1.28E-05	NO DATA	8.47E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	8.22E-09	4.56E-09	2.51E-09	NO DATA	4.42E-09	NO DATA	1.95E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	4.12E-08	1.30E-08	8.94E-09	NO DATA	1.91E-08	NO DATA	3.00E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	5.85E-06	8.19E-06	4.40E-06	2.39E-03	1.41E-05	NO DATA	1.62E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	8.37E-05	1.97E-04	9.14E-05	NO DATA	6.26E-05	2.39E-05	2.45E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	1.12E-04	1.49E-04	5.19E-05	NO DATA	5.07E-05	1.97E-05	2.12E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BaLa-140	2.84E-05	3.48E-08	1.83E-06	NO DATA	1.18E-08	2.34E-08	4.38E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	101	569	0.00E+00	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02
Dose Commitment (mrem)=										0.00E+00	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02	3.08E-02

**McGuire Nuclear Station**  
**Dose from Broadleaf Vegetation Pathway for 2016 Data**  
**Maximum Exposed Teen**

Teen Dose from Vegetation Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year) = 42 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Food (pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
I-131	5.85E-06	8.19E-06	4.40E-06	2.39E-03	1.41E-05	NO DATA	1.62E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	8.37E-05	1.97E-04	9.14E-05	NO DATA	6.26E-05	2.39E-05	2.45E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	1.12E-04	1.49E-04	5.19E-05	NO DATA	5.07E-05	1.97E-05	2.12E-06	120	12.2	5.74E-02	7.63E-02	2.66E-02	0.00E+00	2.60E-02	1.01E-02	1.09E-03
Dose Commitment (mrem) =										5.74E-02	7.63E-02	2.66E-02	0.00E+00	2.60E-02	1.01E-02	1.09E-03

**McGuire Nuclear Station**  
**Dose from Fish Pathway for 2016 Data**  
**Maximum Exposed Teen**

Teen Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 663 pCi/l x 0.9 = 597 pCi/kg

Usage (intake in one year) = 16 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Location	(pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	5.90E-06	1.17E-06	NO DATA	1.76E-06	NO DATA	1.21E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	9.72E-07	2.24E-06	NO DATA	NO DATA	NO DATA	1.34E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	5.87E-06	1.37E-05	5.29E-06	NO DATA	NO DATA	4.32E-06	3.24E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.81E-06	6.33E-06	NO DATA	NO DATA	NO DATA	3.66E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	5.76E-06	2.00E-05	9.33E-06	NO DATA	1.28E-05	NO DATA	8.47E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	8.37E-05	1.97E-04	9.14E-05	NO DATA	6.26E-05	2.39E-05	2.45E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	1.12E-04	1.49E-04	5.19E-05	NO DATA	5.07E-05	1.97E-05	2.12E-06	129	11.4	2.04E-02	2.72E-02	9.47E-03	0.00E+00	9.25E-03	3.59E-03	3.87E-04
H-3	NO DATA	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	128	597	0.00E+00	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03	1.01E-03
Dose Commitment (mrem) =										2.04E-02	2.82E-02	1.05E-02	1.01E-03	1.03E-02	4.61E-03	1.40E-03

***McGuire Nuclear Station***  
***Dose from Shoreline Sediment Pathway for 2016 Data***  
***Maximum Exposed Teen***

Shoreline Recreation = 67 hr (in one year)  
 Shore Width Factor = 0.3 (lake shore - location 129)  
 Shore Width Factor = 0.2 (river shoreline - location 130)  
 Sediment Surface Mass = 40 kg/m<sup>2</sup>

Teen Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External Dose Factor (mrem/hr per pCi/m<sup>2</sup>) x Shore Width Factor x Sediment Surface Mass (kg/m<sup>2</sup>) x Sediment Concentration (pCi/kg)

Radionuclide	External Dose Factor Standing on Contaminated Ground		Indicator Location	Sediment (pCi/kg)	Highest Annual Net Mean Concentration		Dose	
	(mrem/hr per pCi/m <sup>2</sup> ) T. Body	Skin			(mrem) T. Body	Skin		
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00		
Cs-137	4.20E-09	4.90E-09	130	78.4	1.76E-04	2.06E-04		
Dose Commitment (mrem) =					1.76E-04	2.06E-04		

**McGuire Nuclear Station**  
**Dose from Drinking Water Pathway for 2016 Data**  
**Maximum Exposed Adult**

Adult Dose from Drinking Water Pathway (mrem) = Usage (l) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/l)

Usage (intake in one year) = 730 l

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Water (pCi/l)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	4.57E-06	8.72E-07	NO DATA	1.36E-06	NO DATA	1.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	7.45E-07	1.67E-06	NO DATA	NO DATA	NO DATA	1.51E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	4.34E-06	1.02E-05	3.91E-06	NO DATA	NO DATA	2.85E-06	3.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.14E-06	4.72E-06	NO DATA	NO DATA	NO DATA	4.02E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	4.84E-06	1.54E-05	6.96E-06	NO DATA	1.03E-05	NO DATA	9.70E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	6.22E-09	3.46E-09	1.86E-09	NO DATA	3.42E-09	NO DATA	2.10E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	3.04E-08	9.75E-09	6.60E-09	NO DATA	1.53E-08	NO DATA	3.09E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	NO DATA	1.57E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	6.22E-05	1.48E-04	1.21E-04	NO DATA	4.79E-05	1.59E-05	2.59E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	7.97E-05	1.09E-04	7.14E-05	NO DATA	3.70E-05	1.23E-05	2.11E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BaLa-140	2.03E-05	2.55E-08	1.33E-06	NO DATA	8.67E-09	1.46E-08	4.18E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	NO DATA	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	101	569	0.00E+00	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02
Dose Commitment (mrem) =										0.00E+00	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02	4.36E-02



**McGuire Nuclear Station**  
**Dose from Broadleaf Vegetation Pathway for 2016 Data**  
**Maximum Exposed Adult**

Adult Dose from Vegetation (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

Usage (intake in one year) = 64 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Indicator Location	Food (pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
I-131	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	NO DATA	1.57E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	6.22E-05	1.48E-04	1.21E-04	NO DATA	4.79E-05	1.59E-05	2.59E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	7.97E-05	1.09E-04	7.14E-05	NO DATA	3.70E-05	1.23E-05	2.11E-06	120	12.2	6.22E-02	8.51E-02	5.57E-02	0.00E+00	2.89E-02	9.60E-03	1.65E-03
Dose Commitment (mrem) =										6.22E-02	8.51E-02	5.57E-02	0.00E+00	2.89E-02	9.60E-03	1.65E-03

**McGuire Nuclear Station**  
**Dose from Fish Pathway for 2016 Data**  
**Maximum Exposed Adult**

Adult Dose from Fish Pathway (mrem) = Usage (kg) x Dose Factor (mrem/pCi ingested) x Concentration (pCi/kg)

H-3 Concentration in Fish = Surface Water pCi/l x Bioaccumulation Factor 0.9 pCi/kg per pCi/l = 663 pCi/l x 0.9 = 597 pCi/kg

Usage (intake in one year) = 21 kg

Radionuclide	<u>Ingestion Dose Factor</u>							<u>Highest Annual Net Mean Concentration</u>		<u>Dose (mrem)</u>						
	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI	Location	(pCi/kg)	Bone	Liver	T. Body	Thyroid	Kidney	Lung	GI-LLI
Mn-54	NO DATA	4.57E-06	8.72E-07	NO DATA	1.36E-06	NO DATA	1.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	NO DATA	7.45E-07	1.67E-06	NO DATA	NO DATA	NO DATA	1.51E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	4.34E-06	1.02E-05	3.91E-06	NO DATA	NO DATA	2.85E-06	3.40E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	NO DATA	2.14E-06	4.72E-06	NO DATA	NO DATA	NO DATA	4.02E-05	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	4.84E-06	1.54E-05	6.96E-06	NO DATA	1.03E-05	NO DATA	9.70E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	6.22E-05	1.48E-04	1.21E-04	NO DATA	4.79E-05	1.59E-05	2.59E-06	ALL	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	7.97E-05	1.09E-04	7.14E-05	NO DATA	3.70E-05	1.23E-05	2.11E-06	129	11.4	1.91E-02	2.61E-02	1.71E-02	0.00E+00	8.86E-03	2.94E-03	5.05E-04
H-3	NO DATA	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	128	597	0.00E+00	1.32E-03	1.32E-03	1.32E-03	1.32E-03	1.32E-03	1.32E-03
Dose Commitment (mrem) =										1.91E-02	2.74E-02	1.84E-02	1.32E-03	1.02E-02	4.26E-03	1.82E-03

***McGuire Nuclear Station***  
***Dose from Shoreline Sediment Pathway for 2016 Data***  
***Maximum Exposed Adult***

Shoreline Recreation = 12 hr (in one year)  
 Shore Width Factor = 0.3 (lake shore - location 129)  
 Shore Width Factor = 0.2 (river shoreline - location 130)  
 Sediment Surface Mass = 40 kg/m<sup>2</sup>

Adult Dose from Shoreline Sediment Pathway (mrem) = Shoreline Recreation (hr) x External Dose Factor (mrem/hr per pCi/m<sup>2</sup>) x Shore Width Factor x Sediment Surface Mass (kg/m<sup>2</sup>) x Sediment Concentration (pCi/kg)

Radionuclide	<u>External Dose Factor Standing on Contaminated Ground</u> (mrem/hr per pCi/m <sup>2</sup> )		<u>Highest Annual Net Mean Concentration</u>		<u>Dose</u> (mrem)	
	T. Body	Skin	Indicator Location	Sediment (pCi/kg)	T. Body	Skin
Cs-134	1.20E-08	1.40E-08	ALL	0.00	0.00E+00	0.00E+00
Cs-137	4.20E-09	4.90E-09	130	78.4	3.16E-05	3.69E-05
Dose Commitment (mrem) =					3.16E-05	3.69E-05

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# 5.0 QUALITY ASSURANCE

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## 5.1 SAMPLE COLLECTION

EnRad Laboratories and the Environmental Water Resources Group performed the environmental sample collections as specified by approved sample collection procedures.

## 5.2 SAMPLE ANALYSIS

EnRad Laboratories performed the environmental sample analyses as specified by approved analysis procedures. EnRad Laboratories is located in Huntersville, North Carolina, at Duke Energy's Environmental Center.

## 5.3 DOSIMETRY ANALYSIS

The Radiation Dosimetry and Records group performed the environmental dosimetry measurements as specified by approved dosimetry analysis procedures.

## 5.4 LABORATORY EQUIPMENT QUALITY ASSURANCE

### 5.4.1 DAILY QUALITY CONTROL

EnRad Laboratories has an internal quality assurance program which monitors each type of instrumentation for reliability and accuracy. Daily quality control checks ensure that instruments are in proper working order and these checks are used to monitor instrument performance.

### 5.4.2 CALIBRATION VERIFICATION

National Institute of Standards and Technology (NIST) standards that represent counting geometries are analyzed as unknowns at various frequencies ranging from weekly to annually to verify that efficiency calibrations are valid. The frequency is dependent upon instrument use and performance. Investigations are performed and documented should calibration verification data fall outside of the acceptable limits.

### 5.4.3 BATCH PROCESSING

Method quality control samples are analyzed with sample analyses that are processed in batches. These include tritium analyses in drinking water, surface water, and ground water samples.

## 5.5 DUKE ENERGY INTERLABORATORY COMPARISON PROGRAM

In 2016 Duke Energy Environmental Laboratory (EnRad) participated in interlaboratory programs to satisfy Radiological Environmental Monitoring Program requirements in

Duke Energy nuclear plant Offsite Dose Calculation Manuals and Selected Licensee Commitments Manuals, as applicable. In addition, EnRad Laboratory participated in the ERA RadChemTM Proficiency Testing program to satisfy North Carolina state drinking water radiochemistry certification requirements.

EnRad Laboratory participated in three interlaboratory programs: Eckert & Ziegler Analytics (EZA), ERA, and Fleet Scientific Services (FSS). EZA results were evaluated against IP 84750 acceptance criteria stated in EnRad Procedure 515, Cross Check Program Administration. ERA evaluated reported results based on National Environmental Laboratory Accreditation Conference (NELAC) Field of Proficiency Testing criteria. FSS results were evaluated as prescribed in Duke Energy Nuclear Generation Procedure SRPMP 9-2.

### **5.5.1 DUKE ENERGY INTERLABORATORY PROGRAM**

EnRad Laboratories participated in the Duke Energy Fleet Scientific Services (FSS) Interlaboratory Program during 2016. Interlaboratory cross check samples including mixed gamma in water (Marinelli beakers), low-level I-131 in water, gross beta in water, and tritium in water samples were analyzed during 2016. A summary of the EnRad Laboratory program results for 2016 is documented in Table 5.0-A.

Interlaboratory cross checks were distributed by Fleet Scientific Services (FSS) staff in accordance with SRPMP 9-2. One media type, water, was analyzed for mixed gamma, tritium, beta, and LLI-131. Table 5.0-A lists results for specific analyses. One-hundred and seventy-four results were reported of which 164 (94.3%) were in agreement.

NCR # 02072622 was written by FSS staff due to five out of nine third quarter alpha nuclide results from the FSS cross check samples Alpha/Beta in Water (Q163ABW1, Q163ABW2 and Q163ABW3) showed non-agreement, three other results showed warning limit evaluations.

In the third quarter of 2016, one data set of the three analyzed for FSS Tritium in Water Sample Q163TWR3 showed a low bias when compared to the known value. NCR # 02074856 was initiated to investigate why this sample set was lower than expected.

### **5.5.2 ECKERT & ZIEGLER ANALYTICS CROSS CHECK PROGRAM**

EnRad Laboratories participated in the Eckert & Ziegler Analytics Cross Check Program during 2016. Cross check samples including air filters (single and composites), air cartridges, gross beta in water, various mixed gamma samples in Marinelli beakers (soil, vegetation, milk, and water), tritium in water, and Iodine in milk and water samples were analyzed at various times of the year. A summary of the EnRad Laboratory program results for 2016 is documented in Table 5.0-B.

Interlaboratory cross check samples from EZA were received and analyzed in all four quarters of 2016. Table 5.0-B lists the performance for specific samples. Seventy-nine results were reported of which 79 (100%) met the acceptance criteria based on IP 84750. Five EZA cross check samples did exhibit either a high or low bias in at least one nuclide of interest and EnRad proactively initiated NCRs to investigate these biases. The first bias was found in the second quarter gross alpha/beta in water sample (E11527), where a high alpha activity bias was evident in the sample set. NCR # 02052857 was written to investigate the high alpha activity bias in the water samples.

In the third quarter of 2016, the Gamma in Composite Filter cross check (E11590) showed a low activity bias for the Cr-51 nuclide, the other eight reported nuclides were all found to be in trend. NCR # 02080821 was initiated to track the actions for investigating the Cr-51 activity bias. The Gamma in Water cross check (E11588), which was also analyzed in the third quarter of 2016 showed a high activity bias for the Fe-59 isotope. The remaining nine isotopes of sample E11588 were all found to be within trend, NCR # 02074444 was written to investigate the high Fe-59 activity bias.

NCR # 02027474 was written to document and track the associated actions of an overall high activity bias in the LLI-131 in Milk cross check samples (E11472) analyzed in the first quarter of 2016. In the second quarter of 2016, LLI-131 in Water cross check samples (E11526) also showed an overall high bias within the sample set. NCR # 02045683 was initiated to investigate this continued LLI-131 bias since the samples are analyzed the same and the simulated milk matrix is similar to that of the water. In the third quarter of 2016, cross check E11592, LLI-131 in Milk was analyzed and no activity bias was evident.

### **5.5.3 ERA PROFICIENCY TESTING**

EnRad Laboratories performed method proficiency testing through a program administered by Environmental Resource Associates (ERA) of Arvada, CO. ERA supplied requested method proficiency samples for analysis and nuclide concentration determination. ERA reported proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Health Drinking Water Laboratory Certification Program. A summary of these proficiency test data for 2016 is documented in Table 5.0-C.

Proficiency samples were distributed in the second and fourth quarters. Table 5.0-C summarizes the results and evaluation. Fourteen results were reported of which 14 (100%) were in agreement.

Two NCRs were proactively written to investigate nuclide activity biases seen in ERA Proficiency Samples. NCR # 02032824 was written to investigate a high activity bias in the Zn-65 nuclide of Proficiency Sample RAD-105, Gamma Emitters in Water, which was analyzed in the second quarter of 2016. The remaining four identified nuclides in sample RAD-105 were within trend. In the fourth quarter of 2016, NCR # 02081918 was written to document and track the actions of an overall high bias in the sample set for Proficiency Sample RAD-107,

I-131 in Water. However, during review of data for AREOR preparations, it was found that the closure for NCR # 02081918 was insufficient to explain the event, so NCR # 02103716 was generated to better document the possible cause of the I-131 bias.

## **5.6 STATE OF NORTH CAROLINA INTERCOMPARISON PROGRAM**

EnRad Laboratories routinely participates with the North Carolina Department of Health and Human Services in an intercomparison program. EnRad Laboratories sends McGuire Nuclear Plant Radiological Environmental Monitoring Program air, drinking water, surface water, milk, fish, food products, and shoreline sediment samples to the North Carolina Department of Health and Human Services, Division of Public Health for intercomparison analysis.

## **5.7 TLD INTERCOMPARISON PROGRAM**

### **5.7.1 NUCLEAR TECHNOLOGY SERVICES INTERCOMPARISON PROGRAM**

Radiation Dosimetry and Records participates in a quarterly TLD intercomparison program administered by Nuclear Technology Services, Inc. of Roswell, GA. Nuclear Technology Services irradiates environmental dosimeters quarterly and sends them to the Radiation Dosimetry and Records group for analysis of the unknown estimated delivered exposure. A summary of the 2016 Nuclear Technology Services Intercomparison Report is documented in Table 5.0-D.

The individual measurements were evaluated and results falling outside the acceptable ratio criteria had an evaluation performed to identify any recommended remedial actions and to reduce anomalous errors. During third and fourth quarters of 2016 an environmental external TLD cross check failed and NCR # 02106779 was written to document the failures. To prevent recurrence, the two TLDs were pulled and visually inspected for abnormalities in the elements and overall integrity of the TLDs and no abnormalities were found. The two TLDs were then annealed and irradiated to 100 GU, then read 7 days later. Both TLDs over responded on E3 or E4 and were outside of the 10% acceptance criteria per procedure RD/0/B/4000/13, Environmental Monitoring. TLD # 103523 and 103511 were both removed from Environmental TLD inventory and removed from service. Complete documentation of any evaluation will be available and provided to the NRC upon request.

# TABLE 5.0-A

## DUKE ENERGY

### INTERLABORATORY COMPARISON PROGRAM

#### 2016 EnRad Fleet Scientific Services Cross Check Performance Summary

Interlaboratory cross checks were distributed by Fleet Scientific Services (FSS) staff in accordance with SRPMP 9-2. One media type, water, was analyzed for mixed gamma, tritium, beta, and LLI-131. Table 5.0-A lists results for specific analyses. One-hundred and seventy-four results were reported of which 164 (94.3%) were in agreement.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q161GWR 1.0 L	Mn-54	1	pCi/L	7540	6890	1.09	Agreement
			1	pCi/L	7500	6890	1.09	Agreement
			1	pCi/L	7540	6890	1.09	Agreement
		Co-57	1	pCi/L	4960	4880	1.02	Agreement
			1	pCi/L	5060	4880	1.04	Agreement
			1	pCi/L	5070	4880	1.04	Agreement
		Co-60	1	pCi/L	4400	4370	1.01	Agreement
			1	pCi/L	4760	4370	1.09	Agreement
			1	pCi/L	4530	4370	1.04	Agreement
		Zn-65	1	pCi/L	11900	10600	1.12	Agreement
			1	pCi/L	12200	10600	1.15	Agreement
			1	pCi/L	11800	10600	1.11	Agreement
		Y-88	1	pCi/L	3170	3310	0.96	Agreement
			1	pCi/L	3460	3310	1.04	Agreement
			1	pCi/L	3270	3310	0.99	Agreement
		Sn-113	1	pCi/L	9800	9190	1.07	Agreement
			1	pCi/L	9720	9190	1.06	Agreement
			1	pCi/L	9700	9190	1.06	Agreement
		Cs-134	1	pCi/L	6970	7750	0.90	Agreement
			1	pCi/L	7020	7750	0.91	Agreement
			1	pCi/L	6980	7750	0.90	Agreement
		Cs-137	1	pCi/L	5240	4930	1.06	Agreement
			1	pCi/L	5340	4930	1.08	Agreement
			1	pCi/L	5230	4930	1.06	Agreement



## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q161GWR 3.5 L	Mn-54	1	pCi/L	7640	6890	1.11	Agreement
			1	pCi/L	7680	6890	1.12	Agreement
			1	pCi/L	7690	6890	1.12	Agreement
		Co-57	1	pCi/L	5110	4880	1.05	Agreement
			1	pCi/L	5240	4880	1.07	Agreement
			1	pCi/L	5210	4880	1.07	Agreement
		Co-60	1	pCi/L	4750	4370	1.09	Agreement
			1	pCi/L	4710	4370	1.08	Agreement
			1	pCi/L	4630	4370	1.06	Agreement
		Zn-65	1	pCi/L	11900	10600	1.12	Agreement
			1	pCi/L	12000	10600	1.13	Agreement
			1	pCi/L	11800	10600	1.11	Agreement
		Y-88	1	pCi/L	3360	3310	1.01	Agreement
			1	pCi/L	3490	3310	1.05	Agreement
			1	pCi/L	3380	3310	1.02	Agreement
		Sn-113	1	pCi/L	9970	9190	1.08	Agreement
			1	pCi/L	9970	9190	1.08	Agreement
			1	pCi/L	9860	9190	1.07	Agreement
		Cs-134	1	pCi/L	7410	7750	0.96	Agreement
			1	pCi/L	7390	7750	0.95	Agreement
			1	pCi/L	7350	7750	0.95	Agreement
		Cs-137	1	pCi/L	5340	4930	1.08	Agreement
			1	pCi/L	5420	4930	1.10	Agreement
			1	pCi/L	5250	4930	1.06	Agreement

## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q163GWR 0.25 L	Cr-51	3	pCi/L	30400	26400	1.15	Agreement
			3	pCi/L	28800	26400	1.09	Agreement
			3	pCi/L	28600	26400	1.08	Agreement
		Mn-54	3	pCi/L	26700	21800	1.23	Agreement
			3	pCi/L	25300	21800	1.16	Agreement
			3	pCi/L	24900	21800	1.14	Agreement
		Co-58	3	pCi/L	23100	20200	1.14	Agreement
			3	pCi/L	21700	20200	1.07	Agreement
			3	pCi/L	21500	20200	1.06	Agreement
		Fe-59	3	pCi/L	19100	14900	1.28	Warning <sup>1</sup>
			3	pCi/L	18100	14900	1.21	Agreement
			3	pCi/L	18000	14900	1.20	Agreement
		Co-60	3	pCi/L	38100	31400	1.21	Agreement
			3	pCi/L	35600	31400	1.13	Agreement
			3	pCi/L	35600	31400	1.13	Agreement
		Zn-65	3	pCi/L	52500	40000	1.31	Warning <sup>1</sup>
			3	pCi/L	49200	40000	1.23	Agreement
			3	pCi/L	49100	40000	1.23	Agreement
		Cs-134	3	pCi/L	32100	31300	1.03	Agreement
			3	pCi/L	30200	31300	0.97	Agreement
			3	pCi/L	29700	31300	0.95	Agreement
		Cs-137	3	pCi/L	25900	22100	1.17	Agreement
			3	pCi/L	24500	22100	1.11	Agreement
			3	pCi/L	24100	22100	1.09	Agreement
		Ce-141	3	pCi/L	16900	14700	1.15	Agreement
			3	pCi/L	15800	14700	1.08	Agreement
			3	pCi/L	16100	14700	1.10	Agreement

1) Warnings were caused by expected double humped coincidence summing and the FSS cross check provider did not request an investigation and does not constitute a non-agreement.

## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q163GWR 0.5 L	Cr-51	3	pCi/L	27200	26400	1.03	Agreement
			3	pCi/L	27200	26400	1.03	Agreement
			3	pCi/L	26900	26400	1.02	Agreement
		Mn-54	3	pCi/L	23700	21800	1.09	Agreement
			3	pCi/L	23900	21800	1.10	Agreement
			3	pCi/L	24000	21800	1.10	Agreement
		Co-58	3	pCi/L	20400	20200	1.01	Agreement
			3	pCi/L	20700	20200	1.02	Agreement
			3	pCi/L	20700	20200	1.02	Agreement
		Fe-59	3	pCi/L	16800	14900	1.12	Agreement
			3	pCi/L	17100	14900	1.14	Agreement
			3	pCi/L	17200	14900	1.15	Agreement
		Co-60	3	pCi/L	33500	31400	1.07	Agreement
			3	pCi/L	34200	31400	1.09	Agreement
			3	pCi/L	34000	31400	1.08	Agreement
		Zn-65	3	pCi/L	46100	40000	1.15	Agreement
			3	pCi/L	47000	40000	1.17	Agreement
			3	pCi/L	46900	40000	1.17	Agreement
		Cs-134	3	pCi/L	30900	31300	0.99	Agreement
			3	pCi/L	28800	31300	0.92	Agreement
			3	pCi/L	28800	31300	0.92	Agreement
		Cs-137	3	pCi/L	22900	22100	1.04	Agreement
			3	pCi/L	23300	22100	1.05	Agreement
			3	pCi/L	23200	22100	1.05	Agreement
		Ce-141	3	pCi/L	15000	14700	1.02	Agreement
			3	pCi/L	15300	14700	1.04	Agreement
			3	pCi/L	15300	14700	1.04	Agreement

## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Gamma in Water	Q163GWR 3.5 L	Cr-51	3	pCi/L	27700	26400	1.05	Agreement
			3	pCi/L	27600	26400	1.04	Agreement
			3	pCi/L	27400	26400	1.04	Agreement
		Mn-54	3	pCi/L	23600	21800	1.08	Agreement
			3	pCi/L	23800	21800	1.09	Agreement
			3	pCi/L	23700	21800	1.09	Agreement
		Co-58	3	pCi/L	20600	20200	1.02	Agreement
			3	pCi/L	20800	20200	1.03	Agreement
			3	pCi/L	20700	20200	1.02	Agreement
		Fe-59	3	pCi/L	16500	14900	1.10	Agreement
			3	pCi/L	16700	14900	1.12	Agreement
			3	pCi/L	16500	14900	1.10	Agreement
		Co-60	3	pCi/L	34100	31400	1.09	Agreement
			3	pCi/L	34100	31400	1.09	Agreement
			3	pCi/L	34000	31400	1.08	Agreement
		Zn-65	3	pCi/L	45600	40000	1.14	Agreement
			3	pCi/L	45900	40000	1.15	Agreement
			3	pCi/L	45500	40000	1.14	Agreement
		Cs-134	3	pCi/L	32700	31300	1.05	Agreement
			3	pCi/L	30100	31300	0.96	Agreement
			3	pCi/L	29900	31300	0.96	Agreement
		Cs-137	3	pCi/L	23100	22100	1.05	Agreement
			3	pCi/L	23400	22100	1.06	Agreement
			3	pCi/L	23200	22100	1.05	Agreement
		Ce-141	3	pCi/L	15400	14700	1.05	Agreement
			3	pCi/L	15700	14700	1.07	Agreement
			3	pCi/L	15500	14700	1.06	Agreement

## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
Tritium in Water	Q161TWR1	H-3	1	pCi/L	4880	4730	1.03	Agreement
			1	pCi/L	4810	4730	1.02	Agreement
			1	pCi/L	4770	4730	1.01	Agreement
	Q161TWR2	H-3	1	pCi/L	80200	81200	0.99	Agreement
			1	pCi/L	80100	81200	0.99	Agreement
			1	pCi/L	79700	81200	0.98	Agreement
	Q161TWR3	H-3	1	pCi/L	488	471	1.04	Agreement
			1	pCi/L	478	471	1.02	Agreement
			1	pCi/L	479	471	1.02	Agreement
Tritium in Water	Q163TWR1	H-3	3	pCi/L	1230	1250	0.98	Agreement
			3	pCi/L	1170	1250	0.93	Agreement
			3	pCi/L	1220	1250	0.97	Agreement
	Q163TWR2	H-3	3	pCi/L	134000	134000	1.00	Agreement
			3	pCi/L	134000	134000	1.00	Agreement
			3	pCi/L	132000	134000	0.99	Agreement
	Q163TWR3	H-3	3	pCi/L	380	387	0.98	Agreement <sup>2</sup>
			3	pCi/L	388	387	1.00	Agreement <sup>2</sup>
			3	pCi/L	413	387	1.07	Agreement <sup>2</sup>

2) NCR # 02074856

## TABLE 5.0-A (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	GO Value	EnRad/GO Ratio	Evaluation
LLI-131 in Water	Q162LIW4	I-131	2	pCi/L	84.7	79.6	1.06	Agreement
			2	pCi/L	85.6	79.6	1.07	Agreement
			2	pCi/L	84.4	79.6	1.06	Agreement
	Q162LIW5	I-131	2	pCi/L	2030	1850	1.10	Agreement
			2	pCi/L	1950	1850	1.05	Agreement
			2	pCi/L	2000	1850	1.08	Agreement
	Q162LIW6	I-131	2	pCi/L	403	380	1.06	Agreement
			2	pCi/L	396	380	1.04	Agreement
			2	pCi/L	391	380	1.03	Agreement
Alpha Beta in Water	Q163ABW1	Am-241	3	pCi/L	603	470	1.28	Warning <sup>3</sup>
			3	pCi/L	591	470	1.26	Warning <sup>3</sup>
			3	pCi/L	588	470	1.25	Agreement
		Cs-137	3	pCi/L	293	289	1.01	Agreement
			3	pCi/L	293	289	1.01	Agreement
			3	pCi/L	288	289	1.00	Agreement
	Q163ABW2	Am-241	3	pCi/L	381	271	1.41	Non-Agreement <sup>3</sup>
			3	pCi/L	380	271	1.40	Non-Agreement <sup>3</sup>
			3	pCi/L	377	271	1.39	Non-Agreement <sup>3</sup>
		Cs-137	3	pCi/L	262	258	1.02	Agreement
			3	pCi/L	260	258	1.01	Agreement
			3	pCi/L	270	258	1.05	Agreement
	Q163ABW3	Am-241	3	pCi/L	321	238	1.35	Non-Agreement <sup>3</sup>
			3	pCi/L	326	238	1.37	Non-Agreement <sup>3</sup>
			3	pCi/L	308	238	1.29	Warning <sup>3</sup>
		Cs-137	3	pCi/L	489	493	0.99	Agreement
			3	pCi/L	486	493	0.99	Agreement
			3	pCi/L	483	493	0.98	Agreement

3) NCR # 02072622

# TABLE 5.0-B

## ECKERT & ZIEGLER ANALYTICS

### CROSS CHECK PROGRAM

#### 2016 Cross Check Results for EnRad Laboratories

Interlaboratory cross check samples from EZA were received and analyzed in all four quarters of 2016. Results are reported directly to Eckert & Ziegler Analytics. Environmental cross check samples were analyzed in replicate, and the result closest to the mean is reported to Eckert & Ziegler Analytics. The acceptance criteria for the program was based on the NRC Inspection Manual Procedure 84750 (IP 84750). Table 5.0-B lists the performance for specific samples. Seventy-nine results were reported of which 79 (100%) met the acceptance criteria based on IP 84750.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Beta Filter in Planchet	E11474A	Cs-137	1	pCi	139	134	1.05	Agreement
	E11591	Cs-137	3	pCi	55.5	56.7	0.98	Agreement
	E11665A	Cs-137	4	pCi	225	228	0.99	Agreement
Gamma in Soil	E11529	Ce-141	2	pCi/g	0.19	0.21	0.92	Agreement
		Cr-51	2	pCi/g	0.41	0.42	0.98	Agreement
		Cs-134	2	pCi/g	0.26	0.27	0.97	Agreement
		Cs-137	2	pCi/g	0.25	0.26	0.94	Agreement
		Co-58	2	pCi/g	0.20	0.22	0.91	Agreement
		Mn-54	2	pCi/g	0.20	0.19	1.02	Agreement
		Fe-59	2	pCi/g	0.19	0.19	1.04	Agreement
		Zn-65	2	pCi/g	0.37	0.36	1.04	Agreement
		Co-60	2	pCi/g	0.25	0.26	0.96	Agreement
LLI-131 in Water	E11526	I-131	2	pCi/L	109	99.8	1.09	Agreement <sup>1</sup>
Gross Alpha/Beta in Water	E11527	Am-241	2	pCi/L	83.6	74.9	1.12	Agreement <sup>2</sup>
		Cs-137	2	pCi/L	251	250	1.00	Agreement <sup>2</sup>
Gamma in Vegetation (Coffee Grounds)	E11528	Ce-141	2	pCi/g	0.23	0.23	1.01	Agreement
		Cr-51	2	pCi/g	0.44	0.45	0.98	Agreement
		Cs-134	2	pCi/g	0.27	0.29	0.94	Agreement
		Cs-137	2	pCi/g	0.20	0.20	1.00	Agreement
		Co-58	2	pCi/g	0.22	0.23	0.96	Agreement
		Mn-54	2	pCi/g	0.21	0.21	1.00	Agreement
		Fe-59	2	pCi/g	0.20	0.20	1.00	Agreement
		Zn-65	2	pCi/g	0.45	0.39	1.17	Agreement
		Co-60	2	pCi/g	0.28	0.28	0.98	Agreement

1) NCR # 02045683

2) NCR # 02052857

## TABLE 5.0-B (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Gamma in Composite Filter	E11471	Ce-141	1	pCi	80.1	75.6	1.06	Agreement
		Cr-51	1	pCi	213	187	1.14	Agreement
		Cs-134	1	pCi	102	99.9	1.02	Agreement
		Cs-137	1	pCi	119	124	0.96	Agreement
		Co-58	1	pCi	86.9	90.2	0.96	Agreement
		Mn-54	1	pCi	92.9	89.6	1.04	Agreement
		Fe-59	1	pCi	110	101	1.09	Agreement
		Zn-65	1	pCi	139	137	1.01	Agreement
		Co-60	1	pCi	195	187	1.04	Agreement
Gamma in Composite Filter	E11590	Ce-141	3	pCi	76.0	70.3	1.08	Agreement
		Cr-51	3	pCi	183	178	1.03	Agreement <sup>3</sup>
		Cs-134	3	pCi	102	102	1.00	Agreement
		Cs-137	3	pCi	88.3	89.4	0.99	Agreement
		Co-58	3	pCi	72.1	73.4	0.98	Agreement
		Mn-54	3	pCi	115	115	1.00	Agreement
		Fe-59	3	pCi	63.5	68.4	0.93	Agreement
		Zn-65	3	pCi	143	135	1.06	Agreement
		Co-60	3	pCi	104	102	1.02	Agreement
Gamma in Water	E11588	I-131	3	pCi/L	50.3	49.0	1.03	Agreement
		Ce-141	3	pCi/L	89.5	85.2	1.05	Agreement
		Cr-51	3	pCi/L	230	215	1.07	Agreement
		Cs-134	3	pCi/L	112	124	0.90	Agreement
		Cs-137	3	pCi/L	112	108	1.03	Agreement
		Co-58	3	pCi/L	88.9	89.0	1.00	Agreement
		Mn-54	3	pCi/L	149	139	1.07	Agreement
		Fe-59	3	pCi/L	97.4	82.8	1.18	Agreement <sup>4</sup>
		Zn-65	3	pCi/L	180	163	1.10	Agreement
		Co-60	3	pCi/L	131	123	1.06	Agreement

3) NCR # 02080821

4) NCR # 02074444



## TABLE 5.0-B (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Gamma in Filter (Falcon)	E11589	Ce-141	3	pCi	84.6	72.9	1.16	Agreement
		Cr-51	3	pCi	209	184	1.13	Agreement
		Cs-134	3	pCi	123	106	1.16	Agreement
		Cs-137	3	pCi	99.8	92.7	1.08	Agreement
		Co-58	3	pCi	75.8	76.1	1.00	Agreement
		Mn-54	3	pCi	123	119	1.03	Agreement
		Fe-59	3	pCi	79.7	70.9	1.12	Agreement
		Zn-65	3	pCi	171	140	1.22	Agreement
		Co-60	3	pCi	116	105	1.10	Agreement
Gamma in Milk	E11475	I-131	1	pCi/L	86.5	82.2	1.05	Agreement
		Ce-141	1	pCi/L	101	98.4	1.03	Agreement
		Cr-51	1	pCi/L	243	243	1.00	Agreement
		Cs-134	1	pCi/L	121	130	0.93	Agreement
		Cs-137	1	pCi/L	175	161	1.09	Agreement
		Co-58	1	pCi/L	117	117	1.00	Agreement
		Mn-54	1	pCi/L	127	117	1.09	Agreement
		Fe-59	1	pCi/L	143	131	1.09	Agreement
		Zn-65	1	pCi/L	186	179	1.04	Agreement
		Co-60	1	pCi/L	266	244	1.09	Agreement
Gross Alpha/Beta in Water	E11668	Am-241	4	pCi/L	135	146	0.92	Agreement
		Cs-137	4	pCi/L	270	293	0.92	Agreement
LLI-131 in Milk	E11472	I-131	1	pCi/L	102	92	1.11	Agreement <sup>5</sup>
	E11592	I-131	3	pCi/L	82.6	81.5	1.01	Agreement
Tritium in Water	E11530	H-3	2	pCi/L	12200	12000	1.01	Agreement
	E11666	H-3	4	pCi/L	11900	11900	1.00	Agreement
I-131 in Charcoal Cartridge	E11473	I-131	1	pCi	90	89	1.01	Agreement
	E11587	I-131	3	pCi	61.9	58.6	1.06	Agreement

5) NCR # 02027474

# TABLE 5.0-C

## ENVIRONMENTAL RESOURCE ASSOCIATES (ERA)

### PROFICIENCY TESTING

#### 2016 Proficiency Test Results for EnRad Laboratories

North Carolina Department of Health and Human Services Laboratory Certification

EnRad Laboratories

Proficiency test samples are received, prepared, and analyzed in second and fourth quarters of 2016. Results are reported directly to Environmental Resource Associates as described in the instruction package within the study period. Proficiency test data are reported to ERA for evaluation. The acceptance criteria for the program was based on the National Environmental Laboratory Accreditation Conference (NELAC) Field of Proficiency Testing criteria. Fourteen results were reported of which 14 (100 %) met the acceptance criteria. ERA reports proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Drinking Water Laboratory Certification Program. This testing is to satisfy the North Carolina state drinking water radiochemistry certification requirements.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	ERA Value	Acceptance Limits	Evaluation
Gamma Emitters in Water	RAD-105	Ba-133	2	pCi/L	56.6	58.8	48.7-64.9	Agreement
		Cs-134	2	pCi/L	42.8	43.3	34.6-47.6	Agreement
		Cs-137	2	pCi/L	86.3	78.4	70.6-88.9	Agreement
		Co-60	2	pCi/L	101	102	91.8-114	Agreement
		Zn-65	2	pCi/L	244	214	193-251	Agreement <sup>1</sup>
	RAD-107	Ba-133	4	pCi/L	54	54.9	45.4-60.7	Agreement
		Cs-134	4	pCi/L	77.4	81.8	67.0-90.0	Agreement
		Cs-137	4	pCi/L	210	210	189-233	Agreement
		Co-60	4	pCi/L	68.9	64.5	58.0-73.4	Agreement
		Zn-65	4	pCi/L	280	245	220-287	Agreement
Tritium in Water	RAD-105	H-3	2	pCi/L	7940	7840	6790-8620	Agreement
	RAD-107	H-3	4	pCi/L	9670	9820	8540-10800	Agreement
Iodine-131 in Water	RAD-105	I-131	2	pCi/L	28.1	26.6	22.1-31.3	Agreement
	RAD-107	I-131	4	pCi/L	30.7	26.3	21.9-31.0	Agreement <sup>2</sup>

1) NCR # 02032824

2) NCR # 02081918

# TABLE 5.0-D

## 2016 ENVIRONMENTAL DOSIMETER

### CROSS-CHECK RESULTS

#### Nuclear Technology Services

Radiation Dosimetry and Records participates in a quarterly TLD intercomparison program administered by Nuclear Technology Services, Inc. of Roswell, GA. Nuclear Technology Services irradiates environmental dosimeters quarterly and sends them to Radiation Dosimetry and Records group for analysis of the unknown estimated delivered exposure. The individual measurements were evaluated and results falling outside the acceptable ratio criteria had an evaluation performed to identify any recommended remedial actions and to reduce anomalous errors. Complete documentation of any evaluation will be available and provided to the NRC upon request.

1st Quarter 2016						2nd Quarter 2016					
TLD Number	Reported (mR)	Delivered (mR)	Bias (% diff)	Pass/Fail Criteria	Pass/Fail	TLD Number	Reported (mR)	Delivered (mR)	Bias (% diff)	Pass/Fail Criteria	Pass/Fail
102234	90.33	88.74	1.79	<+/-15%	Pass	103685	16.86	15.90	6.04	<+/-15%	Pass
102082	87.38	88.74	-1.53	<+/-15%	Pass	103686	17.24	15.90	8.43	<+/-15%	Pass
103299	90.78	88.74	2.30	<+/-15%	Pass	103704	15.76	15.90	-0.88	<+/-15%	Pass
103287	95.55	88.74	7.67	<+/-15%	Pass	103705	16.21	15.90	1.95	<+/-15%	Pass
103752	92.49	88.74	4.23	<+/-15%	Pass	103714	17.45	15.90	9.75	<+/-15%	Pass
Average Bias (B)			2.89			Average Bias (B)			5.06		
Standard Deviation (S)			3.38			Standard Deviation (S)			4.45		
Measure Performance  B +S			6.27	<15%	Pass	Measure Performance  B +S			9.51	<15%	Pass
3rd Quarter 2016						4th Quarter 2016					
TLD Number	Reported (mR)	Delivered (mR)	Bias (% diff)	Pass/Fail Criteria	Pass/Fail	TLD Number	Reported (mR)	Delivered (mR)	Bias (% diff)	Pass/Fail Criteria	Pass/Fail
102058	73.65	69.8	5.58	<+/-15%	Pass	100527	81.50	75.3	8.23	<+/-15%	Pass
103540	76.65	69.8	9.88	<+/-15%	Pass	100345	80.56	75.3	6.99	<+/-15%	Pass
103523	82.05	69.8	17.62	<+/-15%	Fail <sup>1</sup>	101386	82.55	75.3	9.63	<+/-15%	Pass
100795	74.03	69.8	6.12	<+/-15%	Pass	100123	81.17	75.3	7.80	<+/-15%	Pass
100355	71.79	69.8	2.91	<+/-15%	Pass	103511	87.26	75.3	15.88	<+/-15%	Fail <sup>1</sup>
Average Bias (B)			8.42			Average Bias (B)			9.71		
Standard Deviation (S)			5.71			Standard Deviation (S)			3.58		
Measure Performance  B +S			14.13	<15%	Pass	Measure Performance  B +S			13.29	<15%	Pass

1) NCR # 02106779 generated for 3<sup>rd</sup> and 4<sup>th</sup> Quarter 2016 failures

**APPENDIX A**

**ENVIRONMENTAL SAMPLING**  
**&**  
**ANALYSIS PROCEDURES**

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# APPENDIX A

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## ENVIRONMENTAL SAMPLING AND ANALYSIS PROCEDURES

Adherence to established procedures for sampling and analysis of all environmental media at McGuire Nuclear Station was required to ensure compliance with Station Selected Licensee Commitments. Analytical procedures were employed to ensure that Selected Licensee Commitments detection capabilities were achieved.

Environmental sampling and analyses were performed by EnRad Laboratories, Dosimetry and Records, and the Environmental Water Resources Group.

This appendix describes the environmental sampling frequencies and analysis procedures by media type.

### I. CHANGE OF SAMPLING PROCEDURES

Telemetric REMP air location equipment monitoring was implemented during 2016 and dual air sampler placement discontinued (NCR # 01993673).

REMP air filter orientation was changed during 2016 by inward facing the scrim side (shiny side or fuzzy side) and outward facing the crosshatch side (dull side or paper side) as indicated by manufacturer recommendation (NCR # 02026783, 02088363).

### II. DESCRIPTION OF ANALYSIS PROCEDURES

Gamma spectroscopy analyses are performed using high purity germanium gamma detectors and Canberra analytical software. Designated sample volumes are transferred to appropriate counting geometries and analyzed by gamma spectroscopy. Perishable samples such as fish and broadleaf vegetation are ground to achieve a homogeneous mixture. Soils and sediments are dried, sifted to remove foreign objects (rocks, clams, glass, etc.) then transferred to appropriate counting geometry.

Low-level iodine analyses are performed by passing a designated sample aliquot through a pre-weighed amount of ion exchange resin to remove and concentrate any iodine in the aqueous sample (milk). The resin is then dried, mixed thoroughly, and a net resin weight determined before being transferred to appropriate counting geometry and analyzed by gamma spectroscopy.

Tritium analyses are performed quarterly by using low-level environmental liquid scintillation analysis technique on a Perkin-Elmer 2900TR liquid scintillation system or Perkin-Elmer 3100TR liquid scintillation system. Tritium samples are distilled and batch

processed with a laboratory fortified blank, matrix spike, matrix spike duplicate, and blank to verify instrument performance and sample preparation technique are acceptable.

Gross beta analysis is performed by concentrating a designated aliquot of sample precipitate and analyzing by Tennelec XLB Series 5 gas-flow proportional counters. Samples are batch processed with a blank to ensure sample contamination has not occurred.

### **III. CHANGE OF ANALYSIS PROCEDURES**

REMP air filter orientation was changed during 2016 by inward facing the scrim side (shiny side or fuzzy side) and outward facing the crosshatch side (dull side or paper side) as indicated by manufacturer recommendation (NCR # 02026783, 02088363). Calibration standards using the new configuration were implemented during 2016.

### **IV. SAMPLING AND ANALYSIS PROCEDURES**

#### **A.1 AIRBORNE PARTICULATE AND RADIOIODINE**

Airborne particulate and radioiodine samples at each of seven locations were composited continuously by means of continuous air samplers. Air particulates were collected on a particulate filter and radioiodines were collected in a charcoal cartridge positioned behind the filter in the sampler. The samplers are designed to operate at a constant flow rate (in order to compensate for any filter loading) and are set to sample approximately 2 cubic feet per minute. Filters and cartridges were collected weekly. A separate weekly gamma analysis was performed on each charcoal cartridge and air particulate. A weekly gross beta analysis was performed on each filter. The continuous composite samples were collected from the locations listed below.

Location 102 = Amity Church Road (9.89 mi. WNW)(Control)

Location 103 = Cottonwood (4.20 mi. NE)

Location 120 = Site Boundary (0.46 mi. NNE)

Location 121 = Site Boundary (0.47 mi. NE)

Location 125 = Site Boundary (0.38 mi. SW)

Location 133 = Cornelius (6.23 mi. ENE)

Location 195 = Fishing Access Road (0.19 mi. N)

#### **A.2 DRINKING WATER**

Monthly composite samples were collected. A gross beta and gamma analysis was performed on monthly composites. Tritium analysis was performed on the quarterly composites. The composites were collected monthly from the locations listed below.

Location 101 = North Mecklenburg Water Treatment Facility (3.31 mi E)

Location 119 = Mt. Holly Municipal Water Supply (7.40 mi. SSW)

Location 132 = Charlotte Municipal Water Supply (11.1 mi. SSE)

Location 136 = Mooresville Municipal Water Supply (12.7 mi. NNE) (Control)

Location 194 = East Lincoln County Water Supply (6.73 mi. NNW)

### **A.3 SURFACE WATER**

Monthly composite samples were collected. A gamma analysis was performed on the monthly composites. Tritium analysis was performed on the quarterly composites sample. The composites were collected monthly from the locations listed below.

Location 128 = Discharge Canal Bridge (0.45 mi. NE)

Location 131 = Cowans Ford Dam (0.64 mi. WNW)

Location 135 = Plant Marshall Intake Canal (11.9 mi. N) (Control)

### **A.4 MILK**

Biweekly grab samples were collected at one location. A gamma and low-level Iodine-131 analysis was performed on each sample. The biweekly grab samples were collected from the location listed below.

Location 141 = Lynch Dairy - Cows (14.8 mi. WNW) (Control)

### **A.5 BROADLEAF VEGETATION**

Monthly samples were collected as available and a gamma analysis was performed on each sample. The samples were collected from the locations listed below.

Location 102 = Amity Church Road (9.89 mi. WNW) (Control)

Location 120 = Site Boundary (0.46 mi. NNE)

Location 125 = Site Boundary (0.38 mi. SW)

Location 193 = Site Boundary (0.19 mi. N)

### **A.6 FOOD PRODUCTS**

Samples were collected monthly when available during the harvest season and a gamma analysis was performed on each. The samples were collected at the location listed below.

Location 104 = 5 mile radius Gardens (1.52 mi NNW)

### **A.7 FISH**

Semiannual samples were collected and a gamma analysis was performed on the edible portions of each sample. Boney fish (i.e. Sunfish) were prepared whole minus the head and tail portions. The samples were collected from the locations listed below.

Location 129 = Discharge Canal Entrance to Lake Norman (0.51 mi. ENE)

Location 137 = Pinnacle Access Area (12.0 mi. N) (Control)

#### **A.8 SHORELINE SEDIMENT**

Semiannual samples were collected and a gamma analysis was performed on each following the drying and removal of rocks and clams. The samples were collected from the locations listed below.

Location 129 = Discharge Canal Entrance to Lake Norman (0.51 mi. ENE)

Location 130 = Highway 73 Bridge Downstream (0.52 mi. SW)

Location 137 = Pinnacle Access Area (12.0 mi. N) (Control)

#### **A.9 DIRECT GAMMA RADIATION (TLD)**

Thermoluminescent dosimeters (TLD) were collected quarterly at forty-one locations. A gamma exposure rate was determined for each TLD. TLD locations are listed in Table 2.1-B. The TLDs were placed as indicated below.

- \* An inner ring of 14 TLDs at the site boundary, one in each available meteorological sector. The site boundary locations in the N and NNW sectors are over water; however, two special interest TLD's were placed in these sectors inside the site boundary in March, 1991.
- \* An outer ring of 16 TLDs, one in each meteorological sector in the 6 to 8 kilometer range.
- \* The remaining TLDs were placed in special interest areas such as population centers, residential areas, schools, and control locations.

#### **A.10 ANNUAL LAND USE CENSUS**

An annual Land Use Census was conducted to identify within a distance of 8 kilometers (5.0 miles) from the station, the nearest location from the site boundary in each of the sixteen meteorological sectors, the following:

- \* The Nearest Residence
- \* The Nearest Garden greater than 50 square meters or 500 square feet
- \* The Nearest Milk-giving Animal (cow, goat, etc.)

The census was conducted during the growing season on 6/8 - 6/9/2016. Results are shown in Table 3.10. No changes were made to the sampling procedures during 2016 as a result of the 2016 census.



In the environmental program, the air deposition parameters (D/Q) are used to determine air, broadleaf vegetation and milk sampling locations. McGuire's sectors with the three highest values did not change in 2016.

## **V. GLOBAL POSITIONING SYSTEM (GPS) ANALYSIS**

The McGuire site centerline used for GPS measurements was referenced from the McGuire Nuclear Station Updated Final Safety Analysis Report (UFSAR), section 2.1.1, Site Location. Waypoint coordinates used for MNS GPS measurements were latitude 35°-25'-59"N and longitude 80°-56'-55"W. Maps and tables were generated using North American Datum (NAD) 27. Data normally reflect accuracy to within 2 to 5 meters from point of measurement. GPS field measurements were taken as close as possible to the item of interest. Distances for the locations are displayed using three significant figures.

**APPENDIX B**

**RADIOLOGICAL  
ENVIRONMENTAL MONITORING  
PROGRAM**

**SUMMARY OF RESULTS**

**MCGUIRE NUCLEAR STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

McGuire Nuclear Station  
Mecklenburg County, North Carolina

Docket Numbers 50-369, 370  
Calendar Year 2016

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) <sup>(1)</sup>	All Indicator Locations <sup>(2) (3)</sup> Mean Range	Location w/Highest Annual Mean		Control Locations Mean Range <sup>(2) (3)</sup>	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean Range <sup>(2) (3)</sup>		
Air Particulate (pCi/m <sup>3</sup> )	Gross Beta 364	See Table 2.2-C	2.15E-2 (312/312) 7.29E-3 – 5.18E-2	195 (0.19 mi N)	2.26E-2 (52/52) 8.82E-3 – 5.18E-2	102 (9.89 mi WNW) 2.19E-2 (52/52) 7.69E-3 – 4.22E-2	0
	Gamma 28	See Table 2.2-C	All less than LLD	----	----	All less than LLD	0
Air Radioiodine (pCi/m <sup>3</sup> )	Gamma 364	See Table 2.2-C	All less than LLD	----	----	All less than LLD	0
Drinking Water (pCi/l)	Gross Beta 65	4	2.22 (45/52) 0.75 – 6.44	119 (7.40 mi SSW)	2.85 (11/13) 1.87 – 6.44	136 (12.7 mi NNE) 1.80 (11/13) 1.27 – 2.45	0
	Gamma 65	See Table 2.2-C	All less than LLD	----	----	All less than LLD	0
	Tritium 20	2000	459 (12/16) 314 - 664	101 (3.31 mi E)	569 (4/4) 499 – 664	All less than LLD	0
Surface Water (pCi/l)	Gamma 39	See Table 2.2-C	All less than LLD	----	----	All less than LLD	0
	Tritium 12	2000	495 (8/8) 249 - 912	128 (0.45 mi NE)	663 (4/4) 433 - 912	All less than LLD	0
Milk (pCi/l)	Gamma 26	See Table 2.2-C	No Indicator Location	----	----	All less than LLD	0
	I-131 26	See Table 2.2-C	No Indicator Location	----	----	All less than LLD	0

**MCGUIRE NUCLEAR STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

McGuire Nuclear Station  
Mecklenburg County, North Carolina

Docket Numbers 50-369, 370  
Calendar Year 2016

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) <sup>(1)</sup>	All Indicator Locations <sup>(2) (3)</sup> Mean Range	Location w/Highest Annual Mean		Control Locations Mean Range <sup>(2) (3)</sup>	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean Range <sup>(2) (3)</sup>		
Broadleaf Vegetation (pCi/kg, wet)	Gamma 48 Cs-137	See Table 2.2-C	12.2 (1/36) 12.2 – 12.2	120 (0.46 mi NNE)	12.2 (1/12) 12.2 – 12.2	All less than LLD	0
Food Products (pCi/kg, wet)	Gamma 7	See Table 2.2-C	All less than LLD	-----	-----	No Control Location	0
Fish (pCi/kg, wet)	Gamma 12 Cs-137	See Table 2.2-C	11.4 (1/6) 11.4 – 11.4	129 (0.51 mi ENE)	11.4 (1/6) 11.4 – 11.4	All less than LLD	0
Sediments--Shoreline (pCi/kg, dry)	Gamma 6 Cs-137	See Table 2.2-C	78.4 (2/4) 61.6 – 95.2	130 (0.52 mi SW)	78.4 (2/2) 61.6 – 95.2	All less than LLD	0
TLD (mR per quarter) <sup>(4)</sup>	TLD Readout 163 <sup>(5)</sup>	-----	16.4 (159/159) 9.79 – 27.8	180 (12.7 mi NNE)	26.9 (3/3) 25.3 – 27.8	175 (15.5 mi WNW) 23.0 (4/4) 21.3 – 25.1	0

## Footnotes to Appendix B

1. The Lower Limit of Detection (LLD) is the smallest concentration of radioactive material in a sample that will yield a net count above system background which will be detected with 95 percent probability and with only 5 percent probability of falsely concluding that a blank observation represents a "real" signal. Due to counting statistics and varying volumes, occasionally lower LLDs are achieved. Refer to Analytical Procedures Section/Gamma Spectrometry for an explanation of how LLD values were derived.
2. Mean and range are based on detectable measurements only.
3. The fractions of all samples with detectable activities at specific locations are indicated in parentheses.
4. TLD exposure is reported in milliroentgen (mR) per standard quarter (91 days). TLD data indicated in section 3.9 (Direct Gamma Radiation) are reported in mrem /yr ( $n * 0.95$ ).
5. Missing samples are discussed in Appendices C and D

**APPENDIX C**

**SAMPLING DEVIATIONS  
&  
UNAVAILABLE ANALYSES**

# APPENDIX C

## MCGUIRE NUCLEAR STATION SAMPLING DEVIATIONS & UNAVAILABLE ANALYSES

DEVIATION & UNAVAILABLE REASON CODES			
BF	Blown Fuse	PM	Preventive Maintenance
CN	Construction	PO	Power Outage
FZ	Sample Frozen	PS	Pump out of service / Undergoing repair
IV	Insufficient Volume	SL	Sample Loss/Lost due to Lab Accident
IW	Inclement Weather	SM	Motor / Rotor Seized
LC	Line Clog to Sampler	SU	Seasonally Unavailable
OT	Other	TF	Torn Filter
PI	Power Interrupt	VN	Vandalism

### C.1 SAMPLING DEVIATIONS

#### Air Particulate and Air Radioiodine

REMP weekly air samples (Air Particulate (AP) or Air Radioiodine (AR)) that experience any downtime during a surveillance period are reported as a Deviation and classified as a “Sampling Deviation.” However, the sample is counted and the data reported, whereas a Deviation with no available sample is classified as an “Unavailable Analyses” and does not have any data reported. The air samplers operated for a total of 99.8% availability in 2016.

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
120	3/28 - 4/4/2016	PI	3.73 hours downtime due to severe thunderstorm.	NCR # 02017576
121	3/28 - 4/4/2016	PI	3.73 hours downtime due to severe thunderstorm.	NCR # 02017578
195	3/28 - 4/4/2016	PI	3.72 hours downtime due to severe thunderstorm.	NCR # 02017583
103	4/4 - 4/11/2016	PI	2.17 hours downtime due to severe thunderstorm.	NCR # 02019790
120	4/18 – 4/25/2016	PI	2.05 hours downtime due to loss of retail power in area.	NCR # 02022701 NCR # 02023718
121	4/18 - 4/25/2016	PI	2.05 hours downtime due to loss of retail power in area.	NCR # 02022701 NCR # 02023719
195	4/18 – 4/25/2016	PI	2.05 hours downtime due to loss of retail power in area.	NCR # 02022701 NCR # 02023720
195	5/2 – 5/9/2016	BF	89.7 hours downtime due to blown fuse.	NCR # 02027577

#### Drinking Water and Surface Water

REMP monthly drinking water samples (Drinking Water (DW)) or surface water samples (Surface Water (SW)) that experience any downtime during a surveillance period are reported as a Deviation and classified as a “Sampling Deviation.” However, the sample is counted and the data reported, whereas a Deviation with no available sample is classified as an “Unavailable Analyses” and does not have any data reported. The drinking and surface water samplers operated for a total of 100% availability in 2016. There were no drinking water or surface water sampling deviations or unavailable drinking water or surface water samples during 2016.

## C.2 UNAVAILABLE ANALYSES

### Food Products / Crops

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
104	1/5/2016	SU	Seasonally unavailable.	NCR # 01988673
104	2/1/2016	SU	Seasonally unavailable.	NCR # 01996604
104	3/7/2016	SU	Seasonally unavailable.	NCR # 02007958
104	4/4/2016	SU	Seasonally unavailable.	NCR # 02017566
104	5/5/2016	SU	Seasonally unavailable.	NCR # 02025223

### TLD

Location	Scheduled Collection Dates	Code	Description & Action to Prevent Recurrence	Corrective Action
180	6/15 – 9/14/2016	VN	TLD missing at time of collection.	NCR # 02062791



# **APPENDIX D**

## **ANALYTICAL DEVIATIONS**

No Analytical deviations were incurred for the  
2016 Radiological Environmental Monitoring Program

**APPENDIX E**

**RADIOLOGICAL  
ENVIRONMENTAL MONITORING  
PROGRAM RESULTS**

**2016**

This appendix includes sample analysis report summaries and supportive data generated from each sample medium for 2016.

# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
398694	12/28/2015 - 1/5/2016	Beta	1.82E-02	2.43E-03	2.42E-03
398958	1/5/2016 - 1/11/2016	Beta	7.69E-03	2.43E-03	3.37E-03
399272	1/11/2016 - 1/18/2016	Beta	2.11E-02	2.84E-03	2.93E-03
400014	1/18/2016 - 1/25/2016	Beta	1.69E-02	2.69E-03	2.99E-03
400375	1/25/2016 - 2/1/2016	Beta	2.19E-02	2.76E-03	2.50E-03
401006	2/1/2016 - 2/8/2016	Beta	1.91E-02	2.78E-03	2.97E-03
401367	2/8/2016 - 2/15/2016	Beta	2.03E-02	2.76E-03	2.75E-03
401813	2/15/2016 - 2/22/2016	Beta	1.43E-02	2.37E-03	2.52E-03
402333	2/22/2016 - 2/29/2016	Beta	1.25E-02	2.35E-03	2.70E-03
403055	2/29/2016 - 3/7/2016	Beta	1.44E-02	2.43E-03	2.68E-03
404543	3/7/2016 - 3/14/2016	Beta	1.56E-02	2.59E-03	2.92E-03
405416	3/14/2016 - 3/21/2016	Beta	1.54E-02	2.57E-03	2.88E-03
406046	3/21/2016 - 3/28/2016	Beta	1.92E-02	2.68E-03	2.73E-03
406397	12/28/2015 - 3/28/2016	Cs-134	<7.63E-04	0.00E+00	7.63E-04
		Cs-137	<4.09E-04	0.00E+00	4.09E-04
		Be-7	1.51E-01	2.29E-02	9.77E-03
		K-40	<1.23E-02	0.00E+00	1.23E-02
406390	3/28/2016 - 4/4/2016	Beta	1.65E-02	2.48E-03	2.48E-03
407574	4/4/2016 - 4/11/2016	Beta	1.64E-02	2.56E-03	2.73E-03
408141	4/11/2016 - 4/18/2016	Beta	1.63E-02	2.55E-03	2.74E-03
409462	4/18/2016 - 4/25/2016	Beta	2.18E-02	2.83E-03	2.76E-03
409792	4/25/2016 - 5/2/2016	Beta	1.46E-02	2.48E-03	2.73E-03
410963	5/2/2016 - 5/9/2016	Beta	7.78E-03	2.11E-03	2.81E-03
411441	5/9/2016 - 5/16/2016	Beta	2.24E-02	2.85E-03	2.77E-03
411773	5/16/2016 - 5/23/2016	Beta	1.74E-02	2.51E-03	2.41E-03
412231	5/23/2016 - 5/31/2016	Beta	2.30E-02	2.69E-03	2.52E-03
412751	5/31/2016 - 6/6/2016	Beta	1.76E-02	2.95E-03	3.32E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
413362	6/6/2016 - 6/13/2016	Beta	2.36E-02	2.93E-03	2.84E-03
413902	6/13/2016 - 6/20/2016	Beta	1.93E-02	2.73E-03	2.82E-03
415038	6/20/2016 - 6/27/2016	Beta	2.41E-02	2.90E-03	2.65E-03
415435	3/28/2016 - 6/27/2016	Cs-134	<6.77E-04	0.00E+00	6.77E-04
		Cs-137	<6.62E-04	0.00E+00	6.62E-04
		Be-7	2.00E-01	2.79E-02	1.37E-02
		K-40	<1.18E-02	0.00E+00	1.18E-02
415428	6/27/2016 - 7/5/2016	Beta	2.40E-02	2.70E-03	2.46E-03
416414	7/5/2016 - 7/11/2016	Beta	1.65E-02	3.06E-03	3.71E-03
417031	7/11/2016 - 7/18/2016	Beta	2.12E-02	2.85E-03	2.92E-03
417420	7/18/2016 - 7/25/2016	Beta	3.01E-02	3.15E-03	2.58E-03
417815	7/25/2016 - 8/1/2016	Beta	2.46E-02	2.98E-03	2.83E-03
418287	8/1/2016 - 8/8/2016	Beta	2.32E-02	2.94E-03	2.91E-03
419009	8/8/2016 - 8/15/2016	Beta	1.47E-02	2.48E-03	2.74E-03
419505	8/15/2016 - 8/22/2016	Beta	1.02E-02	2.37E-03	3.06E-03
420036	8/22/2016 - 8/29/2016	Beta	2.81E-02	3.09E-03	2.69E-03
420583	8/29/2016 - 9/6/2016	Beta	2.48E-02	2.63E-03	2.13E-03
421443	9/6/2016 - 9/12/2016	Beta	4.22E-02	4.03E-03	3.36E-03
422582	9/12/2016 - 9/19/2016	Beta	2.88E-02	3.18E-03	2.88E-03
423327	9/19/2016 - 9/26/2016	Beta	2.55E-02	3.06E-03	2.96E-03
424462	6/27/2016 - 9/26/2016	Cs-134	<5.77E-04	0.00E+00	5.77E-04
		Cs-137	<4.56E-04	0.00E+00	4.56E-04
		Be-7	1.55E-01	2.31E-02	9.85E-03
		K-40	6.49E-03	6.60E-03	1.02E-02
424455	9/26/2016 - 10/3/2016	Beta	3.02E-02	3.20E-03	2.77E-03
425458	10/3/2016 - 10/10/2016	Beta	1.58E-02	2.70E-03	3.17E-03
426003	10/10/2016 - 10/17/2016	Beta	2.71E-02	3.04E-03	2.70E-03
426374	10/17/2016 - 10/24/2016	Beta	2.35E-02	2.96E-03	2.90E-03
427059	10/24/2016 - 10/31/2016	Beta	3.77E-02	3.47E-03	2.72E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427726	10/31/2016 - 11/7/2016	Beta	3.62E-02	3.52E-03	3.11E-03
428219	11/7/2016 - 11/14/2016	Beta	2.30E-02	2.85E-03	2.67E-03
428902	11/14/2016 - 11/21/2016	Beta	2.91E-02	3.74E-03	3.51E-03
429405	11/21/2016 - 11/28/2016	Beta	2.85E-02	3.22E-03	3.04E-03
429964	11/28/2016 - 12/5/2016	Beta	2.22E-02	2.89E-03	2.91E-03
430583	12/5/2016 - 12/12/2016	Beta	2.31E-02	2.92E-03	2.80E-03
431072	12/12/2016 - 12/19/2016	Beta	3.47E-02	3.68E-03	3.21E-03
431473	12/19/2016 - 12/27/2016	Beta	4.07E-02	3.67E-03	2.85E-03
431818	9/26/2016 - 12/27/2016	Cs-134	<6.25E-04	0.00E+00	6.25E-04
		Cs-137	<5.28E-04	0.00E+00	5.28E-04
		Be-7	1.52E-01	2.34E-02	1.10E-02
		K-40	<1.36E-02	0.00E+00	1.36E-02

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398695	12/28/2015 - 1/5/2016	Beta	1.48E-02	2.25E-03	2.40E-03
398959	1/5/2016 - 1/11/2016	Beta	7.29E-03	2.42E-03	3.41E-03
399273	1/11/2016 - 1/18/2016	Beta	1.81E-02	2.70E-03	2.92E-03
400015	1/18/2016 - 1/25/2016	Beta	1.41E-02	2.54E-03	2.99E-03
400376	1/25/2016 - 2/1/2016	Beta	2.30E-02	2.80E-03	2.48E-03
401007	2/1/2016 - 2/8/2016	Beta	2.06E-02	2.87E-03	3.01E-03
401368	2/8/2016 - 2/15/2016	Beta	1.79E-02	2.65E-03	2.75E-03
401814	2/15/2016 - 2/22/2016	Beta	1.50E-02	2.41E-03	2.52E-03
402334	2/22/2016 - 2/29/2016	Beta	1.20E-02	2.30E-03	2.67E-03
403056	2/29/2016 - 3/7/2016	Beta	1.66E-02	2.56E-03	2.71E-03
404544	3/7/2016 - 3/14/2016	Beta	1.80E-02	2.71E-03	2.93E-03
405417	3/14/2016 - 3/21/2016	Beta	1.94E-02	2.76E-03	2.88E-03
406047	3/21/2016 - 3/28/2016	Beta	1.73E-02	2.57E-03	2.70E-03
406398	12/28/2015 - 3/28/2016	Cs-134	<5.61E-04	0.00E+00	5.61E-04
		Cs-137	<4.44E-04	0.00E+00	4.44E-04
		Be-7	1.62E-01	2.54E-02	1.27E-02
		K-40	<1.53E-02	0.00E+00	1.53E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
406391	3/28/2016 - 4/4/2016	Beta	1.82E-02	2.59E-03	2.50E-03
407575	4/4/2016 - 4/11/2016	Beta	1.63E-02	2.58E-03	2.76E-03
408142	4/11/2016 - 4/18/2016	Beta	2.04E-02	2.76E-03	2.74E-03
409463	4/18/2016 - 4/25/2016	Beta	2.60E-02	2.98E-03	2.73E-03
409793	4/25/2016 - 5/2/2016	Beta	2.15E-02	2.83E-03	2.75E-03
410964	5/2/2016 - 5/9/2016	Beta	1.27E-02	2.40E-03	2.81E-03
411442	5/9/2016 - 5/16/2016	Beta	2.35E-02	2.90E-03	2.77E-03
411774	5/16/2016 - 5/23/2016	Beta	1.86E-02	2.55E-03	2.39E-03
412232	5/23/2016 - 5/31/2016	Beta	2.25E-02	2.68E-03	2.54E-03
412752	5/31/2016 - 6/6/2016	Beta	1.92E-02	3.03E-03	3.31E-03
413363	6/6/2016 - 6/13/2016	Beta	2.32E-02	2.92E-03	2.85E-03
413903	6/13/2016 - 6/20/2016	Beta	1.89E-02	2.70E-03	2.79E-03
415039	6/20/2016 - 6/27/2016	Beta	1.98E-02	2.72E-03	2.69E-03
415436	3/28/2016 - 6/27/2016	Cs-134	<6.55E-04	0.00E+00	6.55E-04
		Cs-137	<5.19E-04	0.00E+00	5.19E-04
		Be-7	2.11E-01	2.99E-02	8.16E-03
		K-40	<1.03E-02	0.00E+00	1.03E-02
415429	6/27/2016 - 7/5/2016	Beta	2.59E-02	2.78E-03	2.46E-03
416415	7/5/2016 - 7/11/2016	Beta	1.83E-02	3.15E-03	3.71E-03
417032	7/11/2016 - 7/18/2016	Beta	2.02E-02	2.79E-03	2.89E-03
417421	7/18/2016 - 7/25/2016	Beta	2.93E-02	3.13E-03	2.61E-03
417816	7/25/2016 - 8/1/2016	Beta	2.26E-02	2.90E-03	2.83E-03
418288	8/1/2016 - 8/8/2016	Beta	2.19E-02	2.88E-03	2.91E-03
419010	8/8/2016 - 8/15/2016	Beta	1.04E-02	2.23E-03	2.71E-03
419506	8/15/2016 - 8/22/2016	Beta	1.26E-02	2.51E-03	3.10E-03
420037	8/22/2016 - 8/29/2016	Beta	2.67E-02	3.04E-03	2.69E-03
420584	8/29/2016 - 9/6/2016	Beta	2.43E-02	2.61E-03	2.13E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421444	9/6/2016 - 9/12/2016	Beta	3.97E-02	3.91E-03	3.33E-03
422583	9/12/2016 - 9/19/2016	Beta	2.54E-02	3.05E-03	2.91E-03
423328	9/19/2016 - 9/26/2016	Beta	2.16E-02	2.89E-03	2.96E-03
424463	6/27/2016 - 9/26/2016	Cs-134	<5.98E-04	0.00E+00	5.98E-04
		Cs-137	<4.74E-04	0.00E+00	4.74E-04
		Be-7	1.64E-01	2.48E-02	7.94E-03
		K-40	6.85E-03	4.37E-03	1.86E-03
424456	9/26/2016 - 10/3/2016	Beta	2.31E-02	2.89E-03	2.76E-03
425459	10/3/2016 - 10/10/2016	Beta	1.74E-02	2.75E-03	3.13E-03
426004	10/10/2016 - 10/17/2016	Beta	2.85E-02	3.13E-03	2.74E-03
426375	10/17/2016 - 10/24/2016	Beta	2.08E-02	2.84E-03	2.90E-03
427060	10/24/2016 - 10/31/2016	Beta	3.18E-02	3.24E-03	2.73E-03
427727	10/31/2016 - 11/7/2016	Beta	2.68E-02	3.11E-03	3.04E-03
428220	11/7/2016 - 11/14/2016	Beta	1.99E-02	2.75E-03	2.74E-03
428903	11/14/2016 - 11/21/2016	Beta	4.01E-02	3.55E-03	2.63E-03
429406	11/21/2016 - 11/28/2016	Beta	2.54E-02	3.09E-03	3.04E-03
429965	11/28/2016 - 12/5/2016	Beta	1.62E-02	2.59E-03	2.88E-03
430584	12/5/2016 - 12/12/2016	Beta	1.71E-02	2.66E-03	2.84E-03
431073	12/12/2016 - 12/19/2016	Beta	3.28E-02	3.92E-03	3.67E-03
431474	12/19/2016 - 12/27/2016	Beta	2.77E-02	3.44E-03	3.26E-03
431819	9/26/2016 - 12/27/2016	Cs-134	<5.75E-04	0.00E+00	5.75E-04
		Cs-137	<6.28E-04	0.00E+00	6.28E-04
		Be-7	1.55E-01	2.44E-02	1.32E-02
		K-40	<1.12E-02	0.00E+00	1.12E-02

## Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398696	12/28/2015 - 1/5/2016	Beta	1.69E-02	2.31E-03	2.34E-03
398960	1/5/2016 - 1/11/2016	Beta	9.31E-03	2.59E-03	3.48E-03
399274	1/11/2016 - 1/18/2016	Beta	2.38E-02	2.93E-03	2.88E-03
400016	1/18/2016 - 1/25/2016	Beta	1.51E-02	2.63E-03	3.05E-03
400377	1/25/2016 - 2/1/2016	Beta	2.00E-02	2.62E-03	2.43E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
401008	2/1/2016 - 2/8/2016	Beta	2.05E-02	2.91E-03	3.08E-03
401369	2/8/2016 - 2/15/2016	Beta	1.66E-02	2.59E-03	2.76E-03
401815	2/15/2016 - 2/22/2016	Beta	1.48E-02	2.40E-03	2.52E-03
402335	2/22/2016 - 2/29/2016	Beta	1.57E-02	2.47E-03	2.62E-03
403057	2/29/2016 - 3/7/2016	Beta	1.65E-02	2.59E-03	2.76E-03
404545	3/7/2016 - 3/14/2016	Beta	1.65E-02	2.64E-03	2.94E-03
405418	3/14/2016 - 3/21/2016	Beta	1.92E-02	2.75E-03	2.88E-03
406048	3/21/2016 - 3/28/2016	Beta	1.95E-02	2.65E-03	2.64E-03
406399	12/28/2015 - 3/28/2016	Cs-134	<3.45E-04	0.00E+00	3.45E-04
		Cs-137	<2.72E-04	0.00E+00	2.72E-04
		Be-7	1.45E-01	2.23E-02	1.13E-02
		K-40	<1.16E-02	0.00E+00	1.16E-02
406392	3/28/2016 - 4/4/2016	Beta	1.74E-02	2.59E-03	2.57E-03
407576	4/4/2016 - 4/11/2016	Beta	1.74E-02	2.64E-03	2.77E-03
408143	4/11/2016 - 4/18/2016	Beta	2.15E-02	2.81E-03	2.74E-03
409464	4/18/2016 - 4/25/2016	Beta	2.60E-02	2.92E-03	2.63E-03
409794	4/25/2016 - 5/2/2016	Beta	2.24E-02	2.91E-03	2.82E-03
410965	5/2/2016 - 5/9/2016	Beta	1.58E-02	2.56E-03	2.81E-03
411443	5/9/2016 - 5/16/2016	Beta	2.00E-02	2.75E-03	2.78E-03
411775	5/16/2016 - 5/23/2016	Beta	1.57E-02	2.37E-03	2.34E-03
412233	5/23/2016 - 5/31/2016	Beta	2.35E-02	2.75E-03	2.58E-03
412753	5/31/2016 - 6/6/2016	Beta	1.71E-02	2.92E-03	3.31E-03
413364	6/6/2016 - 6/13/2016	Beta	2.30E-02	2.91E-03	2.85E-03
413904	6/13/2016 - 6/20/2016	Beta	1.79E-02	2.61E-03	2.73E-03
415040	6/20/2016 - 6/27/2016	Beta	2.76E-02	3.12E-03	2.75E-03
415437	3/28/2016 - 6/27/2016	Cs-134	<7.44E-04	0.00E+00	7.44E-04
		Cs-137	<5.48E-04	0.00E+00	5.48E-04
		Be-7	1.93E-01	2.90E-02	1.11E-02
		K-40	<1.60E-02	0.00E+00	1.60E-02





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
415430	6/27/2016 - 7/5/2016	Beta	2.37E-02	2.68E-03	2.46E-03
416416	7/5/2016 - 7/11/2016	Beta	1.52E-02	2.99E-03	3.72E-03
417033	7/11/2016 - 7/18/2016	Beta	1.61E-02	2.56E-03	2.82E-03
417422	7/18/2016 - 7/25/2016	Beta	2.81E-02	3.13E-03	2.67E-03
417817	7/25/2016 - 8/1/2016	Beta	2.06E-02	2.80E-03	2.82E-03
418289	8/1/2016 - 8/8/2016	Beta	2.19E-02	2.88E-03	2.92E-03
419011	8/8/2016 - 8/15/2016	Beta	1.41E-02	2.39E-03	2.65E-03
419507	8/15/2016 - 8/22/2016	Beta	1.16E-02	2.51E-03	3.17E-03
420038	8/22/2016 - 8/29/2016	Beta	2.66E-02	3.03E-03	2.69E-03
420585	8/29/2016 - 9/6/2016	Beta	2.49E-02	2.63E-03	2.12E-03
421445	9/6/2016 - 9/12/2016	Beta	3.94E-02	3.84E-03	3.24E-03
422584	9/12/2016 - 9/19/2016	Beta	2.31E-02	3.01E-03	3.00E-03
423329	9/19/2016 - 9/26/2016	Beta	2.06E-02	2.85E-03	2.97E-03
424464	6/27/2016 - 9/26/2016	Cs-134	<5.77E-04	0.00E+00	5.77E-04
		Cs-137	<4.56E-04	0.00E+00	4.56E-04
		Be-7	1.67E-01	2.44E-02	1.03E-02
		K-40	<1.18E-02	0.00E+00	1.18E-02
424457	9/26/2016 - 10/3/2016	Beta	2.77E-02	3.06E-03	2.72E-03
425460	10/3/2016 - 10/10/2016	Beta	1.55E-02	2.65E-03	3.11E-03
426005	10/10/2016 - 10/17/2016	Beta	2.50E-02	3.01E-03	2.79E-03
426376	10/17/2016 - 10/24/2016	Beta	2.04E-02	2.82E-03	2.90E-03
427061	10/24/2016 - 10/31/2016	Beta	3.44E-02	3.35E-03	2.73E-03
427728	10/31/2016 - 11/7/2016	Beta	3.49E-02	3.45E-03	3.09E-03
428221	11/7/2016 - 11/14/2016	Beta	2.22E-02	2.83E-03	2.69E-03
428904	11/14/2016 - 11/21/2016	Beta	4.62E-02	3.83E-03	2.70E-03
429407	11/21/2016 - 11/28/2016	Beta	2.46E-02	3.06E-03	3.04E-03
429966	11/28/2016 - 12/5/2016	Beta	1.96E-02	2.71E-03	2.83E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430585	12/5/2016 - 12/12/2016	Beta	1.89E-02	2.79E-03	2.90E-03
431074	12/12/2016 - 12/19/2016	Beta	3.06E-02	3.51E-03	3.20E-03
431475	12/19/2016 - 12/27/2016	Beta	3.55E-02	3.47E-03	2.86E-03
431820	9/26/2016 - 12/27/2016	Cs-134	<8.24E-04	0.00E+00	8.24E-04
		Cs-137	<6.14E-04	0.00E+00	6.14E-04
		Be-7	1.50E-01	2.47E-02	1.40E-02
		K-40	<1.52E-02	0.00E+00	1.52E-02

## Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398697	12/28/2015 - 1/5/2016	Beta	1.53E-02	2.24E-03	2.35E-03
398961	1/5/2016 - 1/11/2016	Beta	1.07E-02	2.66E-03	3.46E-03
399275	1/11/2016 - 1/18/2016	Beta	1.86E-02	2.71E-03	2.90E-03
400017	1/18/2016 - 1/25/2016	Beta	1.33E-02	2.53E-03	3.04E-03
400378	1/25/2016 - 2/1/2016	Beta	2.17E-02	2.71E-03	2.44E-03
401009	2/1/2016 - 2/8/2016	Beta	2.00E-02	2.88E-03	3.07E-03
401370	2/8/2016 - 2/15/2016	Beta	2.08E-02	2.79E-03	2.76E-03
401816	2/15/2016 - 2/22/2016	Beta	1.49E-02	2.40E-03	2.52E-03
402336	2/22/2016 - 2/29/2016	Beta	1.37E-02	2.36E-03	2.62E-03
403058	2/29/2016 - 3/7/2016	Beta	1.31E-02	2.40E-03	2.76E-03
404546	3/7/2016 - 3/14/2016	Beta	1.69E-02	2.66E-03	2.94E-03
405419	3/14/2016 - 3/21/2016	Beta	1.75E-02	2.67E-03	2.88E-03
406049	3/21/2016 - 3/28/2016	Beta	1.72E-02	2.54E-03	2.65E-03
406400	12/28/2015 - 3/28/2016	Cs-134	<6.53E-04	0.00E+00	6.53E-04
		Cs-137	<1.07E-04	0.00E+00	1.07E-04
		Be-7	1.41E-01	2.33E-02	1.34E-02
		K-40	<1.33E-02	0.00E+00	1.33E-02
406393	3/28/2016 - 4/4/2016	Beta	1.53E-02	2.47E-03	2.56E-03
407577	4/4/2016 - 4/11/2016	Beta	1.46E-02	2.49E-03	2.77E-03
408144	4/11/2016 - 4/18/2016	Beta	1.81E-02	2.65E-03	2.74E-03
409465	4/18/2016 - 4/25/2016	Beta	2.31E-02	2.84E-03	2.70E-03
409795	4/25/2016 - 5/2/2016	Beta	1.93E-02	2.76E-03	2.81E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
410966	5/2/2016 - 5/9/2016	Beta	1.39E-02	2.46E-03	2.81E-03
411444	5/9/2016 - 5/16/2016	Beta	2.27E-02	2.87E-03	2.78E-03
411776	5/16/2016 - 5/23/2016	Beta	1.65E-02	2.42E-03	2.35E-03
412234	5/23/2016 - 5/31/2016	Beta	2.38E-02	2.76E-03	2.58E-03
412754	5/31/2016 - 6/6/2016	Beta	1.69E-02	2.91E-03	3.31E-03
413365	6/6/2016 - 6/13/2016	Beta	2.28E-02	2.90E-03	2.85E-03
413905	6/13/2016 - 6/20/2016	Beta	2.00E-02	2.71E-03	2.73E-03
415041	6/20/2016 - 6/27/2016	Beta	2.33E-02	2.92E-03	2.74E-03
415438	3/28/2016 - 6/27/2016	Cs-134	<6.68E-04	0.00E+00	6.68E-04
		Cs-137	<2.76E-04	0.00E+00	2.76E-04
		Be-7	1.99E-01	2.81E-02	1.26E-02
		K-40	1.28E-02	6.68E-03	6.83E-03
415431	6/27/2016 - 7/5/2016	Beta	2.77E-02	2.85E-03	2.46E-03
416417	7/5/2016 - 7/11/2016	Beta	1.54E-02	3.00E-03	3.71E-03
417034	7/11/2016 - 7/18/2016	Beta	1.86E-02	2.68E-03	2.83E-03
417423	7/18/2016 - 7/25/2016	Beta	2.67E-02	3.06E-03	2.67E-03
417818	7/25/2016 - 8/1/2016	Beta	2.34E-02	2.93E-03	2.83E-03
418290	8/1/2016 - 8/8/2016	Beta	1.84E-02	2.72E-03	2.91E-03
419012	8/8/2016 - 8/15/2016	Beta	1.17E-02	2.27E-03	2.66E-03
419508	8/15/2016 - 8/22/2016	Beta	8.94E-03	2.35E-03	3.16E-03
420039	8/22/2016 - 8/29/2016	Beta	2.78E-02	3.08E-03	2.69E-03
420586	8/29/2016 - 9/6/2016	Beta	2.71E-02	2.73E-03	2.12E-03
421446	9/6/2016 - 9/12/2016	Beta	4.06E-02	3.89E-03	3.25E-03
422585	9/12/2016 - 9/19/2016	Beta	2.43E-02	3.06E-03	2.99E-03
423330	9/19/2016 - 9/26/2016	Beta	2.32E-02	2.97E-03	2.96E-03
424465	6/27/2016 - 9/26/2016	Cs-134	<6.26E-04	0.00E+00	6.26E-04
		Cs-137	<4.95E-04	0.00E+00	4.95E-04
		Be-7	1.68E-01	2.53E-02	9.62E-03
		K-40	<1.69E-02	0.00E+00	1.69E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
424458	9/26/2016 - 10/3/2016	Beta	2.41E-02	2.92E-03	2.73E-03
425461	10/3/2016 - 10/10/2016	Beta	1.72E-02	2.73E-03	3.11E-03
426006	10/10/2016 - 10/17/2016	Beta	2.75E-02	3.11E-03	2.79E-03
426377	10/17/2016 - 10/24/2016	Beta	2.23E-02	2.91E-03	2.91E-03
427062	10/24/2016 - 10/31/2016	Beta	3.57E-02	3.40E-03	2.73E-03
427729	10/31/2016 - 11/7/2016	Beta	3.11E-02	3.31E-03	3.10E-03
428222	11/7/2016 - 11/14/2016	Beta	2.18E-02	2.81E-03	2.69E-03
428905	11/14/2016 - 11/21/2016	Beta	4.47E-02	3.77E-03	2.70E-03
429408	11/21/2016 - 11/28/2016	Beta	2.30E-02	2.99E-03	3.04E-03
429967	11/28/2016 - 12/5/2016	Beta	1.88E-02	2.68E-03	2.84E-03
430586	12/5/2016 - 12/12/2016	Beta	2.12E-02	2.89E-03	2.89E-03
431075	12/12/2016 - 12/19/2016	Beta	3.17E-02	3.56E-03	3.20E-03
431476	12/19/2016 - 12/27/2016	Beta	3.92E-02	3.61E-03	2.86E-03
431821	9/26/2016 - 12/27/2016	Cs-134	<5.30E-04	0.00E+00	5.30E-04
		Cs-137	<4.65E-04	0.00E+00	4.65E-04
		Be-7	1.45E-01	2.31E-02	6.71E-03
		K-40	1.02E-02	5.33E-03	1.84E-03

## Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398698	12/28/2015 - 1/5/2016	Beta	1.79E-02	2.36E-03	2.35E-03
398962	1/5/2016 - 1/11/2016	Beta	1.02E-02	2.63E-03	3.46E-03
399276	1/11/2016 - 1/18/2016	Beta	1.82E-02	2.70E-03	2.91E-03
400018	1/18/2016 - 1/25/2016	Beta	1.51E-02	2.61E-03	3.02E-03
400379	1/25/2016 - 2/1/2016	Beta	2.21E-02	2.72E-03	2.44E-03
401010	2/1/2016 - 2/8/2016	Beta	1.74E-02	2.76E-03	3.06E-03
401371	2/8/2016 - 2/15/2016	Beta	1.29E-02	2.39E-03	2.76E-03
401817	2/15/2016 - 2/22/2016	Beta	1.14E-02	2.25E-03	2.58E-03
402337	2/22/2016 - 2/29/2016	Beta	9.31E-03	2.12E-03	2.62E-03
403059	2/29/2016 - 3/7/2016	Beta	1.31E-02	2.55E-03	2.98E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
404547	3/7/2016 - 3/14/2016	Beta	1.61E-02	2.62E-03	2.93E-03
405420	3/14/2016 - 3/21/2016	Beta	1.71E-02	2.65E-03	2.88E-03
406050	3/21/2016 - 3/28/2016	Beta	1.82E-02	2.59E-03	2.65E-03
406401	12/28/2015 - 3/28/2016	Cs-134	<4.49E-04	0.00E+00	4.49E-04
		Cs-137	<5.74E-04	0.00E+00	5.74E-04
		Be-7	1.08E-01	1.89E-02	1.16E-02
		K-40	<1.49E-02	0.00E+00	1.49E-02
406394	3/28/2016 - 4/4/2016	Beta	2.00E-02	2.68E-03	2.51E-03
407578	4/4/2016 - 4/11/2016	Beta	1.56E-02	2.54E-03	2.76E-03
408145	4/11/2016 - 4/18/2016	Beta	1.91E-02	2.69E-03	2.74E-03
409466	4/18/2016 - 4/25/2016	Beta	2.23E-02	2.79E-03	2.67E-03
409796	4/25/2016 - 5/2/2016	Beta	1.97E-02	2.79E-03	2.81E-03
410967	5/2/2016 - 5/9/2016	Beta	1.44E-02	2.49E-03	2.81E-03
411445	5/9/2016 - 5/16/2016	Beta	2.07E-02	2.78E-03	2.78E-03
411777	5/16/2016 - 5/23/2016	Beta	1.72E-02	2.45E-03	2.35E-03
412235	5/23/2016 - 5/31/2016	Beta	2.21E-02	2.69E-03	2.58E-03
412755	5/31/2016 - 6/6/2016	Beta	1.57E-02	2.85E-03	3.31E-03
413366	6/6/2016 - 6/13/2016	Beta	2.09E-02	2.82E-03	2.85E-03
413906	6/13/2016 - 6/20/2016	Beta	1.75E-02	2.59E-03	2.73E-03
415042	6/20/2016 - 6/27/2016	Beta	2.55E-02	3.02E-03	2.74E-03
415439	3/28/2016 - 6/27/2016	Cs-134	<6.85E-04	0.00E+00	6.85E-04
		Cs-137	<4.97E-04	0.00E+00	4.97E-04
		Be-7	1.97E-01	2.86E-02	1.23E-02
		K-40	9.28E-03	7.48E-03	1.08E-02
415432	6/27/2016 - 7/5/2016	Beta	2.30E-02	2.66E-03	2.46E-03
416418	7/5/2016 - 7/11/2016	Beta	1.37E-02	2.92E-03	3.71E-03
417035	7/11/2016 - 7/18/2016	Beta	1.92E-02	2.70E-03	2.83E-03
417424	7/18/2016 - 7/25/2016	Beta	2.72E-02	3.08E-03	2.67E-03
417819	7/25/2016 - 8/1/2016	Beta	2.22E-02	2.88E-03	2.83E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
418291	8/1/2016 - 8/8/2016	Beta	2.04E-02	2.81E-03	2.91E-03
419013	8/8/2016 - 8/15/2016	Beta	1.44E-02	2.42E-03	2.66E-03
419509	8/15/2016 - 8/22/2016	Beta	1.07E-02	2.45E-03	3.16E-03
420040	8/22/2016 - 8/29/2016	Beta	2.52E-02	2.97E-03	2.69E-03
420587	8/29/2016 - 9/6/2016	Beta	2.39E-02	2.59E-03	2.13E-03
421447	9/6/2016 - 9/12/2016	Beta	3.39E-02	3.62E-03	3.24E-03
422586	9/12/2016 - 9/19/2016	Beta	2.73E-02	3.19E-03	2.98E-03
423331	9/19/2016 - 9/26/2016	Beta	2.14E-02	2.88E-03	2.96E-03
424466	6/27/2016 - 9/26/2016	Cs-134	<5.36E-04	0.00E+00	5.36E-04
		Cs-137	<4.25E-04	0.00E+00	4.25E-04
		Be-7	1.36E-01	2.23E-02	1.16E-02
		K-40	<1.19E-02	0.00E+00	1.19E-02
424459	9/26/2016 - 10/3/2016	Beta	2.51E-02	2.97E-03	2.74E-03
425462	10/3/2016 - 10/10/2016	Beta	1.82E-02	2.77E-03	3.10E-03
426007	10/10/2016 - 10/17/2016	Beta	2.57E-02	3.04E-03	2.79E-03
426378	10/17/2016 - 10/24/2016	Beta	1.88E-02	2.75E-03	2.91E-03
427063	10/24/2016 - 10/31/2016	Beta	3.16E-02	3.24E-03	2.73E-03
427730	10/31/2016 - 11/7/2016	Beta	3.20E-02	3.35E-03	3.10E-03
428223	11/7/2016 - 11/14/2016	Beta	2.30E-02	2.86E-03	2.68E-03
428906	11/14/2016 - 11/21/2016	Beta	3.76E-02	4.61E-03	4.21E-03
429409	11/21/2016 - 11/28/2016	Beta	2.70E-02	3.16E-03	3.04E-03
429968	11/28/2016 - 12/5/2016	Beta	2.13E-02	2.80E-03	2.84E-03
430587	12/5/2016 - 12/12/2016	Beta	1.92E-02	2.79E-03	2.89E-03
431076	12/12/2016 - 12/19/2016	Beta	3.54E-02	3.70E-03	3.20E-03
431477	12/19/2016 - 12/27/2016	Beta	3.92E-02	3.61E-03	2.86E-03
431822	9/26/2016 - 12/27/2016	Cs-134	<5.00E-04	0.00E+00	5.00E-04
		Cs-137	<1.15E-04	0.00E+00	1.15E-04
		Be-7	1.41E-01	2.45E-02	1.36E-02
		K-40	1.41E-02	6.60E-03	2.01E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
398699	12/28/2015 - 1/5/2016	Beta	1.56E-02	2.29E-03	2.40E-03
398963	1/5/2016 - 1/11/2016	Beta	8.71E-03	2.51E-03	3.40E-03
399277	1/11/2016 - 1/18/2016	Beta	1.82E-02	2.70E-03	2.92E-03
400019	1/18/2016 - 1/25/2016	Beta	1.41E-02	2.55E-03	2.99E-03
400380	1/25/2016 - 2/1/2016	Beta	1.93E-02	2.62E-03	2.48E-03
401011	2/1/2016 - 2/8/2016	Beta	1.81E-02	2.76E-03	3.01E-03
401372	2/8/2016 - 2/15/2016	Beta	1.84E-02	2.67E-03	2.75E-03
401818	2/15/2016 - 2/22/2016	Beta	1.39E-02	2.35E-03	2.52E-03
402338	2/22/2016 - 2/29/2016	Beta	1.25E-02	2.33E-03	2.67E-03
403060	2/29/2016 - 3/7/2016	Beta	1.48E-02	2.47E-03	2.71E-03
404548	3/7/2016 - 3/14/2016	Beta	1.39E-02	2.51E-03	2.93E-03
405421	3/14/2016 - 3/21/2016	Beta	1.71E-02	2.65E-03	2.88E-03
406051	3/21/2016 - 3/28/2016	Beta	1.61E-02	2.52E-03	2.70E-03
406402	12/28/2015 - 3/28/2016	Cs-134	<6.90E-04	0.00E+00	6.90E-04
		Cs-137	<5.00E-04	0.00E+00	5.00E-04
		Be-7	1.34E-01	2.29E-02	1.18E-02
		K-40	<1.32E-02	0.00E+00	1.32E-02
406395	3/28/2016 - 4/4/2016	Beta	1.71E-02	2.53E-03	2.50E-03
407579	4/4/2016 - 4/11/2016	Beta	1.45E-02	2.46E-03	2.73E-03
408146	4/11/2016 - 4/18/2016	Beta	1.81E-02	2.65E-03	2.74E-03
409467	4/18/2016 - 4/25/2016	Beta	2.16E-02	2.79E-03	2.73E-03
409797	4/25/2016 - 5/2/2016	Beta	2.16E-02	2.84E-03	2.75E-03
410968	5/2/2016 - 5/9/2016	Beta	1.59E-02	2.57E-03	2.81E-03
411446	5/9/2016 - 5/16/2016	Beta	2.06E-02	2.77E-03	2.77E-03
411778	5/16/2016 - 5/23/2016	Beta	1.65E-02	2.44E-03	2.39E-03
412236	5/23/2016 - 5/31/2016	Beta	2.13E-02	2.63E-03	2.54E-03
412756	5/31/2016 - 6/6/2016	Beta	1.60E-02	2.87E-03	3.31E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
413367	6/6/2016 - 6/13/2016	Beta	2.27E-02	2.90E-03	2.85E-03
413907	6/13/2016 - 6/20/2016	Beta	1.90E-02	2.70E-03	2.79E-03
415043	6/20/2016 - 6/27/2016	Beta	2.38E-02	2.90E-03	2.69E-03
415440	3/28/2016 - 6/27/2016	Cs-134	<5.37E-04	0.00E+00	5.37E-04
		Cs-137	<3.67E-04	0.00E+00	3.67E-04
		Be-7	1.85E-01	2.72E-02	9.21E-03
		K-40	<1.58E-02	0.00E+00	1.58E-02
415433	6/27/2016 - 7/5/2016	Beta	2.30E-02	2.66E-03	2.46E-03
416419	7/5/2016 - 7/11/2016	Beta	1.45E-02	2.96E-03	3.71E-03
417036	7/11/2016 - 7/18/2016	Beta	1.66E-02	2.62E-03	2.88E-03
417425	7/18/2016 - 7/25/2016	Beta	2.60E-02	2.99E-03	2.61E-03
417820	7/25/2016 - 8/1/2016	Beta	2.02E-02	2.79E-03	2.83E-03
418292	8/1/2016 - 8/8/2016	Beta	1.97E-02	2.78E-03	2.91E-03
419014	8/8/2016 - 8/15/2016	Beta	1.20E-02	2.32E-03	2.71E-03
419510	8/15/2016 - 8/22/2016	Beta	1.12E-02	2.44E-03	3.09E-03
420041	8/22/2016 - 8/29/2016	Beta	2.70E-02	3.05E-03	2.69E-03
420588	8/29/2016 - 9/6/2016	Beta	2.45E-02	2.62E-03	2.13E-03
421448	9/6/2016 - 9/12/2016	Beta	4.31E-02	4.03E-03	3.33E-03
422587	9/12/2016 - 9/19/2016	Beta	2.47E-02	3.03E-03	2.91E-03
423332	9/19/2016 - 9/26/2016	Beta	2.10E-02	2.87E-03	2.96E-03
424467	6/27/2016 - 9/26/2016	Cs-134	<5.98E-04	0.00E+00	5.98E-04
		Cs-137	<4.74E-04	0.00E+00	4.74E-04
		Be-7	1.65E-01	2.52E-02	1.01E-02
		K-40	<1.03E-02	0.00E+00	1.03E-02
424460	9/26/2016 - 10/3/2016	Beta	2.60E-02	3.02E-03	2.76E-03
425463	10/3/2016 - 10/10/2016	Beta	1.84E-02	2.80E-03	3.13E-03
426008	10/10/2016 - 10/17/2016	Beta	2.68E-02	3.05E-03	2.74E-03
426379	10/17/2016 - 10/24/2016	Beta	1.95E-02	2.78E-03	2.91E-03
427064	10/24/2016 - 10/31/2016	Beta	3.71E-02	3.45E-03	2.73E-03





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427731	10/31/2016 - 11/7/2016	Beta	3.22E-02	3.32E-03	3.04E-03
428224	11/7/2016 - 11/14/2016	Beta	2.09E-02	2.85E-03	2.81E-03
428907	11/14/2016 - 11/21/2016	Beta	4.65E-02	4.30E-03	3.29E-03
429410	11/21/2016 - 11/28/2016	Beta	2.38E-02	3.02E-03	3.04E-03
429969	11/28/2016 - 12/5/2016	Beta	2.00E-02	2.77E-03	2.88E-03
430588	12/5/2016 - 12/12/2016	Beta	2.07E-02	2.83E-03	2.84E-03
431077	12/12/2016 - 12/19/2016	Beta	3.16E-02	3.56E-03	3.21E-03
431478	12/19/2016 - 12/27/2016	Beta	3.57E-02	3.48E-03	2.86E-03
431823	9/26/2016 - 12/27/2016	Cs-134	<5.37E-04	0.00E+00	5.37E-04
		Cs-137	<4.71E-04	0.00E+00	4.71E-04
		Be-7	1.32E-01	2.20E-02	1.09E-02
		K-40	1.18E-02	5.80E-03	1.87E-03

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398700	12/28/2015 - 1/5/2016	Beta	1.60E-02	2.27E-03	2.34E-03
398964	1/5/2016 - 1/11/2016	Beta	8.82E-03	2.56E-03	3.47E-03
399278	1/11/2016 - 1/18/2016	Beta	2.29E-02	2.90E-03	2.89E-03
400020	1/18/2016 - 1/25/2016	Beta	1.65E-02	2.70E-03	3.05E-03
400381	1/25/2016 - 2/1/2016	Beta	2.44E-02	2.82E-03	2.43E-03
401012	2/1/2016 - 2/8/2016	Beta	2.18E-02	2.97E-03	3.08E-03
401373	2/8/2016 - 2/15/2016	Beta	2.04E-02	2.77E-03	2.76E-03
401819	2/15/2016 - 2/22/2016	Beta	1.58E-02	2.45E-03	2.52E-03
402339	2/22/2016 - 2/29/2016	Beta	1.69E-02	2.53E-03	2.62E-03
403061	2/29/2016 - 3/7/2016	Beta	1.65E-02	2.59E-03	2.76E-03
404549	3/7/2016 - 3/14/2016	Beta	1.60E-02	2.62E-03	2.94E-03
405422	3/14/2016 - 3/21/2016	Beta	1.95E-02	2.77E-03	2.88E-03
406052	3/21/2016 - 3/28/2016	Beta	1.99E-02	2.67E-03	2.64E-03
406403	12/28/2015 - 3/28/2016	Cs-134	<3.45E-04	0.00E+00	3.45E-04
		Cs-137	<4.44E-04	0.00E+00	4.44E-04
		Be-7	1.62E-01	2.46E-02	1.43E-02
		K-40	<9.40E-03	0.00E+00	9.40E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID	Sample Dates	Nuclide	Activity	2 Sigma Error	MDA
406396	3/28/2016 - 4/4/2016	Beta	2.19E-02	2.82E-03	2.57E-03
407580	4/4/2016 - 4/11/2016	Beta	1.83E-02	2.68E-03	2.77E-03
408147	4/11/2016 - 4/18/2016	Beta	1.87E-02	2.68E-03	2.74E-03
409468	4/18/2016 - 4/25/2016	Beta	2.76E-02	3.03E-03	2.70E-03
409798	4/25/2016 - 5/2/2016	Beta	1.99E-02	2.80E-03	2.82E-03
410969	5/2/2016 - 5/5/2016	Beta	3.39E-02	4.47E-03	5.61E-03
411447	5/9/2016 - 5/16/2016	Beta	2.19E-02	2.83E-03	2.78E-03
411779	5/16/2016 - 5/23/2016	Beta	1.43E-02	2.29E-03	2.34E-03
412237	5/23/2016 - 5/31/2016	Beta	2.16E-02	2.67E-03	2.58E-03
412757	5/31/2016 - 6/6/2016	Beta	1.51E-02	2.82E-03	3.31E-03
413368	6/6/2016 - 6/13/2016	Beta	2.04E-02	2.80E-03	2.85E-03
413908	6/13/2016 - 6/20/2016	Beta	1.82E-02	2.62E-03	2.73E-03
415044	6/20/2016 - 6/27/2016	Beta	1.89E-02	2.72E-03	2.75E-03
415441	3/28/2016 - 6/27/2016	Cs-134	<7.92E-04	0.00E+00	7.92E-04
		Cs-137	<5.83E-04	0.00E+00	5.83E-04
		Be-7	2.05E-01	3.08E-02	1.23E-02
		K-40	<1.71E-02	0.00E+00	1.71E-02
415434	6/27/2016 - 7/5/2016	Beta	2.31E-02	2.67E-03	2.46E-03
416420	7/5/2016 - 7/11/2016	Beta	1.49E-02	2.98E-03	3.71E-03
417037	7/11/2016 - 7/18/2016	Beta	1.83E-02	2.66E-03	2.82E-03
417426	7/18/2016 - 7/25/2016	Beta	2.70E-02	3.08E-03	2.67E-03
417821	7/25/2016 - 8/1/2016	Beta	2.34E-02	2.93E-03	2.83E-03
418293	8/1/2016 - 8/8/2016	Beta	2.34E-02	2.95E-03	2.91E-03
419015	8/8/2016 - 8/15/2016	Beta	1.27E-02	2.32E-03	2.65E-03
419511	8/15/2016 - 8/22/2016	Beta	1.16E-02	2.51E-03	3.17E-03
420042	8/22/2016 - 8/29/2016	Beta	2.50E-02	2.96E-03	2.69E-03
420589	8/29/2016 - 9/6/2016	Beta	2.78E-02	2.75E-03	2.12E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421449	9/6/2016 - 9/12/2016	Beta	4.06E-02	3.88E-03	3.24E-03
422588	9/12/2016 - 9/19/2016	Beta	2.67E-02	3.17E-03	3.00E-03
423333	9/19/2016 - 9/26/2016	Beta	2.45E-02	3.02E-03	2.97E-03
424468	6/27/2016 - 9/26/2016	Cs-134	<5.17E-04	0.00E+00	5.17E-04
		Cs-137	<4.56E-04	0.00E+00	4.56E-04
		Be-7	1.68E-01	2.45E-02	1.09E-02
		K-40	9.47E-03	5.14E-03	1.83E-03
424461	9/26/2016 - 10/3/2016	Beta	2.43E-02	2.92E-03	2.72E-03
425464	10/3/2016 - 10/10/2016	Beta	1.82E-02	2.77E-03	3.11E-03
426009	10/10/2016 - 10/17/2016	Beta	2.66E-02	3.09E-03	2.79E-03
426380	10/17/2016 - 10/24/2016	Beta	2.11E-02	2.86E-03	2.90E-03
427065	10/24/2016 - 10/31/2016	Beta	3.20E-02	3.26E-03	2.73E-03
427732	10/31/2016 - 11/7/2016	Beta	3.52E-02	3.47E-03	3.09E-03
428225	11/7/2016 - 11/14/2016	Beta	1.91E-02	2.69E-03	2.69E-03
428908	11/14/2016 - 11/21/2016	Beta	5.18E-02	4.68E-03	3.51E-03
429411	11/21/2016 - 11/28/2016	Beta	2.70E-02	3.15E-03	3.04E-03
429970	11/28/2016 - 12/5/2016	Beta	2.07E-02	2.77E-03	2.83E-03
430589	12/5/2016 - 12/12/2016	Beta	2.15E-02	2.90E-03	2.90E-03
431078	12/12/2016 - 12/19/2016	Beta	3.45E-02	3.67E-03	3.20E-03
431479	12/19/2016 - 12/27/2016	Beta	4.00E-02	3.65E-03	2.86E-03
431824	9/26/2016 - 12/27/2016	Cs-134	<5.52E-04	0.00E+00	5.52E-04
		Cs-137	<4.33E-04	0.00E+00	4.33E-04
		Be-7	1.46E-01	2.44E-02	1.57E-02
		K-40	1.42E-02	6.50E-03	1.93E-03

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398708	12/28/2015 - 1/5/2016	I-131	<8.21E-03	0.00E+00	8.21E-03
		Cs-134	<5.73E-03	0.00E+00	5.73E-03
		Cs-137	<1.47E-03	0.00E+00	1.47E-03
		Be-7	<4.95E-02	0.00E+00	4.95E-02
		K-40	3.21E-01	1.12E-01	2.49E-02
398965	1/5/2016 - 1/11/2016	I-131	<9.98E-03	0.00E+00	9.98E-03
		Cs-134	<1.10E-02	0.00E+00	1.10E-02
		Cs-137	<9.50E-03	0.00E+00	9.50E-03
		Be-7	<6.94E-02	0.00E+00	6.94E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398965	1/5/2016 - 1/11/2016	K-40	4.23E-01	1.72E-01	1.75E-01
399279	1/11/2016 - 1/18/2016	I-131	<1.62E-02	0.00E+00	1.62E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	<5.15E-01	0.00E+00	5.15E-01
400021	1/18/2016 - 1/25/2016	I-131	<1.92E-02	0.00E+00	1.92E-02
		Cs-134	<1.73E-02	0.00E+00	1.73E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<9.29E-02	0.00E+00	9.29E-02
		K-40	5.20E-01	2.11E-01	1.72E-01
400382	1/25/2016 - 2/1/2016	I-131	<8.80E-03	0.00E+00	8.80E-03
		Cs-134	<6.78E-03	0.00E+00	6.78E-03
		Cs-137	<8.96E-03	0.00E+00	8.96E-03
		Be-7	<3.59E-02	0.00E+00	3.59E-02
		K-40	2.49E-01	1.23E-01	1.37E-01
401013	2/1/2016 - 2/8/2016	I-131	<7.86E-03	0.00E+00	7.86E-03
		Cs-134	<6.76E-03	0.00E+00	6.76E-03
		Cs-137	<6.41E-03	0.00E+00	6.41E-03
		Be-7	<6.07E-02	0.00E+00	6.07E-02
		K-40	4.28E-01	1.38E-01	2.76E-02
401374	2/8/2016 - 2/15/2016	I-131	<7.96E-03	0.00E+00	7.96E-03
		Cs-134	<6.42E-03	0.00E+00	6.42E-03
		Cs-137	<8.58E-03	0.00E+00	8.58E-03
		Be-7	<4.19E-02	0.00E+00	4.19E-02
		K-40	2.65E-01	1.31E-01	1.52E-01
401820	2/15/2016 - 2/22/2016	I-131	<8.52E-03	0.00E+00	8.52E-03
		Cs-134	<6.26E-03	0.00E+00	6.26E-03
		Cs-137	<8.36E-03	0.00E+00	8.36E-03
		Be-7	<5.80E-02	0.00E+00	5.80E-02
		K-40	4.03E-01	1.53E-01	1.52E-01
402340	2/22/2016 - 2/29/2016	I-131	<6.75E-03	0.00E+00	6.75E-03
		Cs-134	<8.51E-03	0.00E+00	8.51E-03
		Cs-137	<7.29E-03	0.00E+00	7.29E-03
		Be-7	<5.14E-02	0.00E+00	5.14E-02
		K-40	4.39E-01	1.41E-01	2.83E-02
403062	2/29/2016 - 3/7/2016	I-131	<8.50E-03	0.00E+00	8.50E-03
		Cs-134	<6.05E-03	0.00E+00	6.05E-03
		Cs-137	<7.52E-03	0.00E+00	7.52E-03
		Be-7	<4.81E-02	0.00E+00	4.81E-02
		K-40	3.05E-01	1.37E-01	1.49E-01
404550	3/7/2016 - 3/14/2016	I-131	<6.95E-03	0.00E+00	6.95E-03
		Cs-134	<7.74E-03	0.00E+00	7.74E-03
		Cs-137	<7.94E-03	0.00E+00	7.94E-03
		Be-7	<6.17E-02	0.00E+00	6.17E-02
		K-40	2.03E-01	1.25E-01	1.65E-01
405423	3/14/2016 - 3/21/2016	I-131	<6.35E-03	0.00E+00	6.35E-03
		Cs-134	<7.07E-03	0.00E+00	7.07E-03
		Cs-137	<6.72E-03	0.00E+00	6.72E-03
		Be-7	<5.57E-02	0.00E+00	5.57E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405423	3/14/2016 - 3/21/2016	K-40	3.25E-01	1.31E-01	1.14E-01
406053	3/21/2016 - 3/28/2016	I-131	<6.83E-03	0.00E+00	6.83E-03
		Cs-134	<7.36E-03	0.00E+00	7.36E-03
		Cs-137	<5.64E-03	0.00E+00	5.64E-03
		Be-7	<4.31E-02	0.00E+00	4.31E-02
		K-40	3.63E-01	1.45E-01	1.44E-01
406404	3/28/2016 - 4/4/2016	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<6.58E-03	0.00E+00	6.58E-03
		Cs-137	<8.92E-03	0.00E+00	8.92E-03
		Be-7	<6.20E-02	0.00E+00	6.20E-02
		K-40	4.98E-01	1.64E-01	1.11E-01
407581	4/4/2016 - 4/11/2016	I-131	<4.92E-03	0.00E+00	4.92E-03
		Cs-134	<6.01E-03	0.00E+00	6.01E-03
		Cs-137	<6.71E-03	0.00E+00	6.71E-03
		Be-7	<5.17E-02	0.00E+00	5.17E-02
		K-40	<2.86E-01	0.00E+00	2.86E-01
408148	4/11/2016 - 4/18/2016	I-131	<8.16E-03	0.00E+00	8.16E-03
		Cs-134	<8.61E-03	0.00E+00	8.61E-03
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<5.17E-02	0.00E+00	5.17E-02
		K-40	<3.31E-01	0.00E+00	3.31E-01
409469	4/18/2016 - 4/25/2016	I-131	<9.79E-03	0.00E+00	9.79E-03
		Cs-134	<6.61E-03	0.00E+00	6.61E-03
		Cs-137	<8.22E-03	0.00E+00	8.22E-03
		Be-7	<5.32E-02	0.00E+00	5.32E-02
		K-40	2.84E-01	1.12E-01	2.85E-02
409799	4/25/2016 - 5/2/2016	I-131	<8.56E-03	0.00E+00	8.56E-03
		Cs-134	<7.02E-03	0.00E+00	7.02E-03
		Cs-137	<8.73E-03	0.00E+00	8.73E-03
		Be-7	<4.56E-02	0.00E+00	4.56E-02
		K-40	4.20E-01	1.59E-01	1.49E-01
410970	5/2/2016 - 5/9/2016	I-131	<6.27E-03	0.00E+00	6.27E-03
		Cs-134	<7.67E-03	0.00E+00	7.67E-03
		Cs-137	<9.03E-03	0.00E+00	9.03E-03
		Be-7	<4.62E-02	0.00E+00	4.62E-02
		K-40	3.30E-01	1.21E-01	2.80E-02
411448	5/9/2016 - 5/16/2016	I-131	<7.43E-03	0.00E+00	7.43E-03
		Cs-134	<8.82E-03	0.00E+00	8.82E-03
		Cs-137	<9.59E-03	0.00E+00	9.59E-03
		Be-7	<6.45E-02	0.00E+00	6.45E-02
		K-40	2.39E-01	1.02E-01	2.82E-02
411780	5/16/2016 - 5/23/2016	I-131	<7.93E-03	0.00E+00	7.93E-03
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<6.74E-03	0.00E+00	6.74E-03
		Be-7	<5.64E-02	0.00E+00	5.64E-02
		K-40	3.88E-01	1.32E-01	2.84E-02
412238	5/23/2016 - 5/31/2016	I-131	<8.31E-03	0.00E+00	8.31E-03
		Cs-134	<8.17E-03	0.00E+00	8.17E-03
		Cs-137	<6.26E-03	0.00E+00	6.26E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
412238	5/23/2016 - 5/31/2016	K-40	4.30E-01	1.43E-01	1.24E-01
412758	5/31/2016 - 6/6/2016	I-131	<8.77E-03	0.00E+00	8.77E-03
		Cs-134	<7.91E-03	0.00E+00	7.91E-03
		Cs-137	<9.85E-03	0.00E+00	9.85E-03
		Be-7	<6.26E-02	0.00E+00	6.26E-02
		K-40	4.79E-01	1.58E-01	3.25E-02
413369	6/6/2016 - 6/13/2016	I-131	<6.92E-03	0.00E+00	6.92E-03
		Cs-134	<6.41E-03	0.00E+00	6.41E-03
		Cs-137	<8.57E-03	0.00E+00	8.57E-03
		Be-7	<5.10E-02	0.00E+00	5.10E-02
		K-40	2.19E-01	1.27E-01	1.63E-01
413909	6/13/2016 - 6/20/2016	I-131	<8.82E-03	0.00E+00	8.82E-03
		Cs-134	<8.38E-03	0.00E+00	8.38E-03
		Cs-137	<8.42E-03	0.00E+00	8.42E-03
		Be-7	<5.07E-02	0.00E+00	5.07E-02
		K-40	3.69E-01	1.36E-01	1.07E-01
415045	6/20/2016 - 6/27/2016	I-131	<6.22E-03	0.00E+00	6.22E-03
		Cs-134	<6.30E-03	0.00E+00	6.30E-03
		Cs-137	<9.96E-03	0.00E+00	9.96E-03
		Be-7	<2.81E-02	0.00E+00	2.81E-02
		K-40	4.62E-01	1.44E-01	2.78E-02
415442	6/27/2016 - 7/5/2016	I-131	<8.27E-03	0.00E+00	8.27E-03
		Cs-134	<6.69E-03	0.00E+00	6.69E-03
		Cs-137	<6.30E-03	0.00E+00	6.30E-03
		Be-7	<4.76E-02	0.00E+00	4.76E-02
		K-40	3.87E-01	1.23E-01	2.44E-02
416421	7/5/2016 - 7/11/2016	I-131	<8.33E-03	0.00E+00	8.33E-03
		Cs-134	<6.13E-03	0.00E+00	6.13E-03
		Cs-137	<8.50E-03	0.00E+00	8.50E-03
		Be-7	<4.85E-02	0.00E+00	4.85E-02
		K-40	5.63E-01	1.82E-01	1.24E-01
417038	7/11/2016 - 7/18/2016	I-131	<7.32E-03	0.00E+00	7.32E-03
		Cs-134	<6.79E-03	0.00E+00	6.79E-03
		Cs-137	<8.99E-03	0.00E+00	8.99E-03
		Be-7	<7.01E-02	0.00E+00	7.01E-02
		K-40	3.90E-01	1.32E-01	2.78E-02
417427	7/18/2016 - 7/25/2016	I-131	<7.78E-03	0.00E+00	7.78E-03
		Cs-134	<7.63E-03	0.00E+00	7.63E-03
		Cs-137	<7.84E-03	0.00E+00	7.84E-03
		Be-7	<5.44E-02	0.00E+00	5.44E-02
		K-40	3.08E-01	1.16E-01	2.78E-02
417822	7/25/2016 - 8/1/2016	I-131	<7.37E-03	0.00E+00	7.37E-03
		Cs-134	<7.25E-03	0.00E+00	7.25E-03
		Cs-137	<6.46E-03	0.00E+00	6.46E-03
		Be-7	<4.61E-02	0.00E+00	4.61E-02
		K-40	2.71E-01	1.31E-01	1.48E-01
418294	8/1/2016 - 8/8/2016	I-131	<6.74E-03	0.00E+00	6.74E-03
		Cs-134	<6.75E-03	0.00E+00	6.75E-03
		Cs-137	<8.40E-03	0.00E+00	8.40E-03
		Be-7	<4.99E-02	0.00E+00	4.99E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
418294	8/1/2016 - 8/8/2016	K-40	3.14E-01	1.41E-01	1.57E-01
419016	8/8/2016 - 8/15/2016	I-131	<7.85E-03	0.00E+00	7.85E-03
		Cs-134	<6.30E-03	0.00E+00	6.30E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<6.43E-02	0.00E+00	6.43E-02
		K-40	3.47E-01	1.44E-01	1.50E-01
419512	8/15/2016 - 8/22/2016	I-131	<6.28E-03	0.00E+00	6.28E-03
		Cs-134	<6.31E-03	0.00E+00	6.31E-03
		Cs-137	<7.19E-03	0.00E+00	7.19E-03
		Be-7	<5.40E-02	0.00E+00	5.40E-02
		K-40	3.80E-01	1.30E-01	2.78E-02
420043	8/22/2016 - 8/29/2016	I-131	<8.22E-03	0.00E+00	8.22E-03
		Cs-134	<7.24E-03	0.00E+00	7.24E-03
		Cs-137	<7.20E-03	0.00E+00	7.20E-03
		Be-7	<6.67E-02	0.00E+00	6.67E-02
		K-40	3.54E-01	1.54E-01	1.77E-01
420590	8/29/2016 - 9/6/2016	I-131	<5.10E-03	0.00E+00	5.10E-03
		Cs-134	<6.97E-03	0.00E+00	6.97E-03
		Cs-137	<7.81E-03	0.00E+00	7.81E-03
		Be-7	<4.72E-02	0.00E+00	4.72E-02
		K-40	3.92E-01	1.24E-01	2.42E-02
421450	9/6/2016 - 9/12/2016	I-131	<1.04E-02	0.00E+00	1.04E-02
		Cs-134	<5.79E-03	0.00E+00	5.79E-03
		Cs-137	<7.20E-03	0.00E+00	7.20E-03
		Be-7	<8.27E-02	0.00E+00	8.27E-02
		K-40	7.07E-01	2.11E-01	1.35E-01
422589	9/12/2016 - 9/19/2016	I-131	<9.07E-03	0.00E+00	9.07E-03
		Cs-134	<8.40E-03	0.00E+00	8.40E-03
		Cs-137	<9.99E-03	0.00E+00	9.99E-03
		Be-7	<6.68E-02	0.00E+00	6.68E-02
		K-40	3.86E-01	1.37E-01	9.57E-02
423334	9/19/2016 - 9/26/2016	I-131	<7.40E-03	0.00E+00	7.40E-03
		Cs-134	<6.99E-03	0.00E+00	6.99E-03
		Cs-137	<7.96E-03	0.00E+00	7.96E-03
		Be-7	<3.92E-02	0.00E+00	3.92E-02
		K-40	4.91E-01	1.54E-01	3.02E-02
424469	9/26/2016 - 10/3/2016	I-131	<8.45E-03	0.00E+00	8.45E-03
		Cs-134	<8.37E-03	0.00E+00	8.37E-03
		Cs-137	<6.73E-03	0.00E+00	6.73E-03
		Be-7	<5.63E-02	0.00E+00	5.63E-02
		K-40	<2.96E-01	0.00E+00	2.96E-01
425465	10/3/2016 - 10/10/2016	I-131	<8.60E-03	0.00E+00	8.60E-03
		Cs-134	<6.82E-03	0.00E+00	6.82E-03
		Cs-137	<9.02E-03	0.00E+00	9.02E-03
		Be-7	<6.24E-02	0.00E+00	6.24E-02
		K-40	4.35E-01	1.48E-01	1.08E-01
426010	10/10/2016 - 10/17/2016	I-131	<8.50E-03	0.00E+00	8.50E-03
		Cs-134	<6.98E-03	0.00E+00	6.98E-03
		Cs-137	<8.68E-03	0.00E+00	8.68E-03
		Be-7	<4.54E-02	0.00E+00	4.54E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
426010	10/10/2016 - 10/17/2016	K-40	4.35E-01	1.44E-01	3.02E-02
426381	10/17/2016 - 10/24/2016	I-131	<7.97E-03	0.00E+00	7.97E-03
		Cs-134	<7.55E-03	0.00E+00	7.55E-03
		Cs-137	<7.52E-03	0.00E+00	7.52E-03
		Be-7	<5.59E-02	0.00E+00	5.59E-02
		K-40	2.79E-01	1.18E-01	9.43E-02
427066	10/24/2016 - 10/31/2016	I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<6.43E-03	0.00E+00	6.43E-03
		Cs-137	<4.90E-03	0.00E+00	4.90E-03
		Be-7	<7.68E-02	0.00E+00	7.68E-02
		K-40	2.94E-01	1.40E-01	1.55E-01
427733	10/31/2016 - 11/7/2016	I-131	<9.82E-03	0.00E+00	9.82E-03
		Cs-134	<7.68E-03	0.00E+00	7.68E-03
		Cs-137	<8.12E-03	0.00E+00	8.12E-03
		Be-7	<4.69E-02	0.00E+00	4.69E-02
		K-40	3.81E-01	1.44E-01	1.10E-01
428226	11/7/2016 - 11/14/2016	I-131	<1.19E-02	0.00E+00	1.19E-02
		Cs-134	<7.54E-03	0.00E+00	7.54E-03
		Cs-137	<9.36E-03	0.00E+00	9.36E-03
		Be-7	<6.85E-02	0.00E+00	6.85E-02
		K-40	4.77E-01	1.73E-01	1.67E-01
428909	11/14/2016 - 11/21/2016	I-131	<1.23E-02	0.00E+00	1.23E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<9.60E-03	0.00E+00	9.60E-03
		Be-7	<4.79E-02	0.00E+00	4.79E-02
		K-40	4.84E-01	1.79E-01	1.37E-01
429412	11/21/2016 - 11/28/2016	I-131	<8.67E-03	0.00E+00	8.67E-03
		Cs-134	<6.79E-03	0.00E+00	6.79E-03
		Cs-137	<7.20E-03	0.00E+00	7.20E-03
		Be-7	<5.02E-02	0.00E+00	5.02E-02
		K-40	2.98E-01	1.35E-01	1.45E-01
429971	11/28/2016 - 12/5/2016	I-131	<9.57E-03	0.00E+00	9.57E-03
		Cs-134	<4.42E-03	0.00E+00	4.42E-03
		Cs-137	<5.48E-03	0.00E+00	5.48E-03
		Be-7	<5.40E-02	0.00E+00	5.40E-02
		K-40	3.33E-01	1.40E-01	1.48E-01
430590	12/5/2016 - 12/12/2016	I-131	<8.29E-03	0.00E+00	8.29E-03
		Cs-134	<6.81E-03	0.00E+00	6.81E-03
		Cs-137	<9.99E-03	0.00E+00	9.99E-03
		Be-7	<5.04E-02	0.00E+00	5.04E-02
		K-40	4.03E-01	1.58E-01	1.68E-01
431079	12/12/2016 - 12/19/2016	I-131	<8.29E-03	0.00E+00	8.29E-03
		Cs-134	<7.97E-03	0.00E+00	7.97E-03
		Cs-137	<7.78E-03	0.00E+00	7.78E-03
		Be-7	<6.36E-02	0.00E+00	6.36E-02
		K-40	3.88E-01	1.56E-01	1.68E-01
431480	12/19/2016 - 12/27/2016	I-131	<8.80E-03	0.00E+00	8.80E-03
		Cs-134	<5.14E-03	0.00E+00	5.14E-03
		Cs-137	<7.13E-03	0.00E+00	7.13E-03
		Be-7	<4.10E-02	0.00E+00	4.10E-02





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431480	12/19/2016 - 12/27/2016	K-40	3.10E-01	1.14E-01	2.71E-02

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398709	12/28/2015 - 1/5/2016	I-131	<7.08E-03	0.00E+00	7.08E-03
		Cs-134	<5.44E-03	0.00E+00	5.44E-03
		Cs-137	<6.19E-03	0.00E+00	6.19E-03
		Be-7	<5.05E-02	0.00E+00	5.05E-02
		K-40	2.75E-01	1.10E-01	9.23E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398966	1/5/2016 - 1/11/2016	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<5.40E-03	0.00E+00	5.40E-03
		Be-7	<5.61E-02	0.00E+00	5.61E-02
		K-40	3.70E-01	1.76E-01	2.11E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
399280	1/11/2016 - 1/18/2016	I-131	<2.04E-02	0.00E+00	2.04E-02
		Cs-134	<1.14E-02	0.00E+00	1.14E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	4.08E-01	1.92E-01	1.86E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400022	1/18/2016 - 1/25/2016	I-131	<1.25E-02	0.00E+00	1.25E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.83E-02	0.00E+00	1.83E-02
		Be-7	<7.61E-02	0.00E+00	7.61E-02
		K-40	5.66E-01	2.06E-01	4.80E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400383	1/25/2016 - 2/1/2016	I-131	<8.81E-03	0.00E+00	8.81E-03
		Cs-134	<6.88E-03	0.00E+00	6.88E-03
		Cs-137	<4.46E-03	0.00E+00	4.46E-03
		Be-7	<6.52E-02	0.00E+00	6.52E-02
		K-40	4.69E-01	1.55E-01	1.13E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401014	2/1/2016 - 2/8/2016	I-131	<8.04E-03	0.00E+00	8.04E-03
		Cs-134	<8.03E-03	0.00E+00	8.03E-03
		Cs-137	<6.77E-03	0.00E+00	6.77E-03
		Be-7	<7.25E-02	0.00E+00	7.25E-02
		K-40	4.10E-01	1.53E-01	1.40E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401375	2/8/2016 - 2/15/2016	I-131	<7.89E-03	0.00E+00	7.89E-03
		Cs-134	<6.38E-03	0.00E+00	6.38E-03
		Cs-137	<6.52E-03	0.00E+00	6.52E-03
		Be-7	<4.65E-02	0.00E+00	4.65E-02
		K-40	3.57E-01	1.54E-01	1.73E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401821	2/15/2016 - 2/22/2016	I-131	<8.10E-03	0.00E+00	8.10E-03
		Cs-134	<7.33E-03	0.00E+00	7.33E-03
		Cs-137	<5.63E-03	0.00E+00	5.63E-03
		Be-7	<6.55E-02	0.00E+00	6.55E-02
		K-40	3.56E-01	1.45E-01	1.45E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
402341	2/22/2016 - 2/29/2016	I-131	<8.33E-03	0.00E+00	8.33E-03
		Cs-134	<8.25E-03	0.00E+00	8.25E-03
		Cs-137	<8.07E-03	0.00E+00	8.07E-03
		Be-7	<5.56E-02	0.00E+00	5.56E-02
		K-40	2.92E-01	1.38E-01	1.59E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403063	2/29/2016 - 3/7/2016	I-131	<9.00E-03	0.00E+00	9.00E-03
		Cs-134	<7.60E-03	0.00E+00	7.60E-03
		Cs-137	<7.55E-03	0.00E+00	7.55E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403063	2/29/2016 - 3/7/2016	Be-7	<7.02E-02	0.00E+00	7.02E-02
		K-40	3.68E-01	1.61E-01	1.85E-01
404551	3/7/2016 - 3/14/2016	I-131	<8.21E-03	0.00E+00	8.21E-03
		Cs-134	<8.64E-03	0.00E+00	8.64E-03
		Cs-137	<7.29E-03	0.00E+00	7.29E-03
		Be-7	<4.65E-02	0.00E+00	4.65E-02
		K-40	4.23E-01	1.43E-01	3.10E-02
405424	3/14/2016 - 3/21/2016	I-131	<7.38E-03	0.00E+00	7.38E-03
		Cs-134	<5.23E-03	0.00E+00	5.23E-03
		Cs-137	<1.64E-03	0.00E+00	1.64E-03
		Be-7	<5.45E-02	0.00E+00	5.45E-02
		K-40	1.56E-01	1.29E-01	1.93E-01
406054	3/21/2016 - 3/28/2016	I-131	<8.15E-03	0.00E+00	8.15E-03
		Cs-134	<6.51E-03	0.00E+00	6.51E-03
		Cs-137	<6.65E-03	0.00E+00	6.65E-03
		Be-7	<5.66E-02	0.00E+00	5.66E-02
		K-40	3.22E-01	1.29E-01	1.10E-01
406405	3/28/2016 - 4/4/2016	I-131	<8.16E-03	0.00E+00	8.16E-03
		Cs-134	<5.03E-03	0.00E+00	5.03E-03
		Cs-137	<9.49E-03	0.00E+00	9.49E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	4.93E-01	1.62E-01	1.05E-01
407582	4/4/2016 - 4/11/2016	I-131	<6.69E-03	0.00E+00	6.69E-03
		Cs-134	<7.97E-03	0.00E+00	7.97E-03
		Cs-137	<7.79E-03	0.00E+00	7.79E-03
		Be-7	<5.79E-02	0.00E+00	5.79E-02
		K-40	2.90E-01	1.19E-01	9.48E-02
408149	4/11/2016 - 4/18/2016	I-131	<7.75E-03	0.00E+00	7.75E-03
		Cs-134	<7.20E-03	0.00E+00	7.20E-03
		Cs-137	<4.39E-03	0.00E+00	4.39E-03
		Be-7	<4.10E-02	0.00E+00	4.10E-02
		K-40	4.74E-01	1.67E-01	1.61E-01
409470	4/18/2016 - 4/25/2016	I-131	<8.99E-03	0.00E+00	8.99E-03
		Cs-134	<7.93E-03	0.00E+00	7.93E-03
		Cs-137	<8.32E-03	0.00E+00	8.32E-03
		Be-7	<5.08E-02	0.00E+00	5.08E-02
		K-40	3.24E-01	1.18E-01	2.74E-02
409800	4/25/2016 - 5/2/2016	I-131	<1.44E-03	0.00E+00	1.44E-03
		Cs-134	<6.09E-03	0.00E+00	6.09E-03
		Cs-137	<8.90E-03	0.00E+00	8.90E-03
		Be-7	<6.33E-02	0.00E+00	6.33E-02
		K-40	3.92E-01	1.42E-01	1.11E-01
410971	5/2/2016 - 5/9/2016	I-131	<6.84E-03	0.00E+00	6.84E-03
		Cs-134	<8.04E-03	0.00E+00	8.04E-03
		Cs-137	<8.45E-03	0.00E+00	8.45E-03
		Be-7	<5.43E-02	0.00E+00	5.43E-02
		K-40	5.01E-01	1.60E-01	1.18E-01
411449	5/9/2016 - 5/16/2016	I-131	<8.94E-03	0.00E+00	8.94E-03
		Cs-134	<8.85E-03	0.00E+00	8.85E-03
		Cs-137	<1.10E-02	0.00E+00	1.10E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
411449	5/9/2016 - 5/16/2016	Be-7	<7.00E-02	0.00E+00	7.00E-02
		K-40	4.29E-01	1.67E-01	1.71E-01
411781	5/16/2016 - 5/23/2016	I-131	<6.65E-03	0.00E+00	6.65E-03
		Cs-134	<7.71E-03	0.00E+00	7.71E-03
		Cs-137	<7.25E-03	0.00E+00	7.25E-03
		Be-7	<5.85E-02	0.00E+00	5.85E-02
		K-40	3.84E-01	1.31E-01	2.82E-02
412239	5/23/2016 - 5/31/2016	I-131	<6.26E-03	0.00E+00	6.26E-03
		Cs-134	<4.56E-03	0.00E+00	4.56E-03
		Cs-137	<7.90E-03	0.00E+00	7.90E-03
		Be-7	<3.66E-02	0.00E+00	3.66E-02
		K-40	3.42E-01	1.15E-01	2.44E-02
412759	5/31/2016 - 6/6/2016	I-131	<5.37E-03	0.00E+00	5.37E-03
		Cs-134	<9.32E-03	0.00E+00	9.32E-03
		Cs-137	<9.81E-03	0.00E+00	9.81E-03
		Be-7	<6.23E-02	0.00E+00	6.23E-02
		K-40	4.18E-01	1.46E-01	3.24E-02
413370	6/6/2016 - 6/13/2016	I-131	<9.38E-03	0.00E+00	9.38E-03
		Cs-134	<7.60E-03	0.00E+00	7.60E-03
		Cs-137	<7.15E-03	0.00E+00	7.15E-03
		Be-7	<4.11E-02	0.00E+00	4.11E-02
		K-40	4.50E-01	1.49E-01	1.06E-01
413910	6/13/2016 - 6/20/2016	I-131	<6.54E-03	0.00E+00	6.54E-03
		Cs-134	<4.44E-03	0.00E+00	4.44E-03
		Cs-137	<7.79E-03	0.00E+00	7.79E-03
		Be-7	<6.67E-02	0.00E+00	6.67E-02
		K-40	3.77E-01	1.29E-01	2.76E-02
415046	6/20/2016 - 6/27/2016	I-131	<7.81E-03	0.00E+00	7.81E-03
		Cs-134	<7.68E-03	0.00E+00	7.68E-03
		Cs-137	<6.47E-03	0.00E+00	6.47E-03
		Be-7	<6.71E-02	0.00E+00	6.71E-02
		K-40	3.50E-01	1.34E-01	1.11E-01
415443	6/27/2016 - 7/5/2016	I-131	<7.53E-03	0.00E+00	7.53E-03
		Cs-134	<6.30E-03	0.00E+00	6.30E-03
		Cs-137	<6.26E-03	0.00E+00	6.26E-03
		Be-7	<4.41E-02	0.00E+00	4.41E-02
		K-40	3.93E-01	1.31E-01	9.52E-02
416422	7/5/2016 - 7/11/2016	I-131	<8.65E-03	0.00E+00	8.65E-03
		Cs-134	<8.36E-03	0.00E+00	8.36E-03
		Cs-137	<8.31E-03	0.00E+00	8.31E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02
		K-40	5.34E-01	1.66E-01	3.21E-02
417039	7/11/2016 - 7/18/2016	I-131	<7.21E-03	0.00E+00	7.21E-03
		Cs-134	<6.21E-03	0.00E+00	6.21E-03
		Cs-137	<6.33E-03	0.00E+00	6.33E-03
		Be-7	<5.00E-02	0.00E+00	5.00E-02
		K-40	3.02E-01	1.14E-01	2.73E-02
417428	7/18/2016 - 7/25/2016	I-131	<7.28E-03	0.00E+00	7.28E-03
		Cs-134	<8.07E-03	0.00E+00	8.07E-03
		Cs-137	<9.54E-03	0.00E+00	9.54E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
417428	7/18/2016 - 7/25/2016	Be-7	<1.05E-02	0.00E+00	1.05E-02
		K-40	4.40E-01	1.60E-01	1.54E-01
417823	7/25/2016 - 8/1/2016	I-131	<8.80E-03	0.00E+00	8.80E-03
		Cs-134	<7.97E-03	0.00E+00	7.97E-03
		Cs-137	<4.60E-03	0.00E+00	4.60E-03
		Be-7	<6.28E-02	0.00E+00	6.28E-02
		K-40	4.53E-01	1.51E-01	1.09E-01
418295	8/1/2016 - 8/8/2016	I-131	<7.26E-03	0.00E+00	7.26E-03
		Cs-134	<7.59E-03	0.00E+00	7.59E-03
		Cs-137	<8.38E-03	0.00E+00	8.38E-03
		Be-7	<4.58E-02	0.00E+00	4.58E-02
		K-40	3.66E-01	1.27E-01	2.76E-02
419017	8/8/2016 - 8/15/2016	I-131	<8.96E-03	0.00E+00	8.96E-03
		Cs-134	<7.92E-03	0.00E+00	7.92E-03
		Cs-137	<7.99E-03	0.00E+00	7.99E-03
		Be-7	<5.52E-02	0.00E+00	5.52E-02
		K-40	4.88E-01	1.61E-01	1.11E-01
419513	8/15/2016 - 8/22/2016	I-131	<7.51E-03	0.00E+00	7.51E-03
		Cs-134	<6.50E-03	0.00E+00	6.50E-03
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<4.61E-02	0.00E+00	4.61E-02
		K-40	3.85E-01	1.48E-01	1.24E-01
420044	8/22/2016 - 8/29/2016	I-131	<7.31E-03	0.00E+00	7.31E-03
		Cs-134	<3.54E-03	0.00E+00	3.54E-03
		Cs-137	<8.96E-03	0.00E+00	8.96E-03
		Be-7	<3.56E-02	0.00E+00	3.56E-02
		K-40	3.99E-01	1.50E-01	1.44E-01
420591	8/29/2016 - 9/6/2016	I-131	<7.62E-03	0.00E+00	7.62E-03
		Cs-134	<5.57E-03	0.00E+00	5.57E-03
		Cs-137	<6.34E-03	0.00E+00	6.34E-03
		Be-7	<4.46E-02	0.00E+00	4.46E-02
		K-40	2.98E-01	1.18E-01	1.03E-01
421451	9/6/2016 - 9/12/2016	I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<8.09E-03	0.00E+00	8.09E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<5.90E-02	0.00E+00	5.90E-02
		K-40	3.99E-01	1.62E-01	1.44E-01
422590	9/12/2016 - 9/19/2016	I-131	<7.86E-03	0.00E+00	7.86E-03
		Cs-134	<5.85E-03	0.00E+00	5.85E-03
		Cs-137	<8.54E-03	0.00E+00	8.54E-03
		Be-7	<6.14E-02	0.00E+00	6.14E-02
		K-40	4.45E-01	1.52E-01	1.18E-01
423335	9/19/2016 - 9/26/2016	I-131	<7.39E-03	0.00E+00	7.39E-03
		Cs-134	<4.65E-03	0.00E+00	4.65E-03
		Cs-137	<1.69E-03	0.00E+00	1.69E-03
		Be-7	<5.17E-02	0.00E+00	5.17E-02
		K-40	4.91E-01	1.49E-01	2.83E-02
424470	9/26/2016 - 10/3/2016	I-131	<6.61E-03	0.00E+00	6.61E-03
		Cs-134	<6.27E-03	0.00E+00	6.27E-03
		Cs-137	<8.92E-03	0.00E+00	8.92E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
424470	9/26/2016 - 10/3/2016	Be-7	<5.78E-02	0.00E+00	5.78E-02
		K-40	3.97E-01	1.32E-01	2.76E-02
425466	10/3/2016 - 10/10/2016	I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<7.96E-03	0.00E+00	7.96E-03
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<6.04E-02	0.00E+00	6.04E-02
		K-40	3.77E-01	1.33E-01	3.00E-02
426011	10/10/2016 - 10/17/2016	I-131	<7.34E-03	0.00E+00	7.34E-03
		Cs-134	<6.37E-03	0.00E+00	6.37E-03
		Cs-137	<9.08E-03	0.00E+00	9.08E-03
		Be-7	<5.80E-02	0.00E+00	5.80E-02
		K-40	4.56E-01	1.44E-01	2.81E-02
426382	10/17/2016 - 10/24/2016	I-131	<8.55E-03	0.00E+00	8.55E-03
		Cs-134	<7.56E-03	0.00E+00	7.56E-03
		Cs-137	<7.18E-03	0.00E+00	7.18E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	3.26E-01	1.24E-01	3.04E-02
427067	10/24/2016 - 10/31/2016	I-131	<8.23E-03	0.00E+00	8.23E-03
		Cs-134	<8.72E-03	0.00E+00	8.72E-03
		Cs-137	<7.17E-03	0.00E+00	7.17E-03
		Be-7	<5.02E-02	0.00E+00	5.02E-02
		K-40	3.61E-01	1.45E-01	1.47E-01
427734	10/31/2016 - 11/7/2016	I-131	<7.51E-03	0.00E+00	7.51E-03
		Cs-134	<8.15E-03	0.00E+00	8.15E-03
		Cs-137	<8.20E-03	0.00E+00	8.20E-03
		Be-7	<6.25E-02	0.00E+00	6.25E-02
		K-40	2.83E-01	1.32E-01	1.48E-01
428227	11/7/2016 - 11/14/2016	I-131	<8.17E-03	0.00E+00	8.17E-03
		Cs-134	<8.39E-03	0.00E+00	8.39E-03
		Cs-137	<8.33E-03	0.00E+00	8.33E-03
		Be-7	<5.42E-02	0.00E+00	5.42E-02
		K-40	2.73E-01	1.38E-01	1.56E-01
428910	11/14/2016 - 11/21/2016	I-131	<9.25E-03	0.00E+00	9.25E-03
		Cs-134	<9.36E-03	0.00E+00	9.36E-03
		Cs-137	<5.54E-03	0.00E+00	5.54E-03
		Be-7	<6.13E-02	0.00E+00	6.13E-02
		K-40	3.78E-01	1.29E-01	2.77E-02
429413	11/21/2016 - 11/28/2016	I-131	<8.98E-03	0.00E+00	8.98E-03
		Cs-134	<5.76E-03	0.00E+00	5.76E-03
		Cs-137	<1.00E-02	0.00E+00	1.00E-02
		Be-7	<5.97E-02	0.00E+00	5.97E-02
		K-40	4.04E-01	1.39E-01	3.04E-02
429972	11/28/2016 - 12/5/2016	I-131	<8.97E-03	0.00E+00	8.97E-03
		Cs-134	<7.87E-03	0.00E+00	7.87E-03
		Cs-137	<7.05E-03	0.00E+00	7.05E-03
		Be-7	<5.33E-02	0.00E+00	5.33E-02
		K-40	3.63E-01	1.25E-01	2.73E-02
430591	12/5/2016 - 12/12/2016	I-131	<8.30E-03	0.00E+00	8.30E-03
		Cs-134	<5.89E-03	0.00E+00	5.89E-03
		Cs-137	<6.57E-03	0.00E+00	6.57E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 103 [ INDICATOR - NE @ 4.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430591	12/5/2016 - 12/12/2016	Be-7	<5.85E-02	0.00E+00	5.85E-02
		K-40	5.53E-01	1.70E-01	1.22E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431080	12/12/2016 - 12/19/2016	I-131	<1.05E-02	0.00E+00	1.05E-02
		Cs-134	<7.99E-03	0.00E+00	7.99E-03
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<4.53E-02	0.00E+00	4.53E-02
		K-40	2.77E-01	1.56E-01	1.97E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431481	12/19/2016 - 12/27/2016	I-131	<6.46E-03	0.00E+00	6.46E-03
		Cs-134	<6.31E-03	0.00E+00	6.31E-03
		Cs-137	<7.19E-03	0.00E+00	7.19E-03
		Be-7	<6.41E-02	0.00E+00	6.41E-02
		K-40	3.63E-01	1.52E-01	1.65E-01

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398710	12/28/2015 - 1/5/2016	I-131	<7.38E-03	0.00E+00	7.38E-03
		Cs-134	<7.22E-03	0.00E+00	7.22E-03
		Cs-137	<8.96E-03	0.00E+00	8.96E-03
		Be-7	<4.02E-02	0.00E+00	4.02E-02
		K-40	2.88E-01	1.10E-01	7.91E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398967	1/5/2016 - 1/11/2016	I-131	<1.33E-02	0.00E+00	1.33E-02
		Cs-134	<9.09E-03	0.00E+00	9.09E-03
		Cs-137	<9.62E-03	0.00E+00	9.62E-03
		Be-7	<8.49E-02	0.00E+00	8.49E-02
		K-40	2.64E-01	1.61E-01	2.10E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
399281	1/11/2016 - 1/18/2016	I-131	<1.48E-02	0.00E+00	1.48E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.42E-02	0.00E+00	1.42E-02
		Be-7	<6.52E-02	0.00E+00	6.52E-02
		K-40	5.40E-01	1.99E-01	4.72E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400023	1/18/2016 - 1/25/2016	I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<1.58E-02	0.00E+00	1.58E-02
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<6.70E-02	0.00E+00	6.70E-02
		K-40	3.63E-01	1.86E-01	1.93E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400384	1/25/2016 - 2/1/2016	I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<7.99E-03	0.00E+00	7.99E-03
		Cs-137	<8.66E-03	0.00E+00	8.66E-03
		Be-7	<5.98E-02	0.00E+00	5.98E-02
		K-40	3.79E-01	1.34E-01	3.02E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401015	2/1/2016 - 2/8/2016	I-131	<7.50E-03	0.00E+00	7.50E-03
		Cs-134	<8.98E-03	0.00E+00	8.98E-03
		Cs-137	<4.53E-03	0.00E+00	4.53E-03
		Be-7	<3.66E-02	0.00E+00	3.66E-02
		K-40	3.33E-01	1.29E-01	9.51E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401376	2/8/2016 - 2/15/2016	I-131	<8.77E-03	0.00E+00	8.77E-03
		Cs-134	<8.76E-03	0.00E+00	8.76E-03
		Cs-137	<1.70E-03	0.00E+00	1.70E-03
		Be-7	<5.19E-02	0.00E+00	5.19E-02
		K-40	3.47E-01	1.24E-01	2.85E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401822	2/15/2016 - 2/22/2016	I-131	<6.85E-03	0.00E+00	6.85E-03
		Cs-134	<6.55E-03	0.00E+00	6.55E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401822	2/15/2016 - 2/22/2016	Cs-137	<8.76E-03	0.00E+00	8.76E-03
		Be-7	<4.78E-02	0.00E+00	4.78E-02
		K-40	3.96E-01	1.33E-01	2.82E-02
402342	2/22/2016 - 2/29/2016	I-131	<7.96E-03	0.00E+00	7.96E-03
		Cs-134	<7.39E-03	0.00E+00	7.39E-03
		Cs-137	<6.94E-03	0.00E+00	6.94E-03
		Be-7	<6.78E-02	0.00E+00	6.78E-02
		K-40	3.56E-01	1.33E-01	1.10E-01
403064	2/29/2016 - 3/7/2016	I-131	<7.03E-03	0.00E+00	7.03E-03
		Cs-134	<7.77E-03	0.00E+00	7.77E-03
		Cs-137	<8.45E-03	0.00E+00	8.45E-03
		Be-7	<4.38E-02	0.00E+00	4.38E-02
		K-40	2.92E-01	1.38E-01	1.55E-01
404552	3/7/2016 - 3/14/2016	I-131	<8.65E-03	0.00E+00	8.65E-03
		Cs-134	<6.75E-03	0.00E+00	6.75E-03
		Cs-137	<6.40E-03	0.00E+00	6.40E-03
		Be-7	<5.39E-02	0.00E+00	5.39E-02
		K-40	2.97E-01	1.23E-01	1.05E-01
405425	3/14/2016 - 3/21/2016	I-131	<6.93E-03	0.00E+00	6.93E-03
		Cs-134	<5.06E-03	0.00E+00	5.06E-03
		Cs-137	<7.29E-03	0.00E+00	7.29E-03
		Be-7	<5.19E-02	0.00E+00	5.19E-02
		K-40	2.52E-01	1.27E-01	1.38E-01
406055	3/21/2016 - 3/28/2016	I-131	<6.46E-03	0.00E+00	6.46E-03
		Cs-134	<5.09E-03	0.00E+00	5.09E-03
		Cs-137	<5.45E-03	0.00E+00	5.45E-03
		Be-7	<5.04E-02	0.00E+00	5.04E-02
		K-40	2.78E-01	1.16E-01	9.25E-02
406406	3/28/2016 - 4/4/2016	I-131	<1.05E-02	0.00E+00	1.05E-02
		Cs-134	<4.63E-03	0.00E+00	4.63E-03
		Cs-137	<7.44E-03	0.00E+00	7.44E-03
		Be-7	<7.29E-02	0.00E+00	7.29E-02
		K-40	4.56E-01	1.45E-01	2.88E-02
407583	4/4/2016 - 4/11/2016	I-131	<8.33E-03	0.00E+00	8.33E-03
		Cs-134	<6.85E-03	0.00E+00	6.85E-03
		Cs-137	<5.60E-03	0.00E+00	5.60E-03
		Be-7	<5.51E-02	0.00E+00	5.51E-02
		K-40	5.10E-01	1.59E-01	1.02E-01
408150	4/11/2016 - 4/18/2016	I-131	<7.85E-03	0.00E+00	7.85E-03
		Cs-134	<6.55E-03	0.00E+00	6.55E-03
		Cs-137	<4.58E-03	0.00E+00	4.58E-03
		Be-7	<5.55E-02	0.00E+00	5.55E-02
		K-40	3.81E-01	1.36E-01	9.67E-02
409471	4/18/2016 - 4/25/2016	I-131	<8.16E-03	0.00E+00	8.16E-03
		Cs-134	<6.15E-03	0.00E+00	6.15E-03
		Cs-137	<8.97E-03	0.00E+00	8.97E-03
		Be-7	<4.96E-02	0.00E+00	4.96E-02
		K-40	3.33E-01	1.33E-01	1.12E-01
409801	4/25/2016 - 5/2/2016	I-131	<8.09E-03	0.00E+00	8.09E-03
		Cs-134	<4.70E-03	0.00E+00	4.70E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
409801	4/25/2016 - 5/2/2016	Cs-137	<8.25E-03	0.00E+00	8.25E-03
		Be-7	<5.67E-02	0.00E+00	5.67E-02
		K-40	4.58E-01	1.54E-01	1.04E-01
410972	5/2/2016 - 5/9/2016	I-131	<3.87E-03	0.00E+00	3.87E-03
		Cs-134	<7.82E-03	0.00E+00	7.82E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<5.52E-02	0.00E+00	5.52E-02
		K-40	3.37E-01	1.23E-01	2.85E-02
411450	5/9/2016 - 5/16/2016	I-131	<8.57E-03	0.00E+00	8.57E-03
		Cs-134	<7.98E-03	0.00E+00	7.98E-03
		Cs-137	<7.16E-03	0.00E+00	7.16E-03
		Be-7	<5.71E-02	0.00E+00	5.71E-02
		K-40	<2.97E-01	0.00E+00	2.97E-01
411782	5/16/2016 - 5/23/2016	I-131	<8.12E-03	0.00E+00	8.12E-03
		Cs-134	<5.60E-03	0.00E+00	5.60E-03
		Cs-137	<1.26E-02	0.00E+00	1.26E-02
		Be-7	<6.22E-02	0.00E+00	6.22E-02
		K-40	3.37E-01	1.25E-01	2.95E-02
412240	5/23/2016 - 5/31/2016	I-131	<7.32E-03	0.00E+00	7.32E-03
		Cs-134	<5.77E-03	0.00E+00	5.77E-03
		Cs-137	<6.56E-03	0.00E+00	6.56E-03
		Be-7	<3.26E-02	0.00E+00	3.26E-02
		K-40	3.44E-01	1.23E-01	8.20E-02
412760	5/31/2016 - 6/6/2016	I-131	<6.19E-03	0.00E+00	6.19E-03
		Cs-134	<1.01E-02	0.00E+00	1.01E-02
		Cs-137	<6.43E-03	0.00E+00	6.43E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02
		K-40	5.91E-01	1.89E-01	1.45E-01
413371	6/6/2016 - 6/13/2016	I-131	<8.73E-03	0.00E+00	8.73E-03
		Cs-134	<7.79E-03	0.00E+00	7.79E-03
		Cs-137	<6.57E-03	0.00E+00	6.57E-03
		Be-7	<2.87E-02	0.00E+00	2.87E-02
		K-40	4.19E-01	1.48E-01	1.18E-01
413911	6/13/2016 - 6/20/2016	I-131	<8.36E-03	0.00E+00	8.36E-03
		Cs-134	<7.38E-03	0.00E+00	7.38E-03
		Cs-137	<7.57E-03	0.00E+00	7.57E-03
		Be-7	<6.22E-02	0.00E+00	6.22E-02
		K-40	2.97E-01	1.12E-01	2.68E-02
415047	6/20/2016 - 6/27/2016	I-131	<8.49E-03	0.00E+00	8.49E-03
		Cs-134	<8.83E-03	0.00E+00	8.83E-03
		Cs-137	<8.88E-03	0.00E+00	8.88E-03
		Be-7	<4.33E-02	0.00E+00	4.33E-02
		K-40	4.09E-01	1.50E-01	1.27E-01
415444	6/27/2016 - 7/5/2016	I-131	<6.29E-03	0.00E+00	6.29E-03
		Cs-134	<7.48E-03	0.00E+00	7.48E-03
		Cs-137	<5.74E-03	0.00E+00	5.74E-03
		Be-7	<3.70E-02	0.00E+00	3.70E-02
		K-40	3.96E-01	1.40E-01	1.27E-01
416423	7/5/2016 - 7/11/2016	I-131	<9.26E-03	0.00E+00	9.26E-03
		Cs-134	<6.85E-03	0.00E+00	6.85E-03





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
416423	7/5/2016 - 7/11/2016	Cs-137	<8.52E-03	0.00E+00	8.52E-03
		Be-7	<3.31E-02	0.00E+00	3.31E-02
		K-40	5.25E-01	1.77E-01	1.31E-01
417040	7/11/2016 - 7/18/2016	I-131	<8.17E-03	0.00E+00	8.17E-03
		Cs-134	<5.57E-03	0.00E+00	5.57E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<6.55E-02	0.00E+00	6.55E-02
		K-40	3.97E-01	1.59E-01	1.67E-01
417429	7/18/2016 - 7/25/2016	I-131	<7.36E-03	0.00E+00	7.36E-03
		Cs-134	<7.90E-03	0.00E+00	7.90E-03
		Cs-137	<5.75E-03	0.00E+00	5.75E-03
		Be-7	<6.94E-02	0.00E+00	6.94E-02
		K-40	4.02E-01	1.64E-01	1.80E-01
417824	7/25/2016 - 8/1/2016	I-131	<8.20E-03	0.00E+00	8.20E-03
		Cs-134	<4.45E-03	0.00E+00	4.45E-03
		Cs-137	<5.52E-03	0.00E+00	5.52E-03
		Be-7	<4.58E-02	0.00E+00	4.58E-02
		K-40	4.37E-01	1.49E-01	1.15E-01
418296	8/1/2016 - 8/8/2016	I-131	<8.10E-03	0.00E+00	8.10E-03
		Cs-134	<8.66E-03	0.00E+00	8.66E-03
		Cs-137	<7.30E-03	0.00E+00	7.30E-03
		Be-7	<7.53E-02	0.00E+00	7.53E-02
		K-40	4.55E-01	1.62E-01	1.33E-01
419018	8/8/2016 - 8/15/2016	I-131	<6.93E-03	0.00E+00	6.93E-03
		Cs-134	<7.70E-03	0.00E+00	7.70E-03
		Cs-137	<4.22E-03	0.00E+00	4.22E-03
		Be-7	<4.46E-02	0.00E+00	4.46E-02
		K-40	3.24E-01	1.17E-01	2.66E-02
419514	8/15/2016 - 8/22/2016	I-131	<7.52E-03	0.00E+00	7.52E-03
		Cs-134	<9.01E-03	0.00E+00	9.01E-03
		Cs-137	<8.71E-03	0.00E+00	8.71E-03
		Be-7	<3.68E-02	0.00E+00	3.68E-02
		K-40	3.81E-01	1.32E-01	2.87E-02
420045	8/22/2016 - 8/29/2016	I-131	<8.91E-03	0.00E+00	8.91E-03
		Cs-134	<7.55E-03	0.00E+00	7.55E-03
		Cs-137	<9.39E-03	0.00E+00	9.39E-03
		Be-7	<8.77E-02	0.00E+00	8.77E-02
		K-40	4.71E-01	1.51E-01	3.04E-02
420592	8/29/2016 - 9/6/2016	I-131	<8.08E-03	0.00E+00	8.08E-03
		Cs-134	<6.05E-03	0.00E+00	6.05E-03
		Cs-137	<8.09E-03	0.00E+00	8.09E-03
		Be-7	<3.95E-02	0.00E+00	3.95E-02
		K-40	4.12E-01	1.42E-01	1.17E-01
421452	9/6/2016 - 9/12/2016	I-131	<1.04E-02	0.00E+00	1.04E-02
		Cs-134	<6.50E-03	0.00E+00	6.50E-03
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<7.20E-02	0.00E+00	7.20E-02
		K-40	4.69E-01	1.70E-01	1.52E-01
422591	9/12/2016 - 9/19/2016	I-131	<8.01E-03	0.00E+00	8.01E-03
		Cs-134	<7.04E-03	0.00E+00	7.04E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
422591	9/12/2016 - 9/19/2016	Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<4.77E-02	0.00E+00	4.77E-02
		K-40	4.73E-01	1.69E-01	1.64E-01
423336	9/19/2016 - 9/26/2016	I-131	<8.67E-03	0.00E+00	8.67E-03
		Cs-134	<5.40E-03	0.00E+00	5.40E-03
		Cs-137	<8.81E-03	0.00E+00	8.81E-03
		Be-7	<4.24E-02	0.00E+00	4.24E-02
		K-40	<3.21E-01	0.00E+00	3.21E-01
424471	9/26/2016 - 10/3/2016	I-131	<8.18E-03	0.00E+00	8.18E-03
		Cs-134	<8.03E-03	0.00E+00	8.03E-03
		Cs-137	<7.19E-03	0.00E+00	7.19E-03
		Be-7	<5.44E-02	0.00E+00	5.44E-02
		K-40	3.64E-01	1.43E-01	1.37E-01
425467	10/3/2016 - 10/10/2016	I-131	<8.24E-03	0.00E+00	8.24E-03
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<7.68E-03	0.00E+00	7.68E-03
		Be-7	<4.61E-02	0.00E+00	4.61E-02
		K-40	3.54E-01	1.31E-01	1.00E-01
426012	10/10/2016 - 10/17/2016	I-131	<6.30E-03	0.00E+00	6.30E-03
		Cs-134	<5.30E-03	0.00E+00	5.30E-03
		Cs-137	<7.35E-03	0.00E+00	7.35E-03
		Be-7	<3.64E-02	0.00E+00	3.64E-02
		K-40	3.98E-01	1.34E-01	2.84E-02
426383	10/17/2016 - 10/24/2016	I-131	<9.54E-03	0.00E+00	9.54E-03
		Cs-134	<6.93E-03	0.00E+00	6.93E-03
		Cs-137	<8.61E-03	0.00E+00	8.61E-03
		Be-7	<5.51E-02	0.00E+00	5.51E-02
		K-40	3.93E-01	1.48E-01	1.36E-01
427068	10/24/2016 - 10/31/2016	I-131	<8.19E-03	0.00E+00	8.19E-03
		Cs-134	<9.07E-03	0.00E+00	9.07E-03
		Cs-137	<8.45E-03	0.00E+00	8.45E-03
		Be-7	<4.61E-02	0.00E+00	4.61E-02
		K-40	3.93E-01	1.48E-01	1.37E-01
427735	10/31/2016 - 11/7/2016	I-131	<5.95E-03	0.00E+00	5.95E-03
		Cs-134	<5.81E-03	0.00E+00	5.81E-03
		Cs-137	<8.48E-03	0.00E+00	8.48E-03
		Be-7	<4.18E-02	0.00E+00	4.18E-02
		K-40	<2.59E-01	0.00E+00	2.59E-01
428228	11/7/2016 - 11/14/2016	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<7.59E-03	0.00E+00	7.59E-03
		Cs-137	<7.20E-03	0.00E+00	7.20E-03
		Be-7	<6.52E-02	0.00E+00	6.52E-02
		K-40	4.05E-01	1.40E-01	3.05E-02
428911	11/14/2016 - 11/21/2016	I-131	<1.05E-02	0.00E+00	1.05E-02
		Cs-134	<9.49E-03	0.00E+00	9.49E-03
		Cs-137	<7.52E-03	0.00E+00	7.52E-03
		Be-7	<6.07E-02	0.00E+00	6.07E-02
		K-40	3.55E-01	1.28E-01	2.92E-02
429414	11/21/2016 - 11/28/2016	I-131	<7.89E-03	0.00E+00	7.89E-03
		Cs-134	<6.44E-03	0.00E+00	6.44E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429414	11/21/2016 - 11/28/2016	Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<2.87E-02	0.00E+00	2.87E-02
		K-40	3.75E-01	1.42E-01	1.24E-01
429973	11/28/2016 - 12/5/2016	I-131	<6.27E-03	0.00E+00	6.27E-03
		Cs-134	<7.35E-03	0.00E+00	7.35E-03
		Cs-137	<6.20E-03	0.00E+00	6.20E-03
		Be-7	<3.99E-02	0.00E+00	3.99E-02
		K-40	3.94E-01	1.40E-01	1.12E-01
430592	12/5/2016 - 12/12/2016	I-131	<7.95E-03	0.00E+00	7.95E-03
		Cs-134	<5.99E-03	0.00E+00	5.99E-03
		Cs-137	<9.83E-03	0.00E+00	9.83E-03
		Be-7	<5.95E-02	0.00E+00	5.95E-02
		K-40	4.46E-01	1.43E-01	2.88E-02
431081	12/12/2016 - 12/19/2016	I-131	<7.42E-03	0.00E+00	7.42E-03
		Cs-134	<6.41E-03	0.00E+00	6.41E-03
		Cs-137	<7.96E-03	0.00E+00	7.96E-03
		Be-7	<6.84E-02	0.00E+00	6.84E-02
		K-40	4.18E-01	1.37E-01	2.83E-02
431482	12/19/2016 - 12/27/2016	I-131	<8.89E-03	0.00E+00	8.89E-03
		Cs-134	<5.88E-03	0.00E+00	5.88E-03
		Cs-137	<8.39E-03	0.00E+00	8.39E-03
		Be-7	<6.46E-02	0.00E+00	6.46E-02
		K-40	4.03E-01	1.43E-01	1.27E-01
<b>Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]</b>					
398711	12/28/2015 - 1/5/2016	I-131	<6.94E-03	0.00E+00	6.94E-03
		Cs-134	<7.56E-03	0.00E+00	7.56E-03
		Cs-137	<7.94E-03	0.00E+00	7.94E-03
		Be-7	<3.92E-02	0.00E+00	3.92E-02
		K-40	4.37E-01	1.42E-01	1.02E-01
398968	1/5/2016 - 1/11/2016	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<7.07E-03	0.00E+00	7.07E-03
		Cs-137	<5.38E-03	0.00E+00	5.38E-03
		Be-7	<6.60E-02	0.00E+00	6.60E-02
		K-40	4.58E-01	1.65E-01	1.18E-01
399282	1/11/2016 - 1/18/2016	I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<9.44E-03	0.00E+00	9.44E-03
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	6.20E-01	2.43E-01	2.36E-01
400024	1/18/2016 - 1/25/2016	I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<1.35E-02	0.00E+00	1.35E-02
		Cs-137	<1.46E-02	0.00E+00	1.46E-02
		Be-7	<9.42E-02	0.00E+00	9.42E-02
		K-40	4.74E-01	2.22E-01	2.40E-01
400385	1/25/2016 - 2/1/2016	I-131	<7.50E-03	0.00E+00	7.50E-03
		Cs-134	<9.13E-03	0.00E+00	9.13E-03
		Cs-137	<8.21E-03	0.00E+00	8.21E-03
		Be-7	<4.93E-02	0.00E+00	4.93E-02
		K-40	4.06E-01	1.37E-01	8.42E-02
401016	2/1/2016 - 2/8/2016	Nuclide	Activity	2 Sigma Error	MDA
		I-131	<7.58E-03	0.00E+00	7.58E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401016	2/1/2016 - 2/8/2016	Cs-134	<7.76E-03	0.00E+00	7.76E-03
		Cs-137	<9.08E-03	0.00E+00	9.08E-03
		Be-7	<7.08E-02	0.00E+00	7.08E-02
		K-40	4.55E-01	1.53E-01	1.10E-01
401377	2/8/2016 - 2/15/2016	I-131	<7.34E-03	0.00E+00	7.34E-03
		Cs-134	<5.77E-03	0.00E+00	5.77E-03
		Cs-137	<7.83E-03	0.00E+00	7.83E-03
		Be-7	<4.60E-02	0.00E+00	4.60E-02
		K-40	4.35E-01	1.45E-01	9.25E-02
401823	2/15/2016 - 2/22/2016	I-131	<8.01E-03	0.00E+00	8.01E-03
		Cs-134	<7.28E-03	0.00E+00	7.28E-03
		Cs-137	<6.48E-03	0.00E+00	6.48E-03
		Be-7	<5.50E-02	0.00E+00	5.50E-02
		K-40	3.94E-01	1.33E-01	2.81E-02
402343	2/22/2016 - 2/29/2016	I-131	<9.20E-03	0.00E+00	9.20E-03
		Cs-134	<7.34E-03	0.00E+00	7.34E-03
		Cs-137	<9.13E-03	0.00E+00	9.13E-03
		Be-7	<6.58E-02	0.00E+00	6.58E-02
		K-40	3.73E-01	1.41E-01	1.11E-01
403065	2/29/2016 - 3/7/2016	I-131	<8.48E-03	0.00E+00	8.48E-03
		Cs-134	<7.54E-03	0.00E+00	7.54E-03
		Cs-137	<6.72E-03	0.00E+00	6.72E-03
		Be-7	<7.23E-02	0.00E+00	7.23E-02
		K-40	5.09E-01	1.61E-01	1.05E-01
404553	3/7/2016 - 3/14/2016	I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<7.00E-03	0.00E+00	7.00E-03
		Cs-137	<7.98E-03	0.00E+00	7.98E-03
		Be-7	<7.04E-02	0.00E+00	7.04E-02
		K-40	3.83E-01	1.44E-01	1.12E-01
405426	3/14/2016 - 3/21/2016	I-131	<6.88E-03	0.00E+00	6.88E-03
		Cs-134	<7.06E-03	0.00E+00	7.06E-03
		Cs-137	<6.71E-03	0.00E+00	6.71E-03
		Be-7	<5.92E-02	0.00E+00	5.92E-02
		K-40	3.14E-01	1.18E-01	2.83E-02
406056	3/21/2016 - 3/28/2016	I-131	<6.19E-03	0.00E+00	6.19E-03
		Cs-134	<8.42E-03	0.00E+00	8.42E-03
		Cs-137	<6.11E-03	0.00E+00	6.11E-03
		Be-7	<3.17E-02	0.00E+00	3.17E-02
		K-40	4.55E-01	1.47E-01	3.01E-02
406407	3/28/2016 - 4/4/2016	I-131	<8.85E-03	0.00E+00	8.85E-03
		Cs-134	<8.49E-03	0.00E+00	8.49E-03
		Cs-137	<6.81E-03	0.00E+00	6.81E-03
		Be-7	<5.78E-02	0.00E+00	5.78E-02
		K-40	3.70E-01	1.31E-01	2.95E-02
407584	4/4/2016 - 4/11/2016	I-131	<8.47E-03	0.00E+00	8.47E-03
		Cs-134	<7.00E-03	0.00E+00	7.00E-03
		Cs-137	<8.70E-03	0.00E+00	8.70E-03
		Be-7	<5.22E-02	0.00E+00	5.22E-02
		K-40	3.20E-01	1.30E-01	1.11E-01
408151	4/11/2016 - 4/18/2016	Nuclide	Activity	2 Sigma Error	MDA
		I-131	<8.13E-03	0.00E+00	8.13E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
408151	4/11/2016 - 4/18/2016	Cs-134	<7.67E-03	0.00E+00	7.67E-03
		Cs-137	<8.12E-03	0.00E+00	8.12E-03
		Be-7	<5.65E-02	0.00E+00	5.65E-02
		K-40	3.65E-01	1.33E-01	3.09E-02
409472	4/18/2016 - 4/25/2016	I-131	<8.83E-03	0.00E+00	8.83E-03
		Cs-134	<7.48E-03	0.00E+00	7.48E-03
		Cs-137	<7.03E-03	0.00E+00	7.03E-03
		Be-7	<5.41E-02	0.00E+00	5.41E-02
		K-40	3.59E-01	1.35E-01	1.15E-01
409802	4/25/2016 - 5/2/2016	I-131	<8.68E-03	0.00E+00	8.68E-03
		Cs-134	<5.93E-03	0.00E+00	5.93E-03
		Cs-137	<9.67E-03	0.00E+00	9.67E-03
		Be-7	<7.26E-02	0.00E+00	7.26E-02
		K-40	4.16E-01	1.66E-01	1.70E-01
410973	5/2/2016 - 5/9/2016	I-131	<5.66E-03	0.00E+00	5.66E-03
		Cs-134	<8.41E-03	0.00E+00	8.41E-03
		Cs-137	<7.55E-03	0.00E+00	7.55E-03
		Be-7	<4.77E-02	0.00E+00	4.77E-02
		K-40	3.26E-01	1.32E-01	1.17E-01
411451	5/9/2016 - 5/16/2016	I-131	<6.92E-03	0.00E+00	6.92E-03
		Cs-134	<7.12E-03	0.00E+00	7.12E-03
		Cs-137	<4.97E-03	0.00E+00	4.97E-03
		Be-7	<6.46E-02	0.00E+00	6.46E-02
		K-40	4.48E-01	1.55E-01	1.08E-01
411783	5/16/2016 - 5/23/2016	I-131	<8.07E-03	0.00E+00	8.07E-03
		Cs-134	<6.41E-03	0.00E+00	6.41E-03
		Cs-137	<8.59E-03	0.00E+00	8.59E-03
		Be-7	<5.08E-02	0.00E+00	5.08E-02
		K-40	<2.61E-01	0.00E+00	2.61E-01
412241	5/23/2016 - 5/31/2016	I-131	<6.85E-03	0.00E+00	6.85E-03
		Cs-134	<8.69E-03	0.00E+00	8.69E-03
		Cs-137	<8.40E-03	0.00E+00	8.40E-03
		Be-7	<7.16E-02	0.00E+00	7.16E-02
		K-40	3.43E-01	1.33E-01	1.17E-01
412761	5/31/2016 - 6/6/2016	I-131	<8.27E-03	0.00E+00	8.27E-03
		Cs-134	<8.04E-03	0.00E+00	8.04E-03
		Cs-137	<1.23E-02	0.00E+00	1.23E-02
		Be-7	<6.36E-02	0.00E+00	6.36E-02
		K-40	4.75E-01	1.58E-01	3.30E-02
413372	6/6/2016 - 6/13/2016	I-131	<6.27E-03	0.00E+00	6.27E-03
		Cs-134	<6.03E-03	0.00E+00	6.03E-03
		Cs-137	<5.81E-03	0.00E+00	5.81E-03
		Be-7	<6.27E-02	0.00E+00	6.27E-02
		K-40	2.63E-01	1.18E-01	1.10E-01
413912	6/13/2016 - 6/20/2016	I-131	<7.05E-03	0.00E+00	7.05E-03
		Cs-134	<5.13E-03	0.00E+00	5.13E-03
		Cs-137	<6.38E-03	0.00E+00	6.38E-03
		Be-7	<2.81E-02	0.00E+00	2.81E-02
		K-40	4.41E-01	1.46E-01	9.89E-02
415048	6/20/2016 - 6/27/2016	Nuclide	Activity	2 Sigma Error	MDA
		I-131	<9.16E-03	0.00E+00	9.16E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
415048	6/20/2016 - 6/27/2016	Cs-134	<8.65E-03	0.00E+00	8.65E-03
		Cs-137	<7.42E-03	0.00E+00	7.42E-03
		Be-7	<6.86E-02	0.00E+00	6.86E-02
		K-40	3.60E-01	1.48E-01	1.50E-01
415445	6/27/2016 - 7/5/2016	I-131	<8.17E-03	0.00E+00	8.17E-03
		Cs-134	<5.63E-03	0.00E+00	5.63E-03
		Cs-137	<6.27E-03	0.00E+00	6.27E-03
		Be-7	<4.48E-02	0.00E+00	4.48E-02
		K-40	3.90E-01	1.39E-01	1.15E-01
416424	7/5/2016 - 7/11/2016	I-131	<7.54E-03	0.00E+00	7.54E-03
		Cs-134	<9.29E-03	0.00E+00	9.29E-03
		Cs-137	<5.10E-03	0.00E+00	5.10E-03
		Be-7	<7.35E-02	0.00E+00	7.35E-02
		K-40	3.23E-01	1.43E-01	1.38E-01
417041	7/11/2016 - 7/18/2016	I-131	<9.42E-03	0.00E+00	9.42E-03
		Cs-134	<7.72E-03	0.00E+00	7.72E-03
		Cs-137	<5.62E-03	0.00E+00	5.62E-03
		Be-7	<6.44E-02	0.00E+00	6.44E-02
		K-40	3.55E-01	1.24E-01	2.75E-02
417430	7/18/2016 - 7/25/2016	I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<8.76E-03	0.00E+00	8.76E-03
		Cs-137	<8.99E-03	0.00E+00	8.99E-03
		Be-7	<4.73E-02	0.00E+00	4.73E-02
		K-40	3.80E-01	1.49E-01	1.30E-01
417825	7/25/2016 - 8/1/2016	I-131	<8.23E-03	0.00E+00	8.23E-03
		Cs-134	<7.23E-03	0.00E+00	7.23E-03
		Cs-137	<4.41E-03	0.00E+00	4.41E-03
		Be-7	<5.40E-02	0.00E+00	5.40E-02
		K-40	3.39E-01	1.22E-01	2.79E-02
418297	8/1/2016 - 8/8/2016	I-131	<9.05E-03	0.00E+00	9.05E-03
		Cs-134	<6.56E-03	0.00E+00	6.56E-03
		Cs-137	<1.69E-03	0.00E+00	1.69E-03
		Be-7	<5.55E-02	0.00E+00	5.55E-02
		K-40	3.49E-01	1.31E-01	9.84E-02
419019	8/8/2016 - 8/15/2016	I-131	<5.54E-03	0.00E+00	5.54E-03
		Cs-134	<8.39E-03	0.00E+00	8.39E-03
		Cs-137	<1.09E-02	0.00E+00	1.09E-02
		Be-7	<4.55E-02	0.00E+00	4.55E-02
		K-40	3.11E-01	1.35E-01	1.33E-01
419515	8/15/2016 - 8/22/2016	I-131	<8.09E-03	0.00E+00	8.09E-03
		Cs-134	<7.31E-03	0.00E+00	7.31E-03
		Cs-137	<4.75E-03	0.00E+00	4.75E-03
		Be-7	<5.75E-02	0.00E+00	5.75E-02
		K-40	3.90E-01	1.34E-01	2.93E-02
420046	8/22/2016 - 8/29/2016	I-131	<8.71E-03	0.00E+00	8.71E-03
		Cs-134	<5.41E-03	0.00E+00	5.41E-03
		Cs-137	<7.52E-03	0.00E+00	7.52E-03
		Be-7	<4.26E-02	0.00E+00	4.26E-02
		K-40	3.99E-01	1.34E-01	2.84E-02
420593	8/29/2016 - 9/6/2016	I-131	<7.53E-03	0.00E+00	7.53E-03



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
420593	8/29/2016 - 9/6/2016	Cs-134	<6.11E-03	0.00E+00	6.11E-03
		Cs-137	<7.61E-03	0.00E+00	7.61E-03
		Be-7	<3.19E-02	0.00E+00	3.19E-02
		K-40	3.98E-01	1.33E-01	9.97E-02
421453	9/6/2016 - 9/12/2016	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<9.42E-03	0.00E+00	9.42E-03
		Cs-137	<8.81E-03	0.00E+00	8.81E-03
		Be-7	<3.19E-02	0.00E+00	3.19E-02
		K-40	4.64E-01	1.60E-01	1.11E-01
422592	9/12/2016 - 9/19/2016	I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<6.82E-03	0.00E+00	6.82E-03
		Cs-137	<9.73E-03	0.00E+00	9.73E-03
		Be-7	<6.49E-02	0.00E+00	6.49E-02
		K-40	3.69E-01	1.52E-01	1.57E-01
423337	9/19/2016 - 9/26/2016	I-131	<7.32E-03	0.00E+00	7.32E-03
		Cs-134	<8.47E-03	0.00E+00	8.47E-03
		Cs-137	<7.15E-03	0.00E+00	7.15E-03
		Be-7	<5.53E-02	0.00E+00	5.53E-02
		K-40	4.35E-01	1.56E-01	1.26E-01
424472	9/26/2016 - 10/3/2016	I-131	<9.34E-03	0.00E+00	9.34E-03
		Cs-134	<6.92E-03	0.00E+00	6.92E-03
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<4.53E-02	0.00E+00	4.53E-02
		K-40	4.88E-01	1.61E-01	1.12E-01
425468	10/3/2016 - 10/10/2016	I-131	<9.89E-03	0.00E+00	9.89E-03
		Cs-134	<6.97E-03	0.00E+00	6.97E-03
		Cs-137	<6.62E-03	0.00E+00	6.62E-03
		Be-7	<5.20E-02	0.00E+00	5.20E-02
		K-40	3.24E-01	1.26E-01	9.55E-02
426013	10/10/2016 - 10/17/2016	I-131	<9.07E-03	0.00E+00	9.07E-03
		Cs-134	<5.90E-03	0.00E+00	5.90E-03
		Cs-137	<8.94E-03	0.00E+00	8.94E-03
		Be-7	<6.10E-02	0.00E+00	6.10E-02
		K-40	3.58E-01	1.73E-01	2.15E-01
426384	10/17/2016 - 10/24/2016	I-131	<6.09E-03	0.00E+00	6.09E-03
		Cs-134	<7.57E-03	0.00E+00	7.57E-03
		Cs-137	<8.75E-03	0.00E+00	8.75E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	4.73E-01	1.61E-01	1.20E-01
427069	10/24/2016 - 10/31/2016	I-131	<8.59E-03	0.00E+00	8.59E-03
		Cs-134	<7.67E-03	0.00E+00	7.67E-03
		Cs-137	<7.88E-03	0.00E+00	7.88E-03
		Be-7	<7.22E-02	0.00E+00	7.22E-02
		K-40	4.39E-01	1.69E-01	1.83E-01
427736	10/31/2016 - 11/7/2016	I-131	<9.14E-03	0.00E+00	9.14E-03
		Cs-134	<6.50E-03	0.00E+00	6.50E-03
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<6.86E-02	0.00E+00	6.86E-02
		K-40	3.30E-01	1.36E-01	1.18E-01
428229	11/7/2016 - 11/14/2016	Nuclide	Activity	2 Sigma Error	MDA
		I-131	<1.26E-02	0.00E+00	1.26E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 121 [ INDICATOR - NE @ 0.47 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428229	11/7/2016 - 11/14/2016	Cs-134	<9.55E-03	0.00E+00	9.55E-03
		Cs-137	<6.32E-03	0.00E+00	6.32E-03
		Be-7	<6.25E-02	0.00E+00	6.25E-02
		K-40	3.29E-01	1.41E-01	1.36E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428912	11/14/2016 - 11/21/2016	I-131	<1.20E-02	0.00E+00	1.20E-02
		Cs-134	<7.21E-03	0.00E+00	7.21E-03
		Cs-137	<8.21E-03	0.00E+00	8.21E-03
		Be-7	<4.72E-02	0.00E+00	4.72E-02
		K-40	5.29E-01	1.63E-01	3.12E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429415	11/21/2016 - 11/28/2016	I-131	<9.61E-03	0.00E+00	9.61E-03
		Cs-134	<5.08E-03	0.00E+00	5.08E-03
		Cs-137	<6.31E-03	0.00E+00	6.31E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	3.55E-01	1.31E-01	3.11E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429974	11/28/2016 - 12/5/2016	I-131	<9.15E-03	0.00E+00	9.15E-03
		Cs-134	<5.56E-03	0.00E+00	5.56E-03
		Cs-137	<9.12E-03	0.00E+00	9.12E-03
		Be-7	<5.58E-02	0.00E+00	5.58E-02
		K-40	4.01E-01	1.42E-01	1.17E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430593	12/5/2016 - 12/12/2016	I-131	<6.46E-03	0.00E+00	6.46E-03
		Cs-134	<6.67E-03	0.00E+00	6.67E-03
		Cs-137	<6.80E-03	0.00E+00	6.80E-03
		Be-7	<6.06E-02	0.00E+00	6.06E-02
		K-40	4.57E-01	1.47E-01	2.95E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431082	12/12/2016 - 12/19/2016	I-131	<9.12E-03	0.00E+00	9.12E-03
		Cs-134	<4.95E-03	0.00E+00	4.95E-03
		Cs-137	<9.34E-03	0.00E+00	9.34E-03
		Be-7	<4.59E-02	0.00E+00	4.59E-02
		K-40	3.09E-01	1.38E-01	1.42E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431483	12/19/2016 - 12/27/2016	I-131	<5.06E-03	0.00E+00	5.06E-03
		Cs-134	<7.32E-03	0.00E+00	7.32E-03
		Cs-137	<5.61E-03	0.00E+00	5.61E-03
		Be-7	<4.74E-02	0.00E+00	4.74E-02
		K-40	3.75E-01	1.36E-01	1.26E-01

## Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398712	12/28/2015 - 1/5/2016	I-131	<5.87E-03	0.00E+00	5.87E-03
		Cs-134	<4.38E-03	0.00E+00	4.38E-03
		Cs-137	<7.58E-03	0.00E+00	7.58E-03
		Be-7	<4.64E-02	0.00E+00	4.64E-02
		K-40	3.12E-01	1.15E-01	9.09E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398969	1/5/2016 - 1/11/2016	I-131	<1.06E-02	0.00E+00	1.06E-02
		Cs-134	<7.70E-03	0.00E+00	7.70E-03
		Cs-137	<7.86E-03	0.00E+00	7.86E-03
		Be-7	<9.11E-02	0.00E+00	9.11E-02
		K-40	5.50E-01	2.05E-01	2.14E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
399283	1/11/2016 - 1/18/2016	I-131	<1.83E-02	0.00E+00	1.83E-02
		Cs-134	<1.06E-02	0.00E+00	1.06E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	5.00E-01	2.24E-01	2.37E-01





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400025	1/18/2016 - 1/25/2016	I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<1.08E-02	0.00E+00	1.08E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	6.07E-01	2.33E-01	1.98E-01
400386	1/25/2016 - 2/1/2016	I-131	<8.14E-03	0.00E+00	8.14E-03
		Cs-134	<9.02E-03	0.00E+00	9.02E-03
		Cs-137	<7.81E-03	0.00E+00	7.81E-03
		Be-7	<4.61E-02	0.00E+00	4.61E-02
		K-40	4.61E-01	1.44E-01	2.78E-02
401017	2/1/2016 - 2/8/2016	I-131	<8.99E-03	0.00E+00	8.99E-03
		Cs-134	<8.01E-03	0.00E+00	8.01E-03
		Cs-137	<7.54E-03	0.00E+00	7.54E-03
		Be-7	<3.73E-02	0.00E+00	3.73E-02
		K-40	5.07E-01	1.55E-01	2.93E-02
401378	2/8/2016 - 2/15/2016	I-131	<1.06E-02	0.00E+00	1.06E-02
		Cs-134	<6.56E-03	0.00E+00	6.56E-03
		Cs-137	<8.16E-03	0.00E+00	8.16E-03
		Be-7	<5.94E-02	0.00E+00	5.94E-02
		K-40	2.94E-01	1.14E-01	2.85E-02
401824	2/15/2016 - 2/22/2016	I-131	<9.34E-03	0.00E+00	9.34E-03
		Cs-134	<8.34E-03	0.00E+00	8.34E-03
		Cs-137	<8.15E-03	0.00E+00	8.15E-03
		Be-7	<4.34E-02	0.00E+00	4.34E-02
		K-40	3.68E-01	1.56E-01	1.72E-01
402344	2/22/2016 - 2/29/2016	I-131	<8.58E-03	0.00E+00	8.58E-03
		Cs-134	<6.25E-03	0.00E+00	6.25E-03
		Cs-137	<4.36E-03	0.00E+00	4.36E-03
		Be-7	<4.59E-02	0.00E+00	4.59E-02
		K-40	4.30E-01	1.46E-01	1.05E-01
403066	2/29/2016 - 3/7/2016	I-131	<6.77E-03	0.00E+00	6.77E-03
		Cs-134	<8.46E-03	0.00E+00	8.46E-03
		Cs-137	<7.54E-03	0.00E+00	7.54E-03
		Be-7	<5.90E-02	0.00E+00	5.90E-02
		K-40	<3.28E-01	0.00E+00	3.28E-01
404554	3/7/2016 - 3/14/2016	I-131	<7.91E-03	0.00E+00	7.91E-03
		Cs-134	<6.90E-03	0.00E+00	6.90E-03
		Cs-137	<7.30E-03	0.00E+00	7.30E-03
		Be-7	<6.18E-02	0.00E+00	6.18E-02
		K-40	4.00E-01	1.51E-01	1.43E-01
405427	3/14/2016 - 3/21/2016	I-131	<9.11E-03	0.00E+00	9.11E-03
		Cs-134	<5.84E-03	0.00E+00	5.84E-03
		Cs-137	<7.93E-03	0.00E+00	7.93E-03
		Be-7	<6.13E-02	0.00E+00	6.13E-02
		K-40	3.47E-01	1.32E-01	1.02E-01
406057	3/21/2016 - 3/28/2016	I-131	<8.98E-03	0.00E+00	8.98E-03
		Cs-134	<6.99E-03	0.00E+00	6.99E-03
		Cs-137	<6.22E-03	0.00E+00	6.22E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	3.96E-01	1.30E-01	2.68E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
406408	3/28/2016 - 4/4/2016	I-131	<7.57E-03	0.00E+00	7.57E-03
		Cs-134	<9.73E-03	0.00E+00	9.73E-03
		Cs-137	<8.74E-03	0.00E+00	8.74E-03
		Be-7	<2.95E-02	0.00E+00	2.95E-02
		K-40	3.86E-01	1.52E-01	1.49E-01
407585	4/4/2016 - 4/11/2016	I-131	<8.92E-03	0.00E+00	8.92E-03
		Cs-134	<8.05E-03	0.00E+00	8.05E-03
		Cs-137	<5.86E-03	0.00E+00	5.86E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	3.19E-01	1.29E-01	1.10E-01
408152	4/11/2016 - 4/18/2016	I-131	<8.18E-03	0.00E+00	8.18E-03
		Cs-134	<7.20E-03	0.00E+00	7.20E-03
		Cs-137	<1.08E-02	0.00E+00	1.08E-02
		Be-7	<5.37E-02	0.00E+00	5.37E-02
		K-40	3.17E-01	1.28E-01	1.12E-01
409473	4/18/2016 - 4/25/2016	I-131	<1.15E-02	0.00E+00	1.15E-02
		Cs-134	<6.24E-03	0.00E+00	6.24E-03
		Cs-137	<5.99E-03	0.00E+00	5.99E-03
		Be-7	<5.04E-02	0.00E+00	5.04E-02
		K-40	4.46E-01	1.45E-01	2.95E-02
409803	4/25/2016 - 5/2/2016	I-131	<5.00E-03	0.00E+00	5.00E-03
		Cs-134	<8.63E-03	0.00E+00	8.63E-03
		Cs-137	<4.74E-03	0.00E+00	4.74E-03
		Be-7	<6.46E-02	0.00E+00	6.46E-02
		K-40	4.64E-01	1.47E-01	2.93E-02
410974	5/2/2016 - 5/9/2016	I-131	<8.23E-03	0.00E+00	8.23E-03
		Cs-134	<6.34E-03	0.00E+00	6.34E-03
		Cs-137	<7.89E-03	0.00E+00	7.89E-03
		Be-7	<5.42E-02	0.00E+00	5.42E-02
		K-40	3.63E-01	1.36E-01	1.07E-01
411452	5/9/2016 - 5/16/2016	I-131	<8.19E-03	0.00E+00	8.19E-03
		Cs-134	<5.75E-03	0.00E+00	5.75E-03
		Cs-137	<7.80E-03	0.00E+00	7.80E-03
		Be-7	<6.08E-02	0.00E+00	6.08E-02
		K-40	3.67E-01	1.47E-01	1.49E-01
411784	5/16/2016 - 5/23/2016	I-131	<6.38E-03	0.00E+00	6.38E-03
		Cs-134	<7.51E-03	0.00E+00	7.51E-03
		Cs-137	<7.95E-03	0.00E+00	7.95E-03
		Be-7	<5.99E-02	0.00E+00	5.99E-02
		K-40	<3.00E-01	0.00E+00	3.00E-01
412242	5/23/2016 - 5/31/2016	I-131	<7.72E-03	0.00E+00	7.72E-03
		Cs-134	<7.13E-03	0.00E+00	7.13E-03
		Cs-137	<7.89E-03	0.00E+00	7.89E-03
		Be-7	<5.02E-02	0.00E+00	5.02E-02
		K-40	3.56E-01	1.19E-01	2.54E-02
412762	5/31/2016 - 6/6/2016	I-131	<9.99E-03	0.00E+00	9.99E-03
		Cs-134	<6.70E-03	0.00E+00	6.70E-03
		Cs-137	<1.29E-02	0.00E+00	1.29E-02
		Be-7	<6.41E-02	0.00E+00	6.41E-02
		K-40	5.10E-01	1.84E-01	1.53E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
413373	6/6/2016 - 6/13/2016	I-131	<8.13E-03	0.00E+00	8.13E-03
		Cs-134	<9.52E-03	0.00E+00	9.52E-03
		Cs-137	<8.16E-03	0.00E+00	8.16E-03
		Be-7	<5.20E-02	0.00E+00	5.20E-02
		K-40	3.64E-01	1.38E-01	9.37E-02
413913	6/13/2016 - 6/20/2016	I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<7.33E-03	0.00E+00	7.33E-03
		Cs-137	<4.76E-03	0.00E+00	4.76E-03
		Be-7	<6.57E-02	0.00E+00	6.57E-02
		K-40	<2.93E-01	0.00E+00	2.93E-01
415049	6/20/2016 - 6/27/2016	I-131	<7.44E-03	0.00E+00	7.44E-03
		Cs-134	<7.85E-03	0.00E+00	7.85E-03
		Cs-137	<6.62E-03	0.00E+00	6.62E-03
		Be-7	<5.16E-02	0.00E+00	5.16E-02
		K-40	4.24E-01	1.63E-01	1.70E-01
415446	6/27/2016 - 7/5/2016	I-131	<5.80E-03	0.00E+00	5.80E-03
		Cs-134	<6.06E-03	0.00E+00	6.06E-03
		Cs-137	<4.95E-03	0.00E+00	4.95E-03
		Be-7	<6.24E-02	0.00E+00	6.24E-02
		K-40	2.37E-01	1.10E-01	1.14E-01
416425	7/5/2016 - 7/11/2016	I-131	<1.25E-02	0.00E+00	1.25E-02
		Cs-134	<8.56E-03	0.00E+00	8.56E-03
		Cs-137	<7.63E-03	0.00E+00	7.63E-03
		Be-7	<4.85E-02	0.00E+00	4.85E-02
		K-40	5.48E-01	1.71E-01	3.30E-02
417042	7/11/2016 - 7/18/2016	I-131	<9.46E-03	0.00E+00	9.46E-03
		Cs-134	<6.70E-03	0.00E+00	6.70E-03
		Cs-137	<7.74E-03	0.00E+00	7.74E-03
		Be-7	<5.73E-02	0.00E+00	5.73E-02
		K-40	3.20E-01	1.42E-01	1.57E-01
417431	7/18/2016 - 7/25/2016	I-131	<9.52E-03	0.00E+00	9.52E-03
		Cs-134	<7.14E-03	0.00E+00	7.14E-03
		Cs-137	<6.77E-03	0.00E+00	6.77E-03
		Be-7	<4.36E-02	0.00E+00	4.36E-02
		K-40	4.43E-01	1.44E-01	2.93E-02
417826	7/25/2016 - 8/1/2016	I-131	<9.58E-03	0.00E+00	9.58E-03
		Cs-134	<6.92E-03	0.00E+00	6.92E-03
		Cs-137	<8.61E-03	0.00E+00	8.61E-03
		Be-7	<2.87E-02	0.00E+00	2.87E-02
		K-40	4.62E-01	1.45E-01	2.84E-02
418298	8/1/2016 - 8/8/2016	I-131	<3.84E-03	0.00E+00	3.84E-03
		Cs-134	<6.89E-03	0.00E+00	6.89E-03
		Cs-137	<7.96E-03	0.00E+00	7.96E-03
		Be-7	<5.48E-02	0.00E+00	5.48E-02
		K-40	4.04E-01	1.56E-01	1.58E-01
419020	8/8/2016 - 8/15/2016	I-131	<7.09E-03	0.00E+00	7.09E-03
		Cs-134	<5.70E-03	0.00E+00	5.70E-03
		Cs-137	<8.85E-03	0.00E+00	8.85E-03
		Be-7	<5.37E-02	0.00E+00	5.37E-02
		K-40	3.24E-01	1.18E-01	2.75E-02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
419516	8/15/2016 - 8/22/2016	I-131	<8.57E-03	0.00E+00	8.57E-03
		Cs-134	<6.64E-03	0.00E+00	6.64E-03
		Cs-137	<8.88E-03	0.00E+00	8.88E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	4.26E-01	1.48E-01	1.05E-01
420047	8/22/2016 - 8/29/2016	I-131	<9.88E-03	0.00E+00	9.88E-03
		Cs-134	<8.55E-03	0.00E+00	8.55E-03
		Cs-137	<8.61E-03	0.00E+00	8.61E-03
		Be-7	<5.50E-02	0.00E+00	5.50E-02
		K-40	3.04E-01	1.16E-01	2.84E-02
420594	8/29/2016 - 9/6/2016	I-131	<7.46E-03	0.00E+00	7.46E-03
		Cs-134	<6.95E-03	0.00E+00	6.95E-03
		Cs-137	<6.23E-03	0.00E+00	6.23E-03
		Be-7	<5.81E-02	0.00E+00	5.81E-02
		K-40	3.65E-01	1.47E-01	1.67E-01
421454	9/6/2016 - 9/12/2016	I-131	<9.19E-03	0.00E+00	9.19E-03
		Cs-134	<8.27E-03	0.00E+00	8.27E-03
		Cs-137	<7.37E-03	0.00E+00	7.37E-03
		Be-7	<6.61E-02	0.00E+00	6.61E-02
		K-40	4.63E-01	1.71E-01	1.57E-01
422593	9/12/2016 - 9/19/2016	I-131	<5.83E-03	0.00E+00	5.83E-03
		Cs-134	<7.17E-03	0.00E+00	7.17E-03
		Cs-137	<7.59E-03	0.00E+00	7.59E-03
		Be-7	<3.75E-02	0.00E+00	3.75E-02
		K-40	4.41E-01	1.57E-01	1.32E-01
423338	9/19/2016 - 9/26/2016	I-131	<7.80E-03	0.00E+00	7.80E-03
		Cs-134	<7.33E-03	0.00E+00	7.33E-03
		Cs-137	<9.11E-03	0.00E+00	9.11E-03
		Be-7	<5.82E-02	0.00E+00	5.82E-02
		K-40	4.38E-01	1.41E-01	2.83E-02
424473	9/26/2016 - 10/3/2016	I-131	<7.78E-03	0.00E+00	7.78E-03
		Cs-134	<7.29E-03	0.00E+00	7.29E-03
		Cs-137	<7.91E-03	0.00E+00	7.91E-03
		Be-7	<4.68E-02	0.00E+00	4.68E-02
		K-40	<2.60E-01	0.00E+00	2.60E-01
425469	10/3/2016 - 10/10/2016	I-131	<7.80E-03	0.00E+00	7.80E-03
		Cs-134	<7.24E-03	0.00E+00	7.24E-03
		Cs-137	<7.84E-03	0.00E+00	7.84E-03
		Be-7	<4.70E-02	0.00E+00	4.70E-02
		K-40	4.11E-01	1.35E-01	2.79E-02
426014	10/10/2016 - 10/17/2016	I-131	<8.77E-03	0.00E+00	8.77E-03
		Cs-134	<7.81E-03	0.00E+00	7.81E-03
		Cs-137	<8.62E-03	0.00E+00	8.62E-03
		Be-7	<5.14E-02	0.00E+00	5.14E-02
		K-40	4.00E-01	1.43E-01	1.08E-01
426385	10/17/2016 - 10/24/2016	I-131	<8.25E-03	0.00E+00	8.25E-03
		Cs-134	<6.78E-03	0.00E+00	6.78E-03
		Cs-137	<7.17E-03	0.00E+00	7.17E-03
		Be-7	<5.02E-02	0.00E+00	5.02E-02
		K-40	3.17E-01	1.62E-01	2.12E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427070	10/24/2016 - 10/31/2016	I-131	<7.40E-03	0.00E+00	7.40E-03
		Cs-134	<8.19E-03	0.00E+00	8.19E-03
		Cs-137	<7.34E-03	0.00E+00	7.34E-03
		Be-7	<5.12E-02	0.00E+00	5.12E-02
		K-40	3.64E-01	1.33E-01	9.05E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427737	10/31/2016 - 11/7/2016	I-131	<7.17E-03	0.00E+00	7.17E-03
		Cs-134	<8.28E-03	0.00E+00	8.28E-03
		Cs-137	<7.73E-03	0.00E+00	7.73E-03
		Be-7	<6.06E-02	0.00E+00	6.06E-02
		K-40	2.85E-01	1.20E-01	1.03E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428230	11/7/2016 - 11/14/2016	I-131	<7.85E-03	0.00E+00	7.85E-03
		Cs-134	<6.33E-03	0.00E+00	6.33E-03
		Cs-137	<9.01E-03	0.00E+00	9.01E-03
		Be-7	<4.70E-02	0.00E+00	4.70E-02
		K-40	3.35E-01	1.28E-01	9.30E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428913	11/14/2016 - 11/21/2016	I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<1.22E-02	0.00E+00	1.22E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<8.11E-02	0.00E+00	8.11E-02
		K-40	6.79E-01	2.33E-01	1.68E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429416	11/21/2016 - 11/28/2016	I-131	<4.80E-03	0.00E+00	4.80E-03
		Cs-134	<6.77E-03	0.00E+00	6.77E-03
		Cs-137	<8.41E-03	0.00E+00	8.41E-03
		Be-7	<5.39E-02	0.00E+00	5.39E-02
		K-40	2.35E-01	1.15E-01	1.20E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429975	11/28/2016 - 12/5/2016	I-131	<8.83E-03	0.00E+00	8.83E-03
		Cs-134	<8.37E-03	0.00E+00	8.37E-03
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<6.32E-02	0.00E+00	6.32E-02
		K-40	2.55E-01	1.21E-01	1.20E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430594	12/5/2016 - 12/12/2016	I-131	<8.66E-03	0.00E+00	8.66E-03
		Cs-134	<5.15E-03	0.00E+00	5.15E-03
		Cs-137	<9.73E-03	0.00E+00	9.73E-03
		Be-7	<6.94E-02	0.00E+00	6.94E-02
		K-40	5.22E-01	1.62E-01	3.15E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431083	12/12/2016 - 12/19/2016	I-131	<7.98E-03	0.00E+00	7.98E-03
		Cs-134	<7.34E-03	0.00E+00	7.34E-03
		Cs-137	<5.64E-03	0.00E+00	5.64E-03
		Be-7	<5.15E-02	0.00E+00	5.15E-02
		K-40	4.07E-01	1.35E-01	2.83E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431484	12/19/2016 - 12/27/2016	I-131	<8.33E-03	0.00E+00	8.33E-03
		Cs-134	<6.82E-03	0.00E+00	6.82E-03
		Cs-137	<4.96E-03	0.00E+00	4.96E-03
		Be-7	<4.84E-02	0.00E+00	4.84E-02
		K-40	3.06E-01	1.32E-01	1.47E-01

## Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398713	12/28/2015 - 1/5/2016	I-131	<6.70E-03	0.00E+00	6.70E-03
		Cs-134	<6.38E-03	0.00E+00	6.38E-03
		Cs-137	<5.67E-03	0.00E+00	5.67E-03
		Be-7	<4.12E-02	0.00E+00	4.12E-02
		K-40	3.66E-01	1.33E-01	1.22E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398970	1/5/2016 - 1/11/2016	I-131	<9.56E-03	0.00E+00	9.56E-03
		Cs-134	<8.89E-03	0.00E+00	8.89E-03
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<7.05E-02	0.00E+00	7.05E-02
		K-40	<3.61E-01	0.00E+00	3.61E-01
399284	1/11/2016 - 1/18/2016	I-131	<1.10E-02	0.00E+00	1.10E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	6.23E-01	2.45E-01	2.37E-01
400026	1/18/2016 - 1/25/2016	I-131	<1.81E-02	0.00E+00	1.81E-02
		Cs-134	<9.56E-03	0.00E+00	9.56E-03
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.23E-01	2.32E-01	1.86E-01
400387	1/25/2016 - 2/1/2016	I-131	<6.57E-03	0.00E+00	6.57E-03
		Cs-134	<8.31E-03	0.00E+00	8.31E-03
		Cs-137	<7.76E-03	0.00E+00	7.76E-03
		Be-7	<4.60E-02	0.00E+00	4.60E-02
		K-40	3.97E-01	1.56E-01	1.66E-01
401018	2/1/2016 - 2/8/2016	I-131	<8.42E-03	0.00E+00	8.42E-03
		Cs-134	<6.47E-03	0.00E+00	6.47E-03
		Cs-137	<5.69E-03	0.00E+00	5.69E-03
		Be-7	<5.14E-02	0.00E+00	5.14E-02
		K-40	6.24E-01	1.79E-01	1.10E-01
401379	2/8/2016 - 2/15/2016	I-131	<7.47E-03	0.00E+00	7.47E-03
		Cs-134	<7.36E-03	0.00E+00	7.36E-03
		Cs-137	<9.15E-03	0.00E+00	9.15E-03
		Be-7	<5.86E-02	0.00E+00	5.86E-02
		K-40	3.90E-01	1.59E-01	1.72E-01
401825	2/15/2016 - 2/22/2016	I-131	<7.41E-03	0.00E+00	7.41E-03
		Cs-134	<6.73E-03	0.00E+00	6.73E-03
		Cs-137	<4.36E-03	0.00E+00	4.36E-03
		Be-7	<6.11E-02	0.00E+00	6.11E-02
		K-40	4.03E-01	1.44E-01	1.19E-01
402345	2/22/2016 - 2/29/2016	I-131	<8.79E-03	0.00E+00	8.79E-03
		Cs-134	<7.02E-03	0.00E+00	7.02E-03
		Cs-137	<5.75E-03	0.00E+00	5.75E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02
		K-40	3.55E-01	1.34E-01	1.07E-01
403067	2/29/2016 - 3/7/2016	I-131	<7.37E-03	0.00E+00	7.37E-03
		Cs-134	<7.83E-03	0.00E+00	7.83E-03
		Cs-137	<4.51E-03	0.00E+00	4.51E-03
		Be-7	<4.75E-02	0.00E+00	4.75E-02
		K-40	<2.84E-01	0.00E+00	2.84E-01
404555	3/7/2016 - 3/14/2016	I-131	<6.30E-03	0.00E+00	6.30E-03
		Cs-134	<6.37E-03	0.00E+00	6.37E-03
		Cs-137	<6.50E-03	0.00E+00	6.50E-03
		Be-7	<5.07E-02	0.00E+00	5.07E-02
		K-40	3.87E-01	1.49E-01	1.43E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405428	3/14/2016 - 3/21/2016	I-131	<6.97E-03	0.00E+00	6.97E-03
		Cs-134	<7.69E-03	0.00E+00	7.69E-03
		Cs-137	<7.29E-03	0.00E+00	7.29E-03
		Be-7	<3.18E-02	0.00E+00	3.18E-02
		K-40	4.49E-01	1.56E-01	1.13E-01
406058	3/21/2016 - 3/28/2016	I-131	<8.81E-03	0.00E+00	8.81E-03
		Cs-134	<7.29E-03	0.00E+00	7.29E-03
		Cs-137	<7.90E-03	0.00E+00	7.90E-03
		Be-7	<5.19E-02	0.00E+00	5.19E-02
		K-40	3.32E-01	1.21E-01	2.81E-02
406409	3/28/2016 - 4/4/2016	I-131	<8.80E-03	0.00E+00	8.80E-03
		Cs-134	<6.50E-03	0.00E+00	6.50E-03
		Cs-137	<8.82E-03	0.00E+00	8.82E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	4.44E-01	1.56E-01	1.15E-01
407586	4/4/2016 - 4/11/2016	I-131	<8.67E-03	0.00E+00	8.67E-03
		Cs-134	<7.15E-03	0.00E+00	7.15E-03
		Cs-137	<7.29E-03	0.00E+00	7.29E-03
		Be-7	<5.71E-02	0.00E+00	5.71E-02
		K-40	3.08E-01	1.21E-01	3.10E-02
408153	4/11/2016 - 4/18/2016	I-131	<7.78E-03	0.00E+00	7.78E-03
		Cs-134	<6.26E-03	0.00E+00	6.26E-03
		Cs-137	<8.90E-03	0.00E+00	8.90E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	5.09E-01	1.59E-01	1.07E-01
409474	4/18/2016 - 4/25/2016	I-131	<5.63E-03	0.00E+00	5.63E-03
		Cs-134	<7.02E-03	0.00E+00	7.02E-03
		Cs-137	<7.44E-03	0.00E+00	7.44E-03
		Be-7	<6.02E-02	0.00E+00	6.02E-02
		K-40	3.02E-01	1.25E-01	1.11E-01
409804	4/25/2016 - 5/2/2016	I-131	<6.69E-03	0.00E+00	6.69E-03
		Cs-134	<9.12E-03	0.00E+00	9.12E-03
		Cs-137	<8.48E-03	0.00E+00	8.48E-03
		Be-7	<5.49E-02	0.00E+00	5.49E-02
		K-40	3.89E-01	1.53E-01	1.58E-01
410975	5/2/2016 - 5/9/2016	I-131	<7.85E-03	0.00E+00	7.85E-03
		Cs-134	<9.08E-03	0.00E+00	9.08E-03
		Cs-137	<9.00E-03	0.00E+00	9.00E-03
		Be-7	<5.78E-02	0.00E+00	5.78E-02
		K-40	4.92E-01	1.58E-01	1.14E-01
411453	5/9/2016 - 5/16/2016	I-131	<8.22E-03	0.00E+00	8.22E-03
		Cs-134	<7.15E-03	0.00E+00	7.15E-03
		Cs-137	<7.75E-03	0.00E+00	7.75E-03
		Be-7	<4.60E-02	0.00E+00	4.60E-02
		K-40	3.55E-01	1.24E-01	2.75E-02
411785	5/16/2016 - 5/23/2016	I-131	<8.38E-03	0.00E+00	8.38E-03
		Cs-134	<6.95E-03	0.00E+00	6.95E-03
		Cs-137	<7.09E-03	0.00E+00	7.09E-03
		Be-7	<7.37E-02	0.00E+00	7.37E-02
		K-40	3.62E-01	1.47E-01	1.39E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
412243	5/23/2016 - 5/31/2016	I-131	<6.40E-03	0.00E+00	6.40E-03
		Cs-134	<7.25E-03	0.00E+00	7.25E-03
		Cs-137	<1.09E-02	0.00E+00	1.09E-02
		Be-7	<3.57E-02	0.00E+00	3.57E-02
		K-40	<3.02E-01	0.00E+00	3.02E-01
412763	5/31/2016 - 6/6/2016	I-131	<1.06E-02	0.00E+00	1.06E-02
		Cs-134	<7.00E-03	0.00E+00	7.00E-03
		Cs-137	<6.75E-03	0.00E+00	6.75E-03
		Be-7	<8.59E-02	0.00E+00	8.59E-02
		K-40	3.77E-01	1.60E-01	1.64E-01
413374	6/6/2016 - 6/13/2016	I-131	<7.76E-03	0.00E+00	7.76E-03
		Cs-134	<6.31E-03	0.00E+00	6.31E-03
		Cs-137	<8.44E-03	0.00E+00	8.44E-03
		Be-7	<4.59E-02	0.00E+00	4.59E-02
		K-40	5.86E-01	1.79E-01	1.47E-01
413914	6/13/2016 - 6/20/2016	I-131	<7.78E-03	0.00E+00	7.78E-03
		Cs-134	<8.29E-03	0.00E+00	8.29E-03
		Cs-137	<6.66E-03	0.00E+00	6.66E-03
		Be-7	<5.57E-02	0.00E+00	5.57E-02
		K-40	2.90E-01	1.45E-01	1.80E-01
415050	6/20/2016 - 6/27/2016	I-131	<5.71E-03	0.00E+00	5.71E-03
		Cs-134	<6.99E-03	0.00E+00	6.99E-03
		Cs-137	<7.40E-03	0.00E+00	7.40E-03
		Be-7	<2.90E-02	0.00E+00	2.90E-02
		K-40	3.29E-01	1.22E-01	2.87E-02
415447	6/27/2016 - 7/5/2016	I-131	<8.01E-03	0.00E+00	8.01E-03
		Cs-134	<5.28E-03	0.00E+00	5.28E-03
		Cs-137	<4.03E-03	0.00E+00	4.03E-03
		Be-7	<5.52E-02	0.00E+00	5.52E-02
		K-40	3.03E-01	1.08E-01	2.49E-02
416426	7/5/2016 - 7/11/2016	I-131	<7.06E-03	0.00E+00	7.06E-03
		Cs-134	<8.55E-03	0.00E+00	8.55E-03
		Cs-137	<7.63E-03	0.00E+00	7.63E-03
		Be-7	<5.41E-02	0.00E+00	5.41E-02
		K-40	4.87E-01	2.02E-01	2.35E-01
417043	7/11/2016 - 7/18/2016	I-131	<7.74E-03	0.00E+00	7.74E-03
		Cs-134	<5.71E-03	0.00E+00	5.71E-03
		Cs-137	<7.75E-03	0.00E+00	7.75E-03
		Be-7	<6.06E-02	0.00E+00	6.06E-02
		K-40	3.52E-01	1.38E-01	1.27E-01
417432	7/18/2016 - 7/25/2016	I-131	<8.44E-03	0.00E+00	8.44E-03
		Cs-134	<8.45E-03	0.00E+00	8.45E-03
		Cs-137	<5.86E-03	0.00E+00	5.86E-03
		Be-7	<6.71E-02	0.00E+00	6.71E-02
		K-40	3.70E-01	1.29E-01	2.87E-02
417827	7/25/2016 - 8/1/2016	I-131	<7.84E-03	0.00E+00	7.84E-03
		Cs-134	<3.53E-03	0.00E+00	3.53E-03
		Cs-137	<8.96E-03	0.00E+00	8.96E-03
		Be-7	<3.56E-02	0.00E+00	3.56E-02
		K-40	3.17E-01	1.17E-01	2.77E-02





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
418299	8/1/2016 - 8/8/2016	I-131	<6.28E-03	0.00E+00	6.28E-03
		Cs-134	<6.56E-03	0.00E+00	6.56E-03
		Cs-137	<6.71E-03	0.00E+00	6.71E-03
		Be-7	<5.17E-02	0.00E+00	5.17E-02
		K-40	3.66E-01	1.27E-01	2.83E-02
419021	8/8/2016 - 8/15/2016	I-131	<9.20E-03	0.00E+00	9.20E-03
		Cs-134	<9.78E-03	0.00E+00	9.78E-03
		Cs-137	<8.78E-03	0.00E+00	8.78E-03
		Be-7	<6.09E-02	0.00E+00	6.09E-02
		K-40	4.18E-01	1.42E-01	3.06E-02
419517	8/15/2016 - 8/22/2016	I-131	<8.03E-03	0.00E+00	8.03E-03
		Cs-134	<7.44E-03	0.00E+00	7.44E-03
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<4.25E-02	0.00E+00	4.25E-02
		K-40	3.82E-01	1.32E-01	2.87E-02
420048	8/22/2016 - 8/29/2016	I-131	<6.78E-03	0.00E+00	6.78E-03
		Cs-134	<6.32E-03	0.00E+00	6.32E-03
		Cs-137	<9.52E-03	0.00E+00	9.52E-03
		Be-7	<4.60E-02	0.00E+00	4.60E-02
		K-40	4.31E-01	1.49E-01	1.16E-01
420595	8/29/2016 - 9/6/2016	I-131	<6.66E-03	0.00E+00	6.66E-03
		Cs-134	<6.24E-03	0.00E+00	6.24E-03
		Cs-137	<7.74E-03	0.00E+00	7.74E-03
		Be-7	<4.01E-02	0.00E+00	4.01E-02
		K-40	3.00E-01	1.24E-01	1.27E-01
421455	9/6/2016 - 9/12/2016	I-131	<1.24E-02	0.00E+00	1.24E-02
		Cs-134	<6.80E-03	0.00E+00	6.80E-03
		Cs-137	<6.53E-03	0.00E+00	6.53E-03
		Be-7	<4.88E-02	0.00E+00	4.88E-02
		K-40	5.08E-01	1.63E-01	3.28E-02
422594	9/12/2016 - 9/19/2016	I-131	<6.29E-03	0.00E+00	6.29E-03
		Cs-134	<7.73E-03	0.00E+00	7.73E-03
		Cs-137	<7.28E-03	0.00E+00	7.28E-03
		Be-7	<1.05E-02	0.00E+00	1.05E-02
		K-40	2.97E-01	1.42E-01	1.67E-01
423339	9/19/2016 - 9/26/2016	I-131	<8.55E-03	0.00E+00	8.55E-03
		Cs-134	<7.58E-03	0.00E+00	7.58E-03
		Cs-137	<7.78E-03	0.00E+00	7.78E-03
		Be-7	<4.10E-02	0.00E+00	4.10E-02
		K-40	2.84E-01	1.43E-01	1.76E-01
424474	9/26/2016 - 10/3/2016	I-131	<9.27E-03	0.00E+00	9.27E-03
		Cs-134	<8.35E-03	0.00E+00	8.35E-03
		Cs-137	<7.49E-03	0.00E+00	7.49E-03
		Be-7	<5.61E-02	0.00E+00	5.61E-02
		K-40	3.76E-01	1.29E-01	2.83E-02
425470	10/3/2016 - 10/10/2016	I-131	<1.08E-02	0.00E+00	1.08E-02
		Cs-134	<7.49E-03	0.00E+00	7.49E-03
		Cs-137	<1.05E-02	0.00E+00	1.05E-02
		Be-7	<5.62E-02	0.00E+00	5.62E-02
		K-40	3.74E-01	1.56E-01	1.66E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
426015	10/10/2016 - 10/17/2016	I-131	<9.77E-03	0.00E+00	9.77E-03
		Cs-134	<7.69E-03	0.00E+00	7.69E-03
		Cs-137	<7.90E-03	0.00E+00	7.90E-03
		Be-7	<3.57E-02	0.00E+00	3.57E-02
		K-40	3.22E-01	1.29E-01	1.08E-01
426386	10/17/2016 - 10/24/2016	I-131	<5.70E-03	0.00E+00	5.70E-03
		Cs-134	<6.44E-03	0.00E+00	6.44E-03
		Cs-137	<6.58E-03	0.00E+00	6.58E-03
		Be-7	<5.52E-02	0.00E+00	5.52E-02
		K-40	4.35E-01	1.64E-01	1.67E-01
427071	10/24/2016 - 10/31/2016	I-131	<9.14E-03	0.00E+00	9.14E-03
		Cs-134	<6.05E-03	0.00E+00	6.05E-03
		Cs-137	<5.83E-03	0.00E+00	5.83E-03
		Be-7	<5.20E-02	0.00E+00	5.20E-02
		K-40	3.58E-01	1.26E-01	2.85E-02
427738	10/31/2016 - 11/7/2016	I-131	<8.14E-03	0.00E+00	8.14E-03
		Cs-134	<7.16E-03	0.00E+00	7.16E-03
		Cs-137	<5.50E-03	0.00E+00	5.50E-03
		Be-7	<5.74E-02	0.00E+00	5.74E-02
		K-40	3.97E-01	1.32E-01	2.76E-02
428231	11/7/2016 - 11/14/2016	I-131	<6.84E-03	0.00E+00	6.84E-03
		Cs-134	<8.96E-03	0.00E+00	8.96E-03
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<5.89E-02	0.00E+00	5.89E-02
		K-40	3.83E-01	1.46E-01	1.24E-01
428914	11/14/2016 - 11/21/2016	I-131	<7.48E-03	0.00E+00	7.48E-03
		Cs-134	<9.02E-03	0.00E+00	9.02E-03
		Cs-137	<9.77E-03	0.00E+00	9.77E-03
		Be-7	<7.26E-02	0.00E+00	7.26E-02
		K-40	5.74E-01	1.90E-01	1.41E-01
429417	11/21/2016 - 11/28/2016	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<6.57E-03	0.00E+00	6.57E-03
		Cs-137	<9.59E-03	0.00E+00	9.59E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	3.47E-01	1.39E-01	1.15E-01
429976	11/28/2016 - 12/5/2016	I-131	<8.27E-03	0.00E+00	8.27E-03
		Cs-134	<6.88E-03	0.00E+00	6.88E-03
		Cs-137	<8.55E-03	0.00E+00	8.55E-03
		Be-7	<5.90E-02	0.00E+00	5.90E-02
		K-40	4.37E-01	1.55E-01	1.27E-01
430595	12/5/2016 - 12/12/2016	I-131	<7.03E-03	0.00E+00	7.03E-03
		Cs-134	<6.69E-03	0.00E+00	6.69E-03
		Cs-137	<5.09E-03	0.00E+00	5.09E-03
		Be-7	<3.24E-02	0.00E+00	3.24E-02
		K-40	4.44E-01	1.49E-01	3.16E-02
431084	12/12/2016 - 12/19/2016	I-131	<9.39E-03	0.00E+00	9.39E-03
		Cs-134	<7.15E-03	0.00E+00	7.15E-03
		Cs-137	<4.98E-03	0.00E+00	4.98E-03
		Be-7	<5.25E-02	0.00E+00	5.25E-02
		K-40	3.33E-01	1.49E-01	1.59E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 133 [ INDICATOR - ENE @ 6.23 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431485	12/19/2016 - 12/27/2016	I-131	<8.14E-03	0.00E+00	8.14E-03
		Cs-134	<1.27E-03	0.00E+00	1.27E-03
		Cs-137	<8.21E-03	0.00E+00	8.21E-03
		Be-7	<4.47E-02	0.00E+00	4.47E-02
		K-40	4.29E-01	1.45E-01	1.13E-01

## Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398714	12/28/2015 - 1/5/2016	I-131	<6.95E-03	0.00E+00	6.95E-03
		Cs-134	<6.38E-03	0.00E+00	6.38E-03
		Cs-137	<7.37E-03	0.00E+00	7.37E-03
		Be-7	<5.76E-02	0.00E+00	5.76E-02
		K-40	3.63E-01	1.36E-01	1.26E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398971	1/5/2016 - 1/11/2016	I-131	<8.28E-03	0.00E+00	8.28E-03
		Cs-134	<7.05E-03	0.00E+00	7.05E-03
		Cs-137	<7.85E-03	0.00E+00	7.85E-03
		Be-7	<6.11E-02	0.00E+00	6.11E-02
		K-40	4.49E-01	1.70E-01	1.46E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
399285	1/11/2016 - 1/18/2016	I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.28E-01	0.00E+00	1.28E-01
		K-40	5.94E-01	2.10E-01	4.74E-02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400027	1/18/2016 - 1/25/2016	I-131	<1.76E-02	0.00E+00	1.76E-02
		Cs-134	<1.18E-02	0.00E+00	1.18E-02
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<1.36E-01	0.00E+00	1.36E-01
		K-40	<4.77E-01	0.00E+00	4.77E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400388	1/25/2016 - 2/1/2016	I-131	<8.89E-03	0.00E+00	8.89E-03
		Cs-134	<7.99E-03	0.00E+00	7.99E-03
		Cs-137	<8.67E-03	0.00E+00	8.67E-03
		Be-7	<5.10E-02	0.00E+00	5.10E-02
		K-40	2.88E-01	1.30E-01	1.27E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401019	2/1/2016 - 2/8/2016	I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<7.96E-03	0.00E+00	7.96E-03
		Cs-137	<8.43E-03	0.00E+00	8.43E-03
		Be-7	<5.86E-02	0.00E+00	5.86E-02
		K-40	<3.34E-01	0.00E+00	3.34E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401380	2/8/2016 - 2/15/2016	I-131	<9.69E-03	0.00E+00	9.69E-03
		Cs-134	<7.18E-03	0.00E+00	7.18E-03
		Cs-137	<8.18E-03	0.00E+00	8.18E-03
		Be-7	<5.69E-02	0.00E+00	5.69E-02
		K-40	3.25E-01	1.35E-01	1.13E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401826	2/15/2016 - 2/22/2016	I-131	<8.87E-03	0.00E+00	8.87E-03
		Cs-134	<9.86E-03	0.00E+00	9.86E-03
		Cs-137	<8.11E-03	0.00E+00	8.11E-03
		Be-7	<6.92E-02	0.00E+00	6.92E-02
		K-40	3.43E-01	1.39E-01	1.19E-01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
402346	2/22/2016 - 2/29/2016	I-131	<9.40E-03	0.00E+00	9.40E-03
		Cs-134	<8.42E-03	0.00E+00	8.42E-03
		Cs-137	<7.92E-03	0.00E+00	7.92E-03
		Be-7	<6.36E-02	0.00E+00	6.36E-02
		K-40	3.78E-01	1.54E-01	1.58E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403068	2/29/2016 - 3/7/2016	I-131	<9.56E-03	0.00E+00	9.56E-03
		Cs-134	<6.64E-03	0.00E+00	6.64E-03
		Cs-137	<9.98E-03	0.00E+00	9.98E-03
		Be-7	<5.73E-02	0.00E+00	5.73E-02
		K-40	4.67E-01	1.57E-01	1.13E-01
404556	3/7/2016 - 3/14/2016	I-131	<1.57E-03	0.00E+00	1.57E-03
		Cs-134	<7.69E-03	0.00E+00	7.69E-03
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<6.49E-02	0.00E+00	6.49E-02
		K-40	3.43E-01	1.29E-01	3.10E-02
405429	3/14/2016 - 3/21/2016	I-131	<4.90E-03	0.00E+00	4.90E-03
		Cs-134	<6.90E-03	0.00E+00	6.90E-03
		Cs-137	<7.97E-03	0.00E+00	7.97E-03
		Be-7	<4.19E-02	0.00E+00	4.19E-02
		K-40	4.18E-01	1.38E-01	2.84E-02
406059	3/21/2016 - 3/28/2016	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<5.84E-03	0.00E+00	5.84E-03
		Cs-137	<6.51E-03	0.00E+00	6.51E-03
		Be-7	<7.89E-02	0.00E+00	7.89E-02
		K-40	2.43E-01	1.17E-01	1.25E-01
406410	3/28/2016 - 4/4/2016	I-131	<7.79E-03	0.00E+00	7.79E-03
		Cs-134	<7.46E-03	0.00E+00	7.46E-03
		Cs-137	<6.56E-03	0.00E+00	6.56E-03
		Be-7	<4.90E-02	0.00E+00	4.90E-02
		K-40	3.58E-01	1.34E-01	3.23E-02
407587	4/4/2016 - 4/11/2016	I-131	<6.84E-03	0.00E+00	6.84E-03
		Cs-134	<7.46E-03	0.00E+00	7.46E-03
		Cs-137	<8.09E-03	0.00E+00	8.09E-03
		Be-7	<4.79E-02	0.00E+00	4.79E-02
		K-40	3.43E-01	1.42E-01	1.42E-01
408154	4/11/2016 - 4/18/2016	I-131	<7.27E-03	0.00E+00	7.27E-03
		Cs-134	<6.28E-03	0.00E+00	6.28E-03
		Cs-137	<9.46E-03	0.00E+00	9.46E-03
		Be-7	<4.57E-02	0.00E+00	4.57E-02
		K-40	3.79E-01	1.29E-01	2.77E-02
409475	4/18/2016 - 4/25/2016	I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<5.77E-03	0.00E+00	5.77E-03
		Cs-137	<7.99E-03	0.00E+00	7.99E-03
		Be-7	<4.67E-02	0.00E+00	4.67E-02
		K-40	3.44E-01	1.53E-01	1.69E-01
409805	4/25/2016 - 5/2/2016	I-131	<7.52E-03	0.00E+00	7.52E-03
		Cs-134	<4.71E-03	0.00E+00	4.71E-03
		Cs-137	<8.25E-03	0.00E+00	8.25E-03
		Be-7	<6.10E-02	0.00E+00	6.10E-02
		K-40	4.17E-01	1.64E-01	1.71E-01
410976	5/2/2016 - 5/5/2016	I-131	<4.26E-02	0.00E+00	4.26E-02
		Cs-134	<3.56E-02	0.00E+00	3.56E-02
		Cs-137	<1.95E-02	0.00E+00	1.95E-02
		Be-7	<2.45E-01	0.00E+00	2.45E-01
		K-40	1.82E+00	5.98E-01	1.23E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
411454	5/9/2016 - 5/16/2016	I-131	<7.81E-03	0.00E+00	7.81E-03
		Cs-134	<6.39E-03	0.00E+00	6.39E-03
		Cs-137	<8.67E-03	0.00E+00	8.67E-03
		Be-7	<6.73E-02	0.00E+00	6.73E-02
		K-40	3.14E-01	1.32E-01	1.16E-01
411786	5/16/2016 - 5/23/2016	I-131	<7.59E-03	0.00E+00	7.59E-03
		Cs-134	<7.95E-03	0.00E+00	7.95E-03
		Cs-137	<9.87E-03	0.00E+00	9.87E-03
		Be-7	<6.37E-02	0.00E+00	6.37E-02
		K-40	3.77E-01	1.29E-01	2.76E-02
412244	5/23/2016 - 5/31/2016	I-131	<7.99E-03	0.00E+00	7.99E-03
		Cs-134	<6.85E-03	0.00E+00	6.85E-03
		Cs-137	<3.95E-03	0.00E+00	3.95E-03
		Be-7	<5.18E-02	0.00E+00	5.18E-02
		K-40	5.34E-01	1.49E-01	2.50E-02
412764	5/31/2016 - 6/6/2016	I-131	<9.08E-03	0.00E+00	9.08E-03
		Cs-134	<8.96E-03	0.00E+00	8.96E-03
		Cs-137	<5.81E-03	0.00E+00	5.81E-03
		Be-7	<6.56E-02	0.00E+00	6.56E-02
		K-40	4.07E-01	1.84E-01	2.08E-01
413375	6/6/2016 - 6/13/2016	I-131	<8.99E-03	0.00E+00	8.99E-03
		Cs-134	<7.99E-03	0.00E+00	7.99E-03
		Cs-137	<6.41E-03	0.00E+00	6.41E-03
		Be-7	<4.59E-02	0.00E+00	4.59E-02
		K-40	3.03E-01	1.48E-01	1.81E-01
413915	6/13/2016 - 6/20/2016	I-131	<7.91E-03	0.00E+00	7.91E-03
		Cs-134	<5.61E-03	0.00E+00	5.61E-03
		Cs-137	<6.97E-03	0.00E+00	6.97E-03
		Be-7	<6.23E-02	0.00E+00	6.23E-02
		K-40	4.67E-01	1.52E-01	1.12E-01
415051	6/20/2016 - 6/27/2016	I-131	<6.35E-03	0.00E+00	6.35E-03
		Cs-134	<7.44E-03	0.00E+00	7.44E-03
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<5.56E-02	0.00E+00	5.56E-02
		K-40	4.64E-01	1.46E-01	2.86E-02
415448	6/27/2016 - 7/5/2016	I-131	<6.92E-03	0.00E+00	6.92E-03
		Cs-134	<7.19E-03	0.00E+00	7.19E-03
		Cs-137	<7.14E-03	0.00E+00	7.14E-03
		Be-7	<5.00E-02	0.00E+00	5.00E-02
		K-40	3.24E-01	1.34E-01	1.34E-01
416427	7/5/2016 - 7/11/2016	I-131	<9.62E-03	0.00E+00	9.62E-03
		Cs-134	<8.37E-03	0.00E+00	8.37E-03
		Cs-137	<9.77E-03	0.00E+00	9.77E-03
		Be-7	<5.30E-02	0.00E+00	5.30E-02
		K-40	4.47E-01	1.57E-01	1.02E-01
417044	7/11/2016 - 7/18/2016	I-131	<1.08E-02	0.00E+00	1.08E-02
		Cs-134	<6.35E-03	0.00E+00	6.35E-03
		Cs-137	<7.88E-03	0.00E+00	7.88E-03
		Be-7	<5.54E-02	0.00E+00	5.54E-02
		K-40	2.60E-01	1.30E-01	1.46E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
417433	7/18/2016 - 7/25/2016	I-131	<7.54E-03	0.00E+00	7.54E-03
		Cs-134	<7.41E-03	0.00E+00	7.41E-03
		Cs-137	<5.17E-03	0.00E+00	5.17E-03
		Be-7	<3.32E-02	0.00E+00	3.32E-02
		K-40	4.14E-01	1.44E-01	3.21E-02
417828	7/25/2016 - 8/1/2016	I-131	<8.70E-03	0.00E+00	8.70E-03
		Cs-134	<6.57E-03	0.00E+00	6.57E-03
		Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<3.19E-02	0.00E+00	3.19E-02
		K-40	2.60E-01	1.53E-01	2.05E-01
418300	8/1/2016 - 8/8/2016	I-131	<8.08E-03	0.00E+00	8.08E-03
		Cs-134	<8.18E-03	0.00E+00	8.18E-03
		Cs-137	<6.29E-03	0.00E+00	6.29E-03
		Be-7	<7.19E-02	0.00E+00	7.19E-02
		K-40	3.75E-01	1.59E-01	1.70E-01
419022	8/8/2016 - 8/15/2016	I-131	<8.34E-03	0.00E+00	8.34E-03
		Cs-134	<6.91E-03	0.00E+00	6.91E-03
		Cs-137	<6.08E-03	0.00E+00	6.08E-03
		Be-7	<5.52E-02	0.00E+00	5.52E-02
		K-40	3.98E-01	1.65E-01	1.83E-01
419518	8/15/2016 - 8/22/2016	I-131	<8.39E-03	0.00E+00	8.39E-03
		Cs-134	<6.81E-03	0.00E+00	6.81E-03
		Cs-137	<9.93E-03	0.00E+00	9.93E-03
		Be-7	<4.83E-02	0.00E+00	4.83E-02
		K-40	5.23E-01	1.63E-01	3.22E-02
420049	8/22/2016 - 8/29/2016	I-131	<1.12E-02	0.00E+00	1.12E-02
		Cs-134	<6.57E-03	0.00E+00	6.57E-03
		Cs-137	<8.91E-03	0.00E+00	8.91E-03
		Be-7	<5.68E-02	0.00E+00	5.68E-02
		K-40	<3.24E-01	0.00E+00	3.24E-01
420596	8/29/2016 - 9/6/2016	I-131	<7.15E-03	0.00E+00	7.15E-03
		Cs-134	<7.05E-03	0.00E+00	7.05E-03
		Cs-137	<7.42E-03	0.00E+00	7.42E-03
		Be-7	<3.15E-02	0.00E+00	3.15E-02
		K-40	3.34E-01	1.23E-01	1.00E-01
421456	9/6/2016 - 9/12/2016	I-131	<1.07E-02	0.00E+00	1.07E-02
		Cs-134	<5.70E-03	0.00E+00	5.70E-03
		Cs-137	<8.21E-03	0.00E+00	8.21E-03
		Be-7	<5.87E-02	0.00E+00	5.87E-02
		K-40	4.11E-01	1.67E-01	1.57E-01
422595	9/12/2016 - 9/19/2016	I-131	<7.54E-03	0.00E+00	7.54E-03
		Cs-134	<7.04E-03	0.00E+00	7.04E-03
		Cs-137	<8.74E-03	0.00E+00	8.74E-03
		Be-7	<4.28E-02	0.00E+00	4.28E-02
		K-40	4.99E-01	1.53E-01	2.88E-02
423340	9/19/2016 - 9/26/2016	I-131	<6.71E-03	0.00E+00	6.71E-03
		Cs-134	<5.78E-03	0.00E+00	5.78E-03
		Cs-137	<7.84E-03	0.00E+00	7.84E-03
		Be-7	<6.06E-02	0.00E+00	6.06E-02
		K-40	3.46E-01	1.38E-01	1.30E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
424475	9/26/2016 - 10/3/2016	I-131	<6.30E-03	0.00E+00	6.30E-03
		Cs-134	<6.89E-03	0.00E+00	6.89E-03
		Cs-137	<7.03E-03	0.00E+00	7.03E-03
		Be-7	<5.91E-02	0.00E+00	5.91E-02
		K-40	4.94E-01	1.64E-01	1.24E-01
425471	10/3/2016 - 10/10/2016	I-131	<7.64E-03	0.00E+00	7.64E-03
		Cs-134	<7.90E-03	0.00E+00	7.90E-03
		Cs-137	<7.72E-03	0.00E+00	7.72E-03
		Be-7	<5.76E-02	0.00E+00	5.76E-02
		K-40	3.15E-01	1.25E-01	1.03E-01
426016	10/10/2016 - 10/17/2016	I-131	<8.45E-03	0.00E+00	8.45E-03
		Cs-134	<5.55E-03	0.00E+00	5.55E-03
		Cs-137	<7.72E-03	0.00E+00	7.72E-03
		Be-7	<5.72E-02	0.00E+00	5.72E-02
		K-40	3.64E-01	1.41E-01	1.23E-01
426387	10/17/2016 - 10/24/2016	I-131	<9.01E-03	0.00E+00	9.01E-03
		Cs-134	<8.04E-03	0.00E+00	8.04E-03
		Cs-137	<8.46E-03	0.00E+00	8.46E-03
		Be-7	<5.75E-02	0.00E+00	5.75E-02
		K-40	3.59E-01	1.37E-01	1.16E-01
427072	10/24/2016 - 10/31/2016	I-131	<7.57E-03	0.00E+00	7.57E-03
		Cs-134	<8.25E-03	0.00E+00	8.25E-03
		Cs-137	<8.20E-03	0.00E+00	8.20E-03
		Be-7	<3.20E-02	0.00E+00	3.20E-02
		K-40	<3.44E-01	0.00E+00	3.44E-01
427739	10/31/2016 - 11/7/2016	I-131	<8.62E-03	0.00E+00	8.62E-03
		Cs-134	<7.15E-03	0.00E+00	7.15E-03
		Cs-137	<4.35E-03	0.00E+00	4.35E-03
		Be-7	<5.00E-02	0.00E+00	5.00E-02
		K-40	3.25E-01	1.19E-01	2.75E-02
428232	11/7/2016 - 11/14/2016	I-131	<9.01E-03	0.00E+00	9.01E-03
		Cs-134	<7.65E-03	0.00E+00	7.65E-03
		Cs-137	<7.19E-03	0.00E+00	7.19E-03
		Be-7	<6.22E-02	0.00E+00	6.22E-02
		K-40	3.95E-01	1.47E-01	1.34E-01
428915	11/14/2016 - 11/21/2016	I-131	<1.31E-02	0.00E+00	1.31E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.28E-02	0.00E+00	1.28E-02
		Be-7	<8.23E-02	0.00E+00	8.23E-02
		K-40	7.04E-01	2.16E-01	4.15E-02
429418	11/21/2016 - 11/28/2016	I-131	<8.18E-03	0.00E+00	8.18E-03
		Cs-134	<7.24E-03	0.00E+00	7.24E-03
		Cs-137	<9.99E-03	0.00E+00	9.99E-03
		Be-7	<6.38E-02	0.00E+00	6.38E-02
		K-40	3.69E-01	1.56E-01	1.77E-01
429977	11/28/2016 - 12/5/2016	I-131	<6.40E-03	0.00E+00	6.40E-03
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<8.81E-03	0.00E+00	8.81E-03
		Be-7	<4.54E-02	0.00E+00	4.54E-02
		K-40	3.28E-01	1.26E-01	9.52E-02



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 195 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
430596	12/5/2016 - 12/12/2016		I-131	<7.46E-03	0.00E+00	7.46E-03
			Cs-134	<7.05E-03	0.00E+00	7.05E-03
			Cs-137	<8.78E-03	0.00E+00	8.78E-03
			Be-7	<5.20E-02	0.00E+00	5.20E-02
			K-40	3.97E-01	1.62E-01	1.75E-01
431085	12/12/2016 - 12/19/2016		I-131	<8.16E-03	0.00E+00	8.16E-03
			Cs-134	<6.54E-03	0.00E+00	6.54E-03
			Cs-137	<7.28E-03	0.00E+00	7.28E-03
			Be-7	<5.66E-02	0.00E+00	5.66E-02
			K-40	4.34E-01	1.55E-01	1.22E-01
431486	12/19/2016 - 12/27/2016		I-131	<6.72E-03	0.00E+00	6.72E-03
			Cs-134	<3.23E-03	0.00E+00	3.23E-03
			Cs-137	<5.87E-03	0.00E+00	5.87E-03
			Be-7	<4.17E-02	0.00E+00	4.17E-02
			K-40	3.49E-01	1.17E-01	2.49E-02

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 104 [ INDICATOR - NNW @ 1.52 miles ]

Sample ID:	Sample Dates:	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	MDA
413380	6/6/2016 - 6/6/2016		I-131	<6.92E+00	0.00E+00	6.92E+00
			Cs-134	<9.06E+00	0.00E+00	9.06E+00
			Cs-137	<7.35E+00	0.00E+00	7.35E+00
			Be-7	<4.77E+01	0.00E+00	4.77E+01
			K-40	2.32E+03	3.10E+02	1.45E+02
416432	7/5/2016 - 7/5/2016		I-131	<6.13E+00	0.00E+00	6.13E+00
			Cs-134	<8.09E+00	0.00E+00	8.09E+00
			Cs-137	<8.83E+00	0.00E+00	8.83E+00
			Be-7	<6.07E+01	0.00E+00	6.07E+01
			K-40	1.82E+03	2.82E+02	1.62E+02
418305	8/1/2016 - 8/1/2016		I-131	<9.50E+00	0.00E+00	9.50E+00
			Cs-134	<1.28E+01	0.00E+00	1.28E+01
			Cs-137	<1.11E+01	0.00E+00	1.11E+01
			Be-7	<6.89E+01	0.00E+00	6.89E+01
			K-40	2.46E+03	3.56E+02	1.06E+02
421461	9/6/2016 - 9/6/2016		I-131	<8.10E+00	0.00E+00	8.10E+00
			Cs-134	<1.10E+01	0.00E+00	1.10E+01
			Cs-137	<1.24E+01	0.00E+00	1.24E+01
			Be-7	<7.42E+01	0.00E+00	7.42E+01
			K-40	4.00E+03	4.86E+02	1.78E+02
425476	10/3/2016 - 10/3/2016		I-131	<6.51E+00	0.00E+00	6.51E+00
			Cs-134	<9.18E+00	0.00E+00	9.18E+00
			Cs-137	<1.01E+01	0.00E+00	1.01E+01
			Be-7	<6.88E+01	0.00E+00	6.88E+01
			K-40	2.72E+03	3.51E+02	1.82E+01
428237	11/7/2016 - 11/7/2016		I-131	<8.64E+00	0.00E+00	8.64E+00
			Cs-134	<1.07E+01	0.00E+00	1.07E+01
			Cs-137	<1.22E+01	0.00E+00	1.22E+01
			Be-7	<8.35E+01	0.00E+00	8.35E+01
			K-40	2.22E+03	3.42E+02	2.13E+02
430601	12/5/2016 - 12/5/2016		I-131	<6.16E+00	0.00E+00	6.16E+00
			Cs-134	<9.58E+00	0.00E+00	9.58E+00
			Cs-137	<8.69E+00	0.00E+00	8.69E+00
			Be-7	<7.93E+01	0.00E+00	7.93E+01





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 104 [ INDICATOR - NNW @ 1.52 miles ]

Sample ID:	Sample Dates:	MIXEDCROPS	Nuclide	Activity	2 Sigma Error	MDA
430601	12/5/2016 - 12/5/2016		K-40	2.64E+03	3.52E+02	9.84E+01

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 101 [ INDICATOR - E @ 3.31 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398474	12/7/2015 - 1/5/2016	Beta	1.58E+00	7.87E-01	1.25E+00
		Mn-54	<2.88E+00	0.00E+00	2.88E+00
		Co-58	<3.60E+00	0.00E+00	3.60E+00
		Fe-59	<6.42E+00	0.00E+00	6.42E+00
		Co-60	<3.05E+00	0.00E+00	3.05E+00
		Zn-65	<8.57E+00	0.00E+00	8.57E+00
		Zr-95	<5.91E+00	0.00E+00	5.91E+00
		Nb-95	<4.17E+00	0.00E+00	4.17E+00
		I-131	<1.13E+01	0.00E+00	1.13E+01
		Cs-134	<2.30E+00	0.00E+00	2.30E+00
		Cs-137	<3.36E+00	0.00E+00	3.36E+00
		BaLa-140	<5.94E+00	0.00E+00	5.94E+00
		Be-7	<2.61E+01	0.00E+00	2.61E+01
		K-40	<3.26E+01	0.00E+00	3.26E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400156	1/5/2016 - 2/1/2016	Beta	1.79E+00	7.64E-01	1.19E+00
		Mn-54	<4.49E+00	0.00E+00	4.49E+00
		Co-58	<4.08E+00	0.00E+00	4.08E+00
		Fe-59	<9.05E+00	0.00E+00	9.05E+00
		Co-60	<4.98E+00	0.00E+00	4.98E+00
		Zn-65	<9.14E+00	0.00E+00	9.14E+00
		Zr-95	<8.02E+00	0.00E+00	8.02E+00
		Nb-95	<6.05E+00	0.00E+00	6.05E+00
		I-131	<1.03E+01	0.00E+00	1.03E+01
		Cs-134	<3.33E+00	0.00E+00	3.33E+00
		Cs-137	<4.35E+00	0.00E+00	4.35E+00
		BaLa-140	<9.16E+00	0.00E+00	9.16E+00
		Be-7	<3.01E+01	0.00E+00	3.01E+01
		K-40	<6.40E+01	0.00E+00	6.40E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401961	2/1/2016 - 2/29/2016	Beta	1.59E+00	7.26E-01	1.13E+00
		Mn-54	<1.76E+00	0.00E+00	1.76E+00
		Co-58	<2.25E+00	0.00E+00	2.25E+00
		Fe-59	<4.02E+00	0.00E+00	4.02E+00
		Co-60	<1.99E+00	0.00E+00	1.99E+00
		Zn-65	<3.90E+00	0.00E+00	3.90E+00
		Zr-95	<3.55E+00	0.00E+00	3.55E+00
		Nb-95	<2.87E+00	0.00E+00	2.87E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.08E+00	0.00E+00	2.08E+00
		Cs-137	<1.92E+00	0.00E+00	1.92E+00
		BaLa-140	<6.28E+00	0.00E+00	6.28E+00
		Be-7	<1.82E+01	0.00E+00	1.82E+01
		K-40	4.37E+01	1.88E+01	2.46E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403604	12/7/2015 - 2/29/2016	H3DW	5.04E+02	1.29E+02	1.99E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405633	2/29/2016 - 3/28/2016	Beta	1.84E+00	7.45E-01	1.14E+00
		Mn-54	<1.65E+00	0.00E+00	1.65E+00
		Co-58	<2.21E+00	0.00E+00	2.21E+00
		Fe-59	<3.48E+00	0.00E+00	3.48E+00
		Co-60	<1.70E+00	0.00E+00	1.70E+00
		Zn-65	<3.98E+00	0.00E+00	3.98E+00
		Zr-95	<4.14E+00	0.00E+00	4.14E+00
		Nb-95	<2.47E+00	0.00E+00	2.47E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<2.10E+00	0.00E+00	2.10E+00
		Cs-137	<2.01E+00	0.00E+00	2.01E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 101 [ INDICATOR - E @ 3.31 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405633	2/29/2016 - 3/28/2016	BaLa-140	<7.50E+00	0.00E+00	7.50E+00
		Be-7	<1.71E+01	0.00E+00	1.71E+01
		K-40	4.34E+01	1.60E+01	2.61E+01
408517	3/28/2016 - 4/25/2016	Beta	<1.92E-01	0.00E+00	1.41E+00
		Mn-54	<2.91E+00	0.00E+00	2.91E+00
		Co-58	<3.09E+00	0.00E+00	3.09E+00
		Fe-59	<5.31E+00	0.00E+00	5.31E+00
		Co-60	<3.54E+00	0.00E+00	3.54E+00
		Zn-65	<6.18E+00	0.00E+00	6.18E+00
		Zr-95	<5.73E+00	0.00E+00	5.73E+00
		Nb-95	<3.63E+00	0.00E+00	3.63E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.09E+00	0.00E+00	3.09E+00
		Cs-137	<3.80E+00	0.00E+00	3.80E+00
		BaLa-140	<6.67E+00	0.00E+00	6.67E+00
		Be-7	<2.77E+01	0.00E+00	2.77E+01
		K-40	<4.71E+01	0.00E+00	4.71E+01
411590	4/25/2016 - 5/23/2016	Beta	<7.0E-01	0.00E+00	1.50E+00
		Mn-54	<3.80E+00	0.00E+00	3.80E+00
		Co-58	<3.97E+00	0.00E+00	3.97E+00
		Fe-59	<7.53E+00	0.00E+00	7.53E+00
		Co-60	<4.22E+00	0.00E+00	4.22E+00
		Zn-65	<6.36E+00	0.00E+00	6.36E+00
		Zr-95	<6.14E+00	0.00E+00	6.14E+00
		Nb-95	<4.90E+00	0.00E+00	4.90E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<4.21E+00	0.00E+00	4.21E+00
		Cs-137	<4.52E+00	0.00E+00	4.52E+00
		BaLa-140	<7.94E+00	0.00E+00	7.94E+00
		Be-7	<4.05E+01	0.00E+00	4.05E+01
		K-40	5.60E+01	3.38E+01	4.18E+01
413178	2/29/2016 - 5/23/2016	H3DW	6.64E+02	1.34E+02	1.95E+02
413513	5/23/2016 - 6/20/2016	Beta	3.90E+00	9.06E-01	1.30E+00
		Mn-54	<3.00E+00	0.00E+00	3.00E+00
		Co-58	<3.51E+00	0.00E+00	3.51E+00
		Fe-59	<7.36E+00	0.00E+00	7.36E+00
		Co-60	<3.76E+00	0.00E+00	3.76E+00
		Zn-65	<6.92E+00	0.00E+00	6.92E+00
		Zr-95	<5.14E+00	0.00E+00	5.14E+00
		Nb-95	<5.12E+00	0.00E+00	5.12E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.87E+00	0.00E+00	3.87E+00
		Cs-137	<3.25E+00	0.00E+00	3.25E+00
		BaLa-140	<8.56E+00	0.00E+00	8.56E+00
		Be-7	<3.14E+01	0.00E+00	3.14E+01
		K-40	<5.14E+01	0.00E+00	5.14E+01
416852	6/20/2016 - 7/18/2016	Beta	2.81E+00	7.90E-01	1.14E+00
		Mn-54	<4.80E+00	0.00E+00	4.80E+00
		Co-58	<3.72E+00	0.00E+00	3.72E+00
		Fe-59	<7.52E+00	0.00E+00	7.52E+00
		Co-60	<4.82E+00	0.00E+00	4.82E+00
		Zn-65	<8.32E+00	0.00E+00	8.32E+00
		Zr-95	<7.78E+00	0.00E+00	7.78E+00
		Nb-95	<6.08E+00	0.00E+00	6.08E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.47E+00	0.00E+00	3.47E+00
		Cs-137	<4.36E+00	0.00E+00	4.36E+00
		BaLa-140	<6.26E+00	0.00E+00	6.26E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 101 [ INDICATOR - E @ 3.31 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
416852	6/20/2016 - 7/18/2016	Be-7	<2.61E+01	0.00E+00	2.61E+01
		K-40	5.83E+01	3.55E+01	4.54E+01
418774	7/18/2016 - 8/15/2016	Beta	1.05E+00	7.91E-01	1.30E+00
		Mn-54	<3.07E+00	0.00E+00	3.07E+00
		Co-58	<2.78E+00	0.00E+00	2.78E+00
		Fe-59	<8.66E+00	0.00E+00	8.66E+00
		Co-60	<4.44E+00	0.00E+00	4.44E+00
		Zn-65	<8.16E+00	0.00E+00	8.16E+00
		Zr-95	<7.26E+00	0.00E+00	7.26E+00
		Nb-95	<4.57E+00	0.00E+00	4.57E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<4.33E+00	0.00E+00	4.33E+00
		Cs-137	<4.12E+00	0.00E+00	4.12E+00
		BaLa-140	<2.26E+00	0.00E+00	2.26E+00
		Be-7	<3.54E+01	0.00E+00	3.54E+01
		K-40	<5.66E+01	0.00E+00	5.66E+01
420859	5/23/2016 - 8/15/2016	Nuclide	Activity	2 Sigma Error	MDA
		H3DW	6.08E+02	1.26E+02	1.89E+02
420773	8/15/2016 - 9/12/2016	Beta	2.34E+00	8.27E-01	1.26E+00
		Mn-54	<2.56E+00	0.00E+00	2.56E+00
		Co-58	<2.76E+00	0.00E+00	2.76E+00
		Fe-59	<6.62E+00	0.00E+00	6.62E+00
		Co-60	<3.15E+00	0.00E+00	3.15E+00
		Zn-65	<5.03E+00	0.00E+00	5.03E+00
		Zr-95	<4.90E+00	0.00E+00	4.90E+00
		Nb-95	<3.26E+00	0.00E+00	3.26E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.62E+00	0.00E+00	2.62E+00
		Cs-137	<2.47E+00	0.00E+00	2.47E+00
		BaLa-140	<7.57E+00	0.00E+00	7.57E+00
		Be-7	1.07E+00	1.37E+01	2.53E+01
		K-40	3.99E+01	2.13E+01	2.57E+01
424739	9/12/2016 - 10/10/2016	Beta	1.36E+00	7.39E-01	1.18E+00
		Mn-54	<2.14E+00	0.00E+00	2.14E+00
		Co-58	<3.18E+00	0.00E+00	3.18E+00
		Fe-59	<4.84E+00	0.00E+00	4.84E+00
		Co-60	<3.06E+00	0.00E+00	3.06E+00
		Zn-65	<5.95E+00	0.00E+00	5.95E+00
		Zr-95	<5.22E+00	0.00E+00	5.22E+00
		Nb-95	<3.17E+00	0.00E+00	3.17E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.67E+00	0.00E+00	2.67E+00
		Cs-137	<3.22E+00	0.00E+00	3.22E+00
		BaLa-140	<9.53E+00	0.00E+00	9.53E+00
		Be-7	<2.97E+01	0.00E+00	2.97E+01
		K-40	<4.65E+01	0.00E+00	4.65E+01
427413	10/10/2016 - 11/7/2016	Beta	1.89E+00	7.82E-01	1.22E+00
		Mn-54	<3.60E+00	0.00E+00	3.60E+00
		Co-58	<3.09E+00	0.00E+00	3.09E+00
		Fe-59	<8.42E+00	0.00E+00	8.42E+00
		Co-60	<3.49E+00	0.00E+00	3.49E+00
		Zn-65	<6.42E+00	0.00E+00	6.42E+00
		Zr-95	<6.30E+00	0.00E+00	6.30E+00
		Nb-95	<4.71E+00	0.00E+00	4.71E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<3.86E+00	0.00E+00	3.86E+00
		Cs-137	<3.25E+00	0.00E+00	3.25E+00
		BaLa-140	<1.14E+01	0.00E+00	1.14E+01
		Be-7	<3.20E+01	0.00E+00	3.20E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 101 [ INDICATOR - E @ 3.31 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427413	10/10/2016 - 11/7/2016	K-40	<6.14E+01	0.00E+00	6.14E+01
427838	8/15/2016 - 12/5/2016	H3DW	4.99E+02	1.29E+02	1.95E+02
429626	11/7/2016 - 12/5/2016	Beta	1.50E+00	7.45E-01	1.18E+00
		Mn-54	<3.34E+00	0.00E+00	3.34E+00
		Co-58	<4.28E+00	0.00E+00	4.28E+00
		Fe-59	<7.64E+00	0.00E+00	7.64E+00
		Co-60	<3.22E+00	0.00E+00	3.22E+00
		Zn-65	<7.20E+00	0.00E+00	7.20E+00
		Zr-95	<7.24E+00	0.00E+00	7.24E+00
		Nb-95	<4.76E+00	0.00E+00	4.76E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<4.11E+00	0.00E+00	4.11E+00
		Cs-137	<3.59E+00	0.00E+00	3.59E+00
		BaLa-140	<5.84E+00	0.00E+00	5.84E+00
		Be-7	<3.24E+01	0.00E+00	3.24E+01
		K-40	<6.32E+01	0.00E+00	6.32E+01

## Sample Point 119 [ INDICATOR - SSW @ 7.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398475	12/7/2015 - 1/5/2016	Beta	2.33E+00	8.18E-01	1.24E+00
		Mn-54	<2.87E+00	0.00E+00	2.87E+00
		Co-58	<2.23E+00	0.00E+00	2.23E+00
		Fe-59	<5.02E+00	0.00E+00	5.02E+00
		Co-60	<3.28E+00	0.00E+00	3.28E+00
		Zn-65	<5.79E+00	0.00E+00	5.79E+00
		Zr-95	<5.64E+00	0.00E+00	5.64E+00
		Nb-95	<3.76E+00	0.00E+00	3.76E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<3.18E+00	0.00E+00	3.18E+00
		Cs-137	<2.54E+00	0.00E+00	2.54E+00
		BaLa-140	<7.46E+00	0.00E+00	7.46E+00
		Be-7	<2.63E+01	0.00E+00	2.63E+01
		K-40	<5.27E+01	0.00E+00	5.27E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400157	1/5/2016 - 2/1/2016	Beta	2.02E+00	7.71E-01	1.17E+00
		Mn-54	<2.99E+00	0.00E+00	2.99E+00
		Co-58	<3.53E+00	0.00E+00	3.53E+00
		Fe-59	<6.80E+00	0.00E+00	6.80E+00
		Co-60	<2.90E+00	0.00E+00	2.90E+00
		Zn-65	<6.44E+00	0.00E+00	6.44E+00
		Zr-95	<6.04E+00	0.00E+00	6.04E+00
		Nb-95	<4.29E+00	0.00E+00	4.29E+00
		I-131	<1.04E+01	0.00E+00	1.04E+01
		Cs-134	<4.11E+00	0.00E+00	4.11E+00
		Cs-137	<3.50E+00	0.00E+00	3.50E+00
		BaLa-140	<4.23E+00	0.00E+00	4.23E+00
		Be-7	<3.05E+01	0.00E+00	3.05E+01
		K-40	3.54E+01	2.46E+01	3.39E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401962	2/1/2016 - 2/29/2016	Beta	2.06E+00	7.45E-01	1.13E+00
		Mn-54	<2.58E+00	0.00E+00	2.58E+00
		Co-58	<3.49E+00	0.00E+00	3.49E+00
		Fe-59	<1.06E+01	0.00E+00	1.06E+01
		Co-60	<2.98E+00	0.00E+00	2.98E+00
		Zn-65	<1.03E+01	0.00E+00	1.03E+01
		Zr-95	<7.48E+00	0.00E+00	7.48E+00
		Nb-95	<3.59E+00	0.00E+00	3.59E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.98E+00	0.00E+00	3.98E+00
		Cs-137	<3.86E+00	0.00E+00	3.86E+00
		BaLa-140	<9.62E+00	0.00E+00	9.62E+00
		Be-7	<2.97E+01	0.00E+00	2.97E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 119 [ INDICATOR - SSW @ 7.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401962	2/1/2016 - 2/29/2016	K-40	<5.30E+01	0.00E+00	5.30E+01
403605	12/7/2015 - 2/29/2016	H3DW	3.14E+02	1.22E+02	1.94E+02
405634	2/29/2016 - 3/28/2016	Beta	2.09E+00	7.52E-01	1.13E+00
		Mn-54	<2.03E+00	0.00E+00	2.03E+00
		Co-58	<1.71E+00	0.00E+00	1.71E+00
		Fe-59	<4.91E+00	0.00E+00	4.91E+00
		Co-60	<1.13E+00	0.00E+00	1.13E+00
		Zn-65	<3.95E+00	0.00E+00	3.95E+00
		Zr-95	<3.68E+00	0.00E+00	3.68E+00
		Nb-95	<2.42E+00	0.00E+00	2.42E+00
		I-131	<1.15E+01	0.00E+00	1.15E+01
		Cs-134	<1.71E+00	0.00E+00	1.71E+00
		Cs-137	<1.91E+00	0.00E+00	1.91E+00
		BaLa-140	<5.14E+00	0.00E+00	5.14E+00
		Be-7	<1.75E+01	0.00E+00	1.75E+01
		K-40	1.91E+01	1.63E+01	2.55E+01
408518	3/28/2016 - 4/25/2016	Beta	<5.92E-01	0.00E+00	1.41E+00
		Mn-54	<3.51E+00	0.00E+00	3.51E+00
		Co-58	<4.95E+00	0.00E+00	4.95E+00
		Fe-59	<1.00E+01	0.00E+00	1.00E+01
		Co-60	<4.30E+00	0.00E+00	4.30E+00
		Zn-65	<7.10E+00	0.00E+00	7.10E+00
		Zr-95	<6.91E+00	0.00E+00	6.91E+00
		Nb-95	<3.60E+00	0.00E+00	3.60E+00
		I-131	<8.74E+00	0.00E+00	8.74E+00
		Cs-134	<4.45E+00	0.00E+00	4.45E+00
		Cs-137	<4.32E+00	0.00E+00	4.32E+00
		BaLa-140	<2.70E+00	0.00E+00	2.70E+00
		Be-7	<3.14E+01	0.00E+00	3.14E+01
		K-40	<7.57E+01	0.00E+00	7.57E+01
411591	4/25/2016 - 5/23/2016	Beta	<5.1E-01	0.00E+00	1.49E+00
		Mn-54	<2.45E+00	0.00E+00	2.45E+00
		Co-58	<2.86E+00	0.00E+00	2.86E+00
		Fe-59	<6.44E+00	0.00E+00	6.44E+00
		Co-60	<2.64E+00	0.00E+00	2.64E+00
		Zn-65	<6.06E+00	0.00E+00	6.06E+00
		Zr-95	<5.80E+00	0.00E+00	5.80E+00
		Nb-95	<4.51E+00	0.00E+00	4.51E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.16E+00	0.00E+00	3.16E+00
		Cs-137	<3.28E+00	0.00E+00	3.28E+00
		BaLa-140	<9.28E+00	0.00E+00	9.28E+00
		Be-7	<3.41E+01	0.00E+00	3.41E+01
		K-40	2.21E+01	2.43E+01	3.86E+01
413179	2/29/2016 - 5/23/2016	H3DW	4.03E+02	1.27E+02	1.96E+02
413514	5/23/2016 - 6/20/2016	Beta	4.96E+00	9.45E-01	1.29E+00
		Mn-54	<3.77E+00	0.00E+00	3.77E+00
		Co-58	<4.69E+00	0.00E+00	4.69E+00
		Fe-59	<8.43E+00	0.00E+00	8.43E+00
		Co-60	<3.86E+00	0.00E+00	3.86E+00
		Zn-65	<8.63E+00	0.00E+00	8.63E+00
		Zr-95	<7.86E+00	0.00E+00	7.86E+00
		Nb-95	<5.23E+00	0.00E+00	5.23E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<4.45E+00	0.00E+00	4.45E+00
		Cs-137	<4.70E+00	0.00E+00	4.70E+00
		BaLa-140	<1.16E+01	0.00E+00	1.16E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 119 [ INDICATOR - SSW @ 7.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
413514	5/23/2016 - 6/20/2016	Be-7	<3.76E+01	0.00E+00	3.76E+01
		K-40	<6.92E+01	0.00E+00	6.92E+01
416853	6/20/2016 - 7/18/2016	Beta	2.80E+00	7.86E-01	1.14E+00
		Mn-54	<3.36E+00	0.00E+00	3.36E+00
		Co-58	<3.25E+00	0.00E+00	3.25E+00
		Fe-59	<7.72E+00	0.00E+00	7.72E+00
		Co-60	<2.86E+00	0.00E+00	2.86E+00
		Zn-65	<6.01E+00	0.00E+00	6.01E+00
		Zr-95	<5.53E+00	0.00E+00	5.53E+00
		Nb-95	<3.89E+00	0.00E+00	3.89E+00
		I-131	<1.06E+01	0.00E+00	1.06E+01
		Cs-134	<3.51E+00	0.00E+00	3.51E+00
		Cs-137	<3.16E+00	0.00E+00	3.16E+00
		BaLa-140	<7.01E+00	0.00E+00	7.01E+00
		Be-7	<2.95E+01	0.00E+00	2.95E+01
		K-40	5.46E+01	3.10E+01	4.14E+01
418775	7/18/2016 - 8/15/2016	Beta	2.50E+00	8.47E-01	1.29E+00
		Mn-54	<4.39E+00	0.00E+00	4.39E+00
		Co-58	<4.67E+00	0.00E+00	4.67E+00
		Fe-59	<7.34E+00	0.00E+00	7.34E+00
		Co-60	<4.11E+00	0.00E+00	4.11E+00
		Zn-65	<7.54E+00	0.00E+00	7.54E+00
		Zr-95	<9.17E+00	0.00E+00	9.17E+00
		Nb-95	<4.31E+00	0.00E+00	4.31E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<4.10E+00	0.00E+00	4.10E+00
		Cs-137	<4.10E+00	0.00E+00	4.10E+00
		BaLa-140	<1.00E+01	0.00E+00	1.00E+01
		Be-7	<4.60E+01	0.00E+00	4.60E+01
		K-40	2.04E+01	2.90E+01	4.83E+01
420860	5/23/2016 - 8/15/2016	H3DW	3.38E+02	1.20E+02	1.90E+02
420774	8/15/2016 - 9/12/2016	Beta	6.44E+00	9.83E-01	1.24E+00
		Mn-54	<2.17E+00	0.00E+00	2.17E+00
		Co-58	<2.89E+00	0.00E+00	2.89E+00
		Fe-59	<5.55E+00	0.00E+00	5.55E+00
		Co-60	<2.59E+00	0.00E+00	2.59E+00
		Zn-65	<6.37E+00	0.00E+00	6.37E+00
		Zr-95	<6.12E+00	0.00E+00	6.12E+00
		Nb-95	<4.46E+00	0.00E+00	4.46E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<2.64E+00	0.00E+00	2.64E+00
		Cs-137	<3.11E+00	0.00E+00	3.11E+00
		BaLa-140	<6.55E+00	0.00E+00	6.55E+00
		Be-7	<2.38E+01	0.00E+00	2.38E+01
		K-40	<4.63E+01	0.00E+00	4.63E+01
424740	9/12/2016 - 10/10/2016	Beta	2.32E+00	7.81E-01	1.17E+00
		Mn-54	<2.55E+00	0.00E+00	2.55E+00
		Co-58	<3.14E+00	0.00E+00	3.14E+00
		Fe-59	<6.35E+00	0.00E+00	6.35E+00
		Co-60	<3.95E+00	0.00E+00	3.95E+00
		Zn-65	<4.50E+00	0.00E+00	4.50E+00
		Zr-95	<4.02E+00	0.00E+00	4.02E+00
		Nb-95	<4.27E+00	0.00E+00	4.27E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.98E+00	0.00E+00	2.98E+00
		Cs-137	<3.77E+00	0.00E+00	3.77E+00
		BaLa-140	<6.85E+00	0.00E+00	6.85E+00
		Be-7	<2.97E+01	0.00E+00	2.97E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 119 [ INDICATOR - SSW @ 7.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
424740	9/12/2016 - 10/10/2016	K-40	<5.50E+01	0.00E+00	5.50E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427414	10/10/2016 - 11/7/2016	Beta	1.87E+00	7.78E-01	1.21E+00
		Mn-54	<3.20E+00	0.00E+00	3.20E+00
		Co-58	<2.93E+00	0.00E+00	2.93E+00
		Fe-59	<4.98E+00	0.00E+00	4.98E+00
		Co-60	<4.30E+00	0.00E+00	4.30E+00
		Zn-65	<5.71E+00	0.00E+00	5.71E+00
		Zr-95	<6.72E+00	0.00E+00	6.72E+00
		Nb-95	<3.06E+00	0.00E+00	3.06E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<2.94E+00	0.00E+00	2.94E+00
		Cs-137	<3.65E+00	0.00E+00	3.65E+00
		BaLa-140	<8.94E+00	0.00E+00	8.94E+00
		Be-7	<3.35E+01	0.00E+00	3.35E+01
		K-40	<5.41E+01	0.00E+00	5.41E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427839	8/15/2016 - 12/5/2016	H3DW	4.53E+02	1.28E+02	1.95E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429627	11/7/2016 - 12/5/2016	Beta	1.95E+00	7.67E-01	1.17E+00
		Mn-54	<3.24E+00	0.00E+00	3.24E+00
		Co-58	<3.35E+00	0.00E+00	3.35E+00
		Fe-59	<5.97E+00	0.00E+00	5.97E+00
		Co-60	<5.87E-01	0.00E+00	5.87E-01
		Zn-65	<6.64E+00	0.00E+00	6.64E+00
		Zr-95	<6.35E+00	0.00E+00	6.35E+00
		Nb-95	<4.35E+00	0.00E+00	4.35E+00
		I-131	<1.07E+01	0.00E+00	1.07E+01
		Cs-134	<2.84E+00	0.00E+00	2.84E+00
		Cs-137	<3.05E+00	0.00E+00	3.05E+00
		BaLa-140	<7.57E+00	0.00E+00	7.57E+00
		Be-7	<3.19E+01	0.00E+00	3.19E+01
		K-40	<4.32E+01	0.00E+00	4.32E+01

## Sample Point 132 [ INDICATOR - SSE @ 11.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398476	12/7/2015 - 1/5/2016	Beta	1.47E+00	7.84E-01	1.25E+00
		Mn-54	<2.31E+00	0.00E+00	2.31E+00
		Co-58	<2.57E+00	0.00E+00	2.57E+00
		Fe-59	<4.88E+00	0.00E+00	4.88E+00
		Co-60	<2.87E+00	0.00E+00	2.87E+00
		Zn-65	<5.05E+00	0.00E+00	5.05E+00
		Zr-95	<4.71E+00	0.00E+00	4.71E+00
		Nb-95	<3.75E+00	0.00E+00	3.75E+00
		I-131	<1.10E+01	0.00E+00	1.10E+01
		Cs-134	<2.90E+00	0.00E+00	2.90E+00
		Cs-137	<2.53E+00	0.00E+00	2.53E+00
		BaLa-140	<4.93E+00	0.00E+00	4.93E+00
		Be-7	<2.77E+01	0.00E+00	2.77E+01
		K-40	<4.81E+01	0.00E+00	4.81E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400158	1/5/2016 - 2/1/2016	Beta	2.96E+00	8.18E-01	1.19E+00
		Mn-54	<3.37E+00	0.00E+00	3.37E+00
		Co-58	<4.11E+00	0.00E+00	4.11E+00
		Fe-59	<7.66E+00	0.00E+00	7.66E+00
		Co-60	<4.26E+00	0.00E+00	4.26E+00
		Zn-65	<6.65E+00	0.00E+00	6.65E+00
		Zr-95	<6.15E+00	0.00E+00	6.15E+00
		Nb-95	<5.14E+00	0.00E+00	5.14E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.26E+00	0.00E+00	3.26E+00
		Cs-137	<3.94E+00	0.00E+00	3.94E+00
		BaLa-140	<8.44E+00	0.00E+00	8.44E+00
		Be-7	<3.95E+01	0.00E+00	3.95E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 132 [ INDICATOR - SSE @ 11.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400158	1/5/2016 - 2/1/2016	K-40	<5.64E+01	0.00E+00	5.64E+01
401963	2/1/2016 - 2/29/2016	Beta	1.85E+00	7.38E-01	1.13E+00
		Mn-54	<2.64E+00	0.00E+00	2.64E+00
		Co-58	<2.70E+00	0.00E+00	2.70E+00
		Fe-59	<6.44E+00	0.00E+00	6.44E+00
		Co-60	<2.76E+00	0.00E+00	2.76E+00
		Zn-65	<5.71E+00	0.00E+00	5.71E+00
		Zr-95	<5.20E+00	0.00E+00	5.20E+00
		Nb-95	<3.17E+00	0.00E+00	3.17E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<2.56E+00	0.00E+00	2.56E+00
		Cs-137	<3.38E+00	0.00E+00	3.38E+00
		BaLa-140	<4.01E+00	0.00E+00	4.01E+00
		Be-7	<3.26E+01	0.00E+00	3.26E+01
		K-40	2.71E+01	2.35E+01	3.55E+01
403606	12/7/2015 - 2/29/2016	H3DW	3.66E+02	1.23E+02	1.95E+02
405635	2/29/2016 - 3/28/2016	Beta	2.10E+00	7.56E-01	1.14E+00
		Mn-54	<1.61E+00	0.00E+00	1.61E+00
		Co-58	<2.22E+00	0.00E+00	2.22E+00
		Fe-59	<3.97E+00	0.00E+00	3.97E+00
		Co-60	<2.14E+00	0.00E+00	2.14E+00
		Zn-65	<3.52E+00	0.00E+00	3.52E+00
		Zr-95	<3.83E+00	0.00E+00	3.83E+00
		Nb-95	<2.65E+00	0.00E+00	2.65E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<1.99E+00	0.00E+00	1.99E+00
		Cs-137	<2.01E+00	0.00E+00	2.01E+00
		BaLa-140	<6.63E+00	0.00E+00	6.63E+00
		Be-7	<1.71E+01	0.00E+00	1.71E+01
		K-40	3.93E+01	1.87E+01	2.56E+01
408519	3/28/2016 - 4/25/2016	Beta	<3.58E-01	0.00E+00	1.42E+00
		Mn-54	<2.43E+00	0.00E+00	2.43E+00
		Co-58	<3.00E+00	0.00E+00	3.00E+00
		Fe-59	<6.20E+00	0.00E+00	6.20E+00
		Co-60	<3.51E+00	0.00E+00	3.51E+00
		Zn-65	<6.66E+00	0.00E+00	6.66E+00
		Zr-95	<6.99E+00	0.00E+00	6.99E+00
		Nb-95	<3.27E+00	0.00E+00	3.27E+00
		I-131	<1.02E+01	0.00E+00	1.02E+01
		Cs-134	<3.42E+00	0.00E+00	3.42E+00
		Cs-137	<2.98E+00	0.00E+00	2.98E+00
		BaLa-140	<6.05E+00	0.00E+00	6.05E+00
		Be-7	<3.00E+01	0.00E+00	3.00E+01
		K-40	3.92E+01	2.51E+01	3.53E+01
411592	4/25/2016 - 5/23/2016	Beta	<-3.1E-01	0.00E+00	1.50E+00
		Mn-54	<4.31E+00	0.00E+00	4.31E+00
		Co-58	<4.56E+00	0.00E+00	4.56E+00
		Fe-59	<7.79E+00	0.00E+00	7.79E+00
		Co-60	<3.57E+00	0.00E+00	3.57E+00
		Zn-65	<9.16E+00	0.00E+00	9.16E+00
		Zr-95	<7.69E+00	0.00E+00	7.69E+00
		Nb-95	<3.28E+00	0.00E+00	3.28E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<4.79E+00	0.00E+00	4.79E+00
		Cs-137	<3.38E+00	0.00E+00	3.38E+00
		BaLa-140	<2.38E+00	0.00E+00	2.38E+00
		Be-7	<2.87E+01	0.00E+00	2.87E+01
		K-40	<6.18E+01	0.00E+00	6.18E+01





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 132 [ INDICATOR - SSE @ 11.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
413180	2/29/2016 - 5/23/2016	H3DW	3.82E+02	1.27E+02	1.98E+02
413515	5/23/2016 - 6/20/2016	Beta	1.74E+00	8.16E-01	1.30E+00
		Mn-54	<2.47E+00	0.00E+00	2.47E+00
		Co-58	<2.73E+00	0.00E+00	2.73E+00
		Fe-59	<6.47E+00	0.00E+00	6.47E+00
		Co-60	<2.60E+00	0.00E+00	2.60E+00
		Zn-65	<6.61E+00	0.00E+00	6.61E+00
		Zr-95	<6.35E+00	0.00E+00	6.35E+00
		Nb-95	<4.39E+00	0.00E+00	4.39E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<3.09E+00	0.00E+00	3.09E+00
		Cs-137	<2.97E+00	0.00E+00	2.97E+00
		BaLa-140	<6.38E+00	0.00E+00	6.38E+00
		Be-7	<2.63E+01	0.00E+00	2.63E+01
		K-40	4.24E+01	2.19E+01	2.45E+01
416854	6/20/2016 - 7/18/2016	Beta	4.22E+00	8.52E-01	1.15E+00
		Mn-54	<2.85E+00	0.00E+00	2.85E+00
		Co-58	<3.31E+00	0.00E+00	3.31E+00
		Fe-59	<7.04E+00	0.00E+00	7.04E+00
		Co-60	<4.17E+00	0.00E+00	4.17E+00
		Zn-65	<5.30E+00	0.00E+00	5.30E+00
		Zr-95	<5.87E+00	0.00E+00	5.87E+00
		Nb-95	<4.02E+00	0.00E+00	4.02E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.48E+00	0.00E+00	3.48E+00
		Cs-137	<3.05E+00	0.00E+00	3.05E+00
		BaLa-140	<7.66E+00	0.00E+00	7.66E+00
		Be-7	<3.15E+01	0.00E+00	3.15E+01
		K-40	4.31E+01	2.27E+01	2.25E+01
418776	7/18/2016 - 8/15/2016	Beta	7.46E-01	7.71E-01	1.29E+00
		Mn-54	<3.71E+00	0.00E+00	3.71E+00
		Co-58	<2.64E+00	0.00E+00	2.64E+00
		Fe-59	<7.63E+00	0.00E+00	7.63E+00
		Co-60	<2.76E+00	0.00E+00	2.76E+00
		Zn-65	<9.13E+00	0.00E+00	9.13E+00
		Zr-95	<7.57E+00	0.00E+00	7.57E+00
		Nb-95	<5.99E+00	0.00E+00	5.99E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.48E+00	0.00E+00	3.48E+00
		Cs-137	<3.04E+00	0.00E+00	3.04E+00
		BaLa-140	<1.18E+01	0.00E+00	1.18E+01
		Be-7	<2.86E+01	0.00E+00	2.86E+01
		K-40	<5.55E+01	0.00E+00	5.55E+01
420861	5/23/2016 - 8/15/2016	H3DW	4.05E+02	1.20E+02	1.88E+02
420775	8/15/2016 - 9/12/2016	Beta	1.80E+00	7.95E-01	1.24E+00
		Mn-54	<2.28E+00	0.00E+00	2.28E+00
		Co-58	<2.45E+00	0.00E+00	2.45E+00
		Fe-59	<5.08E+00	0.00E+00	5.08E+00
		Co-60	<2.20E+00	0.00E+00	2.20E+00
		Zn-65	<4.92E+00	0.00E+00	4.92E+00
		Zr-95	<4.53E+00	0.00E+00	4.53E+00
		Nb-95	<3.41E+00	0.00E+00	3.41E+00
		I-131	<1.13E+01	0.00E+00	1.13E+01
		Cs-134	<2.52E+00	0.00E+00	2.52E+00
		Cs-137	<3.03E+00	0.00E+00	3.03E+00
		BaLa-140	<8.34E+00	0.00E+00	8.34E+00
		Be-7	<2.67E+01	0.00E+00	2.67E+01
		K-40	3.45E+01	2.29E+01	3.25E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 132 [ INDICATOR - SSE @ 11.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427441	9/12/2016 - 10/10/2016	Beta	1.15E+00	7.31E-01	1.18E+00
		Mn-54	<3.20E+00	0.00E+00	3.20E+00
		Co-58	<3.74E+00	0.00E+00	3.74E+00
		Fe-59	<7.51E+00	0.00E+00	7.51E+00
		Co-60	<4.02E+00	0.00E+00	4.02E+00
		Zn-65	<6.98E+00	0.00E+00	6.98E+00
		Zr-95	<6.64E+00	0.00E+00	6.64E+00
		Nb-95	<3.80E+00	0.00E+00	3.80E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<2.93E+00	0.00E+00	2.93E+00
		Cs-137	<2.57E+00	0.00E+00	2.57E+00
		BaLa-140	<9.05E+00	0.00E+00	9.05E+00
		Be-7	<2.88E+01	0.00E+00	2.88E+01
		K-40	<4.82E+01	0.00E+00	4.82E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427415	10/10/2016 - 11/7/2016	Beta	3.71E+00	8.64E-01	1.22E+00
		Mn-54	<2.59E+00	0.00E+00	2.59E+00
		Co-58	<3.74E+00	0.00E+00	3.74E+00
		Fe-59	<7.24E+00	0.00E+00	7.24E+00
		Co-60	<4.55E+00	0.00E+00	4.55E+00
		Zn-65	<4.84E+00	0.00E+00	4.84E+00
		Zr-95	<6.43E+00	0.00E+00	6.43E+00
		Nb-95	<2.83E+00	0.00E+00	2.83E+00
		I-131	<1.10E+01	0.00E+00	1.10E+01
		Cs-134	<3.02E+00	0.00E+00	3.02E+00
		Cs-137	<3.18E+00	0.00E+00	3.18E+00
		BaLa-140	<7.04E+00	0.00E+00	7.04E+00
		Be-7	<2.90E+01	0.00E+00	2.90E+01
		K-40	<5.13E+01	0.00E+00	5.13E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427840	8/15/2016 - 12/5/2016	H3DW	5.74E+02	1.32E+02	1.96E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429628	11/7/2016 - 12/5/2016	Beta	1.82E+00	7.61E-01	1.18E+00
		Mn-54	<3.41E+00	0.00E+00	3.41E+00
		Co-58	<3.53E+00	0.00E+00	3.53E+00
		Fe-59	<8.91E+00	0.00E+00	8.91E+00
		Co-60	<2.82E+00	0.00E+00	2.82E+00
		Zn-65	<7.88E+00	0.00E+00	7.88E+00
		Zr-95	<6.66E+00	0.00E+00	6.66E+00
		Nb-95	<5.61E+00	0.00E+00	5.61E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.78E+00	0.00E+00	3.78E+00
		Cs-137	<4.14E+00	0.00E+00	4.14E+00
		BaLa-140	<9.68E+00	0.00E+00	9.68E+00
		Be-7	<3.05E+01	0.00E+00	3.05E+01
		K-40	<5.45E+01	0.00E+00	5.45E+01

## Sample Point 136 [ CONTROL - NNE @ 12.7 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398477	12/7/2015 - 1/5/2016	Beta	1.41E+00	7.80E-01	1.24E+00
		Mn-54	<2.68E+00	0.00E+00	2.68E+00
		Co-58	<3.88E+00	0.00E+00	3.88E+00
		Fe-59	<6.70E+00	0.00E+00	6.70E+00
		Co-60	<2.57E+00	0.00E+00	2.57E+00
		Zn-65	<5.29E+00	0.00E+00	5.29E+00
		Zr-95	<4.98E+00	0.00E+00	4.98E+00
		Nb-95	<4.79E+00	0.00E+00	4.79E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<4.44E+00	0.00E+00	4.44E+00
		Cs-137	<2.88E+00	0.00E+00	2.88E+00
		BaLa-140	<9.54E+00	0.00E+00	9.54E+00
		Be-7	<2.98E+01	0.00E+00	2.98E+01
		K-40	<5.79E+01	0.00E+00	5.79E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 136 [ CONTROL - NNE @ 12.7 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400159	1/5/2016 - 2/1/2016	Beta	2.45E+00	7.90E-01	1.18E+00
		Mn-54	<4.51E+00	0.00E+00	4.51E+00
		Co-58	<3.07E+00	0.00E+00	3.07E+00
		Fe-59	<8.10E+00	0.00E+00	8.10E+00
		Co-60	<4.91E+00	0.00E+00	4.91E+00
		Zn-65	<8.37E+00	0.00E+00	8.37E+00
		Zr-95	<6.62E+00	0.00E+00	6.62E+00
		Nb-95	<4.75E+00	0.00E+00	4.75E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<4.32E+00	0.00E+00	4.32E+00
		Cs-137	<4.56E+00	0.00E+00	4.56E+00
		BaLa-140	<8.37E+00	0.00E+00	8.37E+00
		Be-7	<3.62E+01	0.00E+00	3.62E+01
		K-40	<6.49E+01	0.00E+00	6.49E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401964	2/1/2016 - 2/29/2016	Beta	1.27E+00	7.09E-01	1.13E+00
		Mn-54	<2.35E+00	0.00E+00	2.35E+00
		Co-58	<4.24E+00	0.00E+00	4.24E+00
		Fe-59	<7.90E+00	0.00E+00	7.90E+00
		Co-60	<2.88E+00	0.00E+00	2.88E+00
		Zn-65	<6.64E+00	0.00E+00	6.64E+00
		Zr-95	<6.15E+00	0.00E+00	6.15E+00
		Nb-95	<3.55E+00	0.00E+00	3.55E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<4.12E+00	0.00E+00	4.12E+00
		Cs-137	<3.60E+00	0.00E+00	3.60E+00
		BaLa-140	<8.01E+00	0.00E+00	8.01E+00
		Be-7	<3.29E+01	0.00E+00	3.29E+01
		K-40	<4.93E+01	0.00E+00	4.93E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403607	12/7/2015 - 2/29/2016	H3DW	<4.66E+01	0.00E+00	1.94E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405636	2/29/2016 - 3/28/2016	Beta	2.07E+00	7.53E-01	1.14E+00
		Mn-54	<1.75E+00	0.00E+00	1.75E+00
		Co-58	<1.88E+00	0.00E+00	1.88E+00
		Fe-59	<4.24E+00	0.00E+00	4.24E+00
		Co-60	<1.74E+00	0.00E+00	1.74E+00
		Zn-65	<3.53E+00	0.00E+00	3.53E+00
		Zr-95	<3.76E+00	0.00E+00	3.76E+00
		Nb-95	<2.40E+00	0.00E+00	2.40E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<1.70E+00	0.00E+00	1.70E+00
		Cs-137	<1.93E+00	0.00E+00	1.93E+00
		BaLa-140	<5.41E+00	0.00E+00	5.41E+00
		Be-7	<1.56E+01	0.00E+00	1.56E+01
		K-40	4.86E+01	1.95E+01	2.66E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
408520	3/28/2016 - 4/25/2016	Beta	<3.61E-01	0.00E+00	1.41E+00
		Mn-54	<3.46E+00	0.00E+00	3.46E+00
		Co-58	<3.84E+00	0.00E+00	3.84E+00
		Fe-59	<9.57E+00	0.00E+00	9.57E+00
		Co-60	<4.18E+00	0.00E+00	4.18E+00
		Zn-65	<5.51E+00	0.00E+00	5.51E+00
		Zr-95	<6.14E+00	0.00E+00	6.14E+00
		Nb-95	<4.70E+00	0.00E+00	4.70E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<3.83E+00	0.00E+00	3.83E+00
		Cs-137	<2.41E+00	0.00E+00	2.41E+00
		BaLa-140	<7.18E+00	0.00E+00	7.18E+00
		Be-7	<3.73E+01	0.00E+00	3.73E+01
		K-40	5.30E+01	3.21E+01	4.16E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
411593	4/25/2016 - 5/23/2016	Beta	<4.1E-01	0.00E+00	1.50E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 136 [ CONTROL - NNE @ 12.7 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
411593	4/25/2016 - 5/23/2016	Mn-54	<2.76E+00	0.00E+00	2.76E+00
		Co-58	<3.31E+00	0.00E+00	3.31E+00
		Fe-59	<7.22E+00	0.00E+00	7.22E+00
		Co-60	<2.67E+00	0.00E+00	2.67E+00
		Zn-65	<5.76E+00	0.00E+00	5.76E+00
		Zr-95	<6.30E+00	0.00E+00	6.30E+00
		Nb-95	<4.09E+00	0.00E+00	4.09E+00
		I-131	<1.03E+01	0.00E+00	1.03E+01
		Cs-134	<3.33E+00	0.00E+00	3.33E+00
		Cs-137	<3.51E+00	0.00E+00	3.51E+00
		BaLa-140	<6.37E+00	0.00E+00	6.37E+00
		Be-7	<2.64E+01	0.00E+00	2.64E+01
		K-40	<6.13E+01	0.00E+00	6.13E+01
		413181	2/29/2016 - 5/23/2016	H3DW	<-3.4E+01
413516	5/23/2016 - 6/20/2016	Beta	2.32E+00	8.37E-01	1.30E+00
		Mn-54	<2.37E+00	0.00E+00	2.37E+00
		Co-58	<2.07E+00	0.00E+00	2.07E+00
		Fe-59	<8.76E+00	0.00E+00	8.76E+00
		Co-60	<4.11E+00	0.00E+00	4.11E+00
		Zn-65	<5.84E+00	0.00E+00	5.84E+00
		Zr-95	<6.54E+00	0.00E+00	6.54E+00
		Nb-95	<5.23E+00	0.00E+00	5.23E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<4.25E+00	0.00E+00	4.25E+00
		Cs-137	<4.49E+00	0.00E+00	4.49E+00
		BaLa-140	<8.47E+00	0.00E+00	8.47E+00
		Be-7	<3.29E+01	0.00E+00	3.29E+01
		K-40	<5.91E+01	0.00E+00	5.91E+01
416855	6/20/2016 - 7/18/2016	Beta	2.39E+00	7.72E-01	1.14E+00
		Mn-54	<2.40E+00	0.00E+00	2.40E+00
		Co-58	<2.34E+00	0.00E+00	2.34E+00
		Fe-59	<5.74E+00	0.00E+00	5.74E+00
		Co-60	<2.13E+00	0.00E+00	2.13E+00
		Zn-65	<5.92E+00	0.00E+00	5.92E+00
		Zr-95	<4.15E+00	0.00E+00	4.15E+00
		Nb-95	<3.33E+00	0.00E+00	3.33E+00
		I-131	<9.67E+00	0.00E+00	9.67E+00
		Cs-134	<2.74E+00	0.00E+00	2.74E+00
		Cs-137	<3.03E+00	0.00E+00	3.03E+00
		BaLa-140	<7.24E+00	0.00E+00	7.24E+00
		Be-7	<2.30E+01	0.00E+00	2.30E+01
		K-40	3.59E+01	2.69E+01	4.08E+01
418777	7/18/2016 - 8/15/2016	Beta	1.40E+00	8.06E-01	1.30E+00
		Mn-54	<2.35E+00	0.00E+00	2.35E+00
		Co-58	<3.92E+00	0.00E+00	3.92E+00
		Fe-59	<6.93E+00	0.00E+00	6.93E+00
		Co-60	<2.42E+00	0.00E+00	2.42E+00
		Zn-65	<6.18E+00	0.00E+00	6.18E+00
		Zr-95	<5.91E+00	0.00E+00	5.91E+00
		Nb-95	<4.12E+00	0.00E+00	4.12E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.36E+00	0.00E+00	3.36E+00
		Cs-137	<4.05E+00	0.00E+00	4.05E+00
		BaLa-140	<8.94E+00	0.00E+00	8.94E+00
		Be-7	<2.33E+01	0.00E+00	2.33E+01
		K-40	3.31E+01	3.26E+01	5.15E+01
420862	5/23/2016 - 8/15/2016	H3DW	<1.20E+02	0.00E+00	1.90E+02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 136 [ CONTROL - NNE @ 12.7 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA		
420776	8/15/2016 - 9/12/2016	Beta	1.37E+00	7.84E-01	1.25E+00		
		Mn-54	<2.73E+00	0.00E+00	2.73E+00		
		Co-58	<3.69E+00	0.00E+00	3.69E+00		
		Fe-59	<7.04E+00	0.00E+00	7.04E+00		
		Co-60	<2.64E+00	0.00E+00	2.64E+00		
		Zn-65	<7.47E+00	0.00E+00	7.47E+00		
		Zr-95	<6.20E+00	0.00E+00	6.20E+00		
		Nb-95	<4.30E+00	0.00E+00	4.30E+00		
		I-131	<1.12E+01	0.00E+00	1.12E+01		
		Cs-134	<3.24E+00	0.00E+00	3.24E+00		
		Cs-137	<3.48E+00	0.00E+00	3.48E+00		
		BaLa-140	<4.40E+00	0.00E+00	4.40E+00		
		Be-7	<2.31E+01	0.00E+00	2.31E+01		
		K-40	4.63E+01	3.21E+01	4.74E+01		
		424742	9/12/2016 - 10/10/2016	Beta	1.33E+00	7.38E-01	1.18E+00
				Mn-54	<3.30E+00	0.00E+00	3.30E+00
Co-58	<3.23E+00			0.00E+00	3.23E+00		
Fe-59	<7.93E+00			0.00E+00	7.93E+00		
Co-60	<2.83E+00			0.00E+00	2.83E+00		
Zn-65	<5.77E+00			0.00E+00	5.77E+00		
Zr-95	<5.20E+00			0.00E+00	5.20E+00		
Nb-95	<4.12E+00			0.00E+00	4.12E+00		
I-131	<1.12E+01			0.00E+00	1.12E+01		
Cs-134	<2.82E+00			0.00E+00	2.82E+00		
Cs-137	<2.55E+00			0.00E+00	2.55E+00		
BaLa-140	<6.34E+00			0.00E+00	6.34E+00		
Be-7	<2.94E+01			0.00E+00	2.94E+01		
K-40	6.19E+01			3.53E+01	5.04E+01		
427416	10/10/2016 - 11/7/2016			Beta	2.06E+00	7.91E-01	1.22E+00
				Mn-54	<3.25E+00	0.00E+00	3.25E+00
		Co-58	<2.76E+00	0.00E+00	2.76E+00		
		Fe-59	<6.92E+00	0.00E+00	6.92E+00		
		Co-60	<3.37E+00	0.00E+00	3.37E+00		
		Zn-65	<7.17E+00	0.00E+00	7.17E+00		
		Zr-95	<5.16E+00	0.00E+00	5.16E+00		
		Nb-95	<3.41E+00	0.00E+00	3.41E+00		
		I-131	<1.10E+01	0.00E+00	1.10E+01		
		Cs-134	<3.35E+00	0.00E+00	3.35E+00		
		Cs-137	<2.56E+00	0.00E+00	2.56E+00		
		BaLa-140	<8.33E+00	0.00E+00	8.33E+00		
		Be-7	<2.90E+01	0.00E+00	2.90E+01		
		K-40	3.52E+01	3.18E+01	4.94E+01		
		427841	8/15/2016 - 12/5/2016	H3DW	<-2.2E+01	0.00E+00	1.96E+02
429629	11/7/2016 - 12/5/2016	Beta	1.75E+00	7.59E-01	1.18E+00		
		Mn-54	<3.32E+00	0.00E+00	3.32E+00		
		Co-58	<5.44E+00	0.00E+00	5.44E+00		
		Fe-59	<7.95E+00	0.00E+00	7.95E+00		
		Co-60	<4.09E+00	0.00E+00	4.09E+00		
		Zn-65	<9.37E+00	0.00E+00	9.37E+00		
		Zr-95	<6.97E+00	0.00E+00	6.97E+00		
		Nb-95	<4.66E+00	0.00E+00	4.66E+00		
		I-131	<1.18E+01	0.00E+00	1.18E+01		
		Cs-134	<4.89E+00	0.00E+00	4.89E+00		
		Cs-137	<3.46E+00	0.00E+00	3.46E+00		
		BaLa-140	<9.70E+00	0.00E+00	9.70E+00		
		Be-7	<3.54E+01	0.00E+00	3.54E+01		
		K-40	<7.94E+01	0.00E+00	7.94E+01		



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 194 [ INDICATOR - NNW @ 6.73 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398478	12/7/2015 - 1/5/2016	Beta	2.04E+00	8.10E-01	1.25E+00
		Mn-54	<4.04E+00	0.00E+00	4.05E+00
		Co-58	<4.51E+00	0.00E+00	4.51E+00
		Fe-59	<7.76E+00	0.00E+00	7.76E+00
		Co-60	<3.51E+00	0.00E+00	3.51E+00
		Zn-65	<9.51E+00	0.00E+00	9.51E+00
		Zr-95	<6.77E+00	0.00E+00	6.77E+00
		Nb-95	<5.53E+00	0.00E+00	5.53E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<4.04E+00	0.00E+00	4.04E+00
		Cs-137	<3.91E+00	0.00E+00	3.91E+00
		BaLa-140	<8.67E+00	0.00E+00	8.67E+00
		Be-7	<4.57E+01	0.00E+00	4.57E+01
		K-40	<7.28E+01	0.00E+00	7.28E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
400160	1/5/2016 - 2/1/2016	Beta	1.32E+00	7.39E-01	1.18E+00
		Mn-54	<3.13E+00	0.00E+00	3.13E+00
		Co-58	<2.82E+00	0.00E+00	2.82E+00
		Fe-59	<6.68E+00	0.00E+00	6.68E+00
		Co-60	<3.86E+00	0.00E+00	3.86E+00
		Zn-65	<5.47E+00	0.00E+00	5.47E+00
		Zr-95	<9.61E+00	0.00E+00	9.61E+00
		Nb-95	<3.80E+00	0.00E+00	3.80E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.18E+00	0.00E+00	3.18E+00
		Cs-137	<3.86E+00	0.00E+00	3.86E+00
		BaLa-140	<7.65E+00	0.00E+00	7.65E+00
		Be-7	<3.33E+01	0.00E+00	3.33E+01
		K-40	3.41E+01	3.03E+01	4.46E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401965	2/1/2016 - 2/29/2016	Beta	1.76E+00	7.33E-01	1.13E+00
		Mn-54	<3.87E+00	0.00E+00	3.87E+00
		Co-58	<3.10E+00	0.00E+00	3.10E+00
		Fe-59	<7.39E+00	0.00E+00	7.39E+00
		Co-60	<3.75E+00	0.00E+00	3.75E+00
		Zn-65	<6.32E+00	0.00E+00	6.32E+00
		Zr-95	<7.00E+00	0.00E+00	7.00E+00
		Nb-95	<3.48E+00	0.00E+00	3.48E+00
		I-131	<1.15E+01	0.00E+00	1.15E+01
		Cs-134	<3.94E+00	0.00E+00	3.94E+00
		Cs-137	<3.75E+00	0.00E+00	3.75E+00
		BaLa-140	<8.48E+00	0.00E+00	8.48E+00
		Be-7	<3.45E+01	0.00E+00	3.45E+01
		K-40	<6.66E+01	0.00E+00	6.66E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403608	12/7/2015 - 2/29/2016	H3DW	<-3.2E+01	0.00E+00	1.88E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
405637	2/29/2016 - 3/28/2016	Beta	1.66E+00	7.34E-01	1.14E+00
		Mn-54	<1.66E+00	0.00E+00	1.66E+00
		Co-58	<1.68E+00	0.00E+00	1.68E+00
		Fe-59	<4.07E+00	0.00E+00	4.07E+00
		Co-60	<1.63E+00	0.00E+00	1.63E+00
		Zn-65	<2.88E+00	0.00E+00	2.88E+00
		Zr-95	<3.53E+00	0.00E+00	3.53E+00
		Nb-95	<2.36E+00	0.00E+00	2.36E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<1.53E+00	0.00E+00	1.53E+00
		Cs-137	<2.02E+00	0.00E+00	2.02E+00
		BaLa-140	<5.90E+00	0.00E+00	5.90E+00
		Be-7	<1.47E+01	0.00E+00	1.47E+01
		K-40	4.12E+01	1.92E+01	2.72E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
408521	3/28/2016 - 4/25/2016	Beta	<1.81E-01	0.00E+00	1.42E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 194 [ INDICATOR - NNW @ 6.73 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
408521	3/28/2016 - 4/25/2016	Mn-54	<2.54E+00	0.00E+00	2.54E+00
		Co-58	<2.96E+00	0.00E+00	2.96E+00
		Fe-59	<5.56E+00	0.00E+00	5.56E+00
		Co-60	<2.46E+00	0.00E+00	2.46E+00
		Zn-65	<6.10E+00	0.00E+00	6.10E+00
		Zr-95	<5.13E+00	0.00E+00	5.13E+00
		Nb-95	<3.40E+00	0.00E+00	3.40E+00
		I-131	<9.41E+00	0.00E+00	9.41E+00
		Cs-134	<2.82E+00	0.00E+00	2.82E+00
		Cs-137	<2.26E+00	0.00E+00	2.26E+00
		BaLa-140	<3.16E+00	0.00E+00	3.16E+00
		Be-7	<2.30E+01	0.00E+00	2.30E+01
		K-40	4.29E+01	2.29E+01	3.03E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
411594	4/25/2016 - 5/23/2016	Beta	9.12E-01	8.97E-01	1.49E+00
		Mn-54	<3.01E+00	0.00E+00	3.01E+00
		Co-58	<3.02E+00	0.00E+00	3.02E+00
		Fe-59	<5.42E+00	0.00E+00	5.42E+00
		Co-60	<3.27E+00	0.00E+00	3.27E+00
		Zn-65	<6.40E+00	0.00E+00	6.40E+00
		Zr-95	<6.79E+00	0.00E+00	6.79E+00
		Nb-95	<4.27E+00	0.00E+00	4.27E+00
		I-131	<1.06E+01	0.00E+00	1.06E+01
		Cs-134	<3.20E+00	0.00E+00	3.20E+00
		Cs-137	<3.37E+00	0.00E+00	3.37E+00
		BaLa-140	<9.18E+00	0.00E+00	9.18E+00
		Be-7	<2.93E+01	0.00E+00	2.93E+01
		K-40	<5.97E+01	0.00E+00	5.97E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
413182	2/29/2016 - 5/23/2016	H3DW	<-1.2E+01	0.00E+00	2.01E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
413517	5/23/2016 - 6/20/2016	Beta	1.80E+00	8.16E-01	1.30E+00
		Mn-54	<3.18E+00	0.00E+00	3.18E+00
		Co-58	<4.24E+00	0.00E+00	4.24E+00
		Fe-59	<6.43E+00	0.00E+00	6.43E+00
		Co-60	<3.66E+00	0.00E+00	3.66E+00
		Zn-65	<6.71E+00	0.00E+00	6.71E+00
		Zr-95	<7.17E+00	0.00E+00	7.17E+00
		Nb-95	<4.40E+00	0.00E+00	4.40E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.86E+00	0.00E+00	3.86E+00
		Cs-137	<3.55E+00	0.00E+00	3.55E+00
		BaLa-140	<8.27E+00	0.00E+00	8.27E+00
		Be-7	<2.53E+01	0.00E+00	2.53E+01
		K-40	2.83E+01	3.37E+01	5.50E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
416856	6/20/2016 - 7/18/2016	Beta	2.22E+00	7.61E-01	1.14E+00
		Mn-54	<2.70E+00	0.00E+00	2.70E+00
		Co-58	<3.19E+00	0.00E+00	3.19E+00
		Fe-59	<6.24E+00	0.00E+00	6.24E+00
		Co-60	<3.88E+00	0.00E+00	3.88E+00
		Zn-65	<4.40E+00	0.00E+00	4.40E+00
		Zr-95	<6.93E+00	0.00E+00	6.93E+00
		Nb-95	<4.35E+00	0.00E+00	4.35E+00
		I-131	<1.13E+01	0.00E+00	1.13E+01
		Cs-134	<3.37E+00	0.00E+00	3.37E+00
		Cs-137	<3.66E+00	0.00E+00	3.66E+00
		BaLa-140	<8.44E+00	0.00E+00	8.44E+00
		Be-7	<2.55E+01	0.00E+00	2.55E+01
		K-40	2.99E+01	2.74E+01	4.18E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
418778	7/18/2016 - 8/15/2016	Beta	9.05E-01	7.86E-01	1.30E+00
		Mn-54	<3.83E+00	0.00E+00	3.83E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 194 [ INDICATOR - NNW @ 6.73 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
418778	7/18/2016 - 8/15/2016	Co-58	<3.50E+00	0.00E+00	3.50E+00
		Fe-59	<7.80E+00	0.00E+00	7.80E+00
		Co-60	<4.51E+00	0.00E+00	4.51E+00
		Zn-65	<6.26E+00	0.00E+00	6.26E+00
		Zr-95	<6.87E+00	0.00E+00	6.87E+00
		Nb-95	<2.41E+00	0.00E+00	2.41E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<4.08E+00	0.00E+00	4.08E+00
		Cs-137	<3.41E+00	0.00E+00	3.41E+00
		BaLa-140	<9.81E+00	0.00E+00	9.81E+00
		Be-7	<3.49E+01	0.00E+00	3.49E+01
		K-40	4.70E+01	3.27E+01	4.55E+01
		420863	5/23/2016 - 8/15/2016	H3DW	<-3.7E+01
420777	8/15/2016 - 9/12/2016	Beta	5.09E+00	9.36E-01	1.25E+00
		Mn-54	<3.00E+00	0.00E+00	3.00E+00
		Co-58	<1.95E+00	0.00E+00	1.95E+00
		Fe-59	<5.87E+00	0.00E+00	5.87E+00
		Co-60	<2.33E+00	0.00E+00	2.33E+00
		Zn-65	<5.37E+00	0.00E+00	5.37E+00
		Zr-95	<4.32E+00	0.00E+00	4.32E+00
		Nb-95	<3.34E+00	0.00E+00	3.34E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<3.23E+00	0.00E+00	3.23E+00
		Cs-137	<2.63E+00	0.00E+00	2.63E+00
		BaLa-140	<7.47E+00	0.00E+00	7.47E+00
		Be-7	<2.57E+01	0.00E+00	2.57E+01
		K-40	<4.20E+01	0.00E+00	4.20E+01
		424743	9/12/2016 - 10/10/2016	Beta	2.80E+00
Mn-54	<3.26E+00			0.00E+00	3.26E+00
Co-58	<3.37E+00			0.00E+00	3.37E+00
Fe-59	<8.04E+00			0.00E+00	8.04E+00
Co-60	<8.41E-01			0.00E+00	8.41E-01
Zn-65	<6.87E+00			0.00E+00	6.87E+00
Zr-95	<8.57E+00			0.00E+00	8.57E+00
Nb-95	<5.43E+00			0.00E+00	5.43E+00
I-131	<1.18E+01			0.00E+00	1.18E+01
Cs-134	<4.07E+00			0.00E+00	4.07E+00
Cs-137	<3.90E+00			0.00E+00	3.90E+00
BaLa-140	<9.26E+00			0.00E+00	9.26E+00
Be-7	<2.87E+01			0.00E+00	2.87E+01
K-40	<7.70E+01			0.00E+00	7.70E+01
427417	10/10/2016 - 11/7/2016			Beta	1.08E+00
		Mn-54	<3.71E+00	0.00E+00	3.71E+00
		Co-58	<3.93E+00	0.00E+00	3.93E+00
		Fe-59	<7.01E+00	0.00E+00	7.01E+00
		Co-60	<3.88E+00	0.00E+00	3.88E+00
		Zn-65	<6.62E+00	0.00E+00	6.62E+00
		Zr-95	<6.66E+00	0.00E+00	6.66E+00
		Nb-95	<4.89E+00	0.00E+00	4.89E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<2.73E+00	0.00E+00	2.73E+00
		Cs-137	<4.00E+00	0.00E+00	4.00E+00
		BaLa-140	<8.68E+00	0.00E+00	8.68E+00
		Be-7	<2.51E+01	0.00E+00	2.51E+01
		K-40	<6.82E+01	0.00E+00	6.82E+01
		427842	8/15/2016 - 12/5/2016	H3DW	<8.54E+01
429630	11/7/2016 - 12/5/2016	Beta	1.56E+00	7.47E-01	1.17E+00





**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: DRINKING WATER Concentration (Activity): pCi/l

Sample Point 194 [ INDICATOR - NNW @ 6.73 miles ]

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
429630	11/7/2016 - 12/5/2016		Mn-54	<4.41E+00	0.00E+00	4.41E+00
			Co-58	<3.83E+00	0.00E+00	3.83E+00
			Fe-59	<5.09E+00	0.00E+00	5.09E+00
			Co-60	<4.27E+00	0.00E+00	4.27E+00
			Zn-65	<1.09E+01	0.00E+00	1.09E+01
			Zr-95	<9.38E+00	0.00E+00	9.38E+00
			Nb-95	<5.15E+00	0.00E+00	5.15E+00
			I-131	<1.20E+01	0.00E+00	1.20E+01
			Cs-134	<4.66E+00	0.00E+00	4.66E+00
			Cs-137	<4.08E+00	0.00E+00	4.08E+00
			BaLa-140	<1.01E+01	0.00E+00	1.01E+01
			Be-7	<3.41E+01	0.00E+00	3.41E+01
			K-40	<8.28E+01	0.00E+00	8.28E+01

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 129 [ INDICATOR - ENE @ 0.51 miles ]

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
407493	4/12/2016 - 4/12/2016	BOTMFEDER	Mn-54	<1.10E+01	0.00E+00	1.10E+01
			Co-58	<1.23E+01	0.00E+00	1.23E+01
			Fe-59	<2.89E+01	0.00E+00	2.89E+01
			Co-60	<1.72E+01	0.00E+00	1.72E+01
			Zn-65	<2.15E+01	0.00E+00	2.15E+01
			Nb-95	<1.67E+01	0.00E+00	1.67E+01
			I-131	<1.72E+01	0.00E+00	1.72E+01
			Cs-134	<1.53E+01	0.00E+00	1.53E+01
			Cs-137	1.14E+01	9.95E+00	1.49E+01
			Be-7	<8.49E+01	0.00E+00	8.49E+01
			K-40	3.32E+03	5.11E+02	2.42E+02
			Ag-110M	<1.18E+01	0.00E+00	1.18E+01
			Sb-122	<6.20E+01	0.00E+00	6.20E+01
			Sb-125	<2.36E+01	0.00E+00	2.36E+01

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
407492	4/14/2016 - 4/14/2016	FREESWIM	Mn-54	<2.02E+01	0.00E+00	2.02E+01
			Co-58	<2.70E+01	0.00E+00	2.70E+01
			Fe-59	<3.27E+01	0.00E+00	3.27E+01
			Co-60	<3.28E+01	0.00E+00	3.28E+01
			Zn-65	<5.75E+01	0.00E+00	5.75E+01
			Nb-95	<2.05E+01	0.00E+00	2.05E+01
			I-131	<2.39E+01	0.00E+00	2.39E+01
			Cs-134	<1.95E+01	0.00E+00	1.95E+01
			Cs-137	<3.28E+01	0.00E+00	3.28E+01
			Be-7	<1.60E+02	0.00E+00	1.60E+02
			K-40	3.92E+03	7.42E+02	3.00E+02
			Ag-110M	<2.29E+01	0.00E+00	2.29E+01
			Sb-122	<8.42E+01	0.00E+00	8.42E+01
			Sb-125	<4.02E+01	0.00E+00	4.02E+01

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
407494	4/14/2016 - 4/14/2016	FREESWIM	Mn-54	<2.03E+01	0.00E+00	2.03E+01
			Co-58	<2.60E+01	0.00E+00	2.60E+01
			Fe-59	<6.04E+01	0.00E+00	6.04E+01
			Co-60	<5.23E+01	0.00E+00	5.23E+01
			Zn-65	<1.05E+02	0.00E+00	1.05E+02
			Nb-95	<3.66E+01	0.00E+00	3.66E+01
			I-131	<3.76E+01	0.00E+00	3.76E+01
			Cs-134	<2.86E+01	0.00E+00	2.86E+01
			Cs-137	<4.42E+01	0.00E+00	4.42E+01
			Be-7	<2.52E+02	0.00E+00	2.52E+02
			K-40	2.95E+03	7.59E+02	4.60E+02
			Ag-110M	<2.86E+01	0.00E+00	2.86E+01
			Sb-122	<1.50E+02	0.00E+00	1.50E+02
			Sb-125	<7.19E+01	0.00E+00	7.19E+01

Sample ID:	Sample Dates:		Nuclide	Activity	2 Sigma Error	MDA
425363	10/3/2016 - 10/3/2016	FREESWIM	Mn-54	<1.60E+01	0.00E+00	1.60E+01
			Co-58	<2.86E+01	0.00E+00	2.86E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 129 [ INDICATOR - ENE @ 0.51 miles ]

Sample ID:	425363	Sample Dates:	10/3/2016 - 10/3/2016	FREESWIM	Nuclide	Activity	2 Sigma Error	MDA
					Fe-59	<3.69E+01	0.00E+00	3.69E+01
					Co-60	<3.40E+01	0.00E+00	3.40E+01
					Zn-65	<6.63E+01	0.00E+00	6.63E+01
					Nb-95	<3.02E+01	0.00E+00	3.02E+01
					I-131	<2.72E+01	0.00E+00	2.72E+01
					Cs-134	<3.66E+01	0.00E+00	3.66E+01
					Cs-137	<3.16E+01	0.00E+00	3.16E+01
					Be-7	<1.66E+02	0.00E+00	1.66E+02
					K-40	4.01E+03	7.81E+02	8.57E+01
					Ag-110M	<2.65E+01	0.00E+00	2.65E+01
					Sb-122	<6.71E+01	0.00E+00	6.71E+01
					Sb-125	<6.88E+01	0.00E+00	6.88E+01

Sample ID:	425364	Sample Dates:	10/3/2016 - 10/4/2016	FREESWIM	Nuclide	Activity	2 Sigma Error	MDA
					Mn-54	<1.83E+01	0.00E+00	1.83E+01
					Co-58	<1.64E+01	0.00E+00	1.65E+01
					Fe-59	<3.98E+01	0.00E+00	3.98E+01
					Co-60	<2.08E+01	0.00E+00	2.08E+01
					Zn-65	<3.33E+01	0.00E+00	3.33E+01
					Nb-95	<1.15E+01	0.00E+00	1.15E+01
					I-131	<1.69E+01	0.00E+00	1.69E+01
					Cs-134	<1.84E+01	0.00E+00	1.84E+01
					Cs-137	<1.77E+01	0.00E+00	1.77E+01
					Be-7	<6.41E+01	0.00E+00	6.41E+01
					K-40	2.00E+03	4.07E+02	2.29E+02
					Ag-110M	<1.42E+01	0.00E+00	1.42E+01
					Sb-122	<3.00E+01	0.00E+00	3.00E+01
					Sb-125	<3.45E+01	0.00E+00	3.45E+01

Sample ID:	425365	Sample Dates:	10/4/2016 - 10/5/2016	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	MDA
					Mn-54	<1.58E+01	0.00E+00	1.58E+01
					Co-58	<1.22E+01	0.00E+00	1.22E+01
					Fe-59	<3.58E+01	0.00E+00	3.58E+01
					Co-60	<2.30E+01	0.00E+00	2.30E+01
					Zn-65	<3.10E+01	0.00E+00	3.10E+01
					Nb-95	<1.78E+01	0.00E+00	1.78E+01
					I-131	<1.61E+01	0.00E+00	1.61E+01
					Cs-134	<1.59E+01	0.00E+00	1.59E+01
					Cs-137	<1.92E+01	0.00E+00	1.92E+01
					Be-7	<7.66E+01	0.00E+00	7.66E+01
					K-40	3.19E+03	5.79E+02	3.16E+02
					Ag-110M	<1.71E+01	0.00E+00	1.71E+01
					Sb-122	<2.61E+01	0.00E+00	2.61E+01
					Sb-125	<3.95E+01	0.00E+00	3.95E+01

## Sample Point 137 [ CONTROL - N @ 12 miles ]

Sample ID:	407495	Sample Dates:	4/13/2016 - 4/13/2016	FREESWIM	Nuclide	Activity	2 Sigma Error	MDA
					Mn-54	<2.07E+01	0.00E+00	2.07E+01
					Co-58	<2.12E+01	0.00E+00	2.12E+01
					Fe-59	<6.48E+01	0.00E+00	6.48E+01
					Co-60	<2.98E+01	0.00E+00	2.98E+01
					Zn-65	<6.40E+01	0.00E+00	6.40E+01
					Nb-95	<2.38E+01	0.00E+00	2.38E+01
					I-131	<3.93E+01	0.00E+00	3.93E+01
					Cs-134	<1.58E+01	0.00E+00	1.58E+01
					Cs-137	<3.08E+01	0.00E+00	3.08E+01
					Be-7	<1.89E+02	0.00E+00	1.89E+02
					K-40	3.83E+03	7.20E+02	7.52E+01
					Ag-110M	<1.54E+01	0.00E+00	1.54E+01
					Sb-122	<1.02E+02	0.00E+00	1.02E+02
					Sb-125	<6.35E+01	0.00E+00	6.35E+01

Sample ID:	407496	Sample Dates:	4/13/2016 - 4/13/2016	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	MDA
					Mn-54	<2.41E+01	0.00E+00	2.41E+01
					Co-58	<2.34E+01	0.00E+00	2.34E+01
					Fe-59	<4.37E+01	0.00E+00	4.37E+01
					Co-60	<3.09E+01	0.00E+00	3.09E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 137 [ CONTROL - N @ 12 miles ]

Sample ID:	Sample Dates:	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	MDA			
407496	4/13/2016 - 4/13/2016		Zn-65	<4.64E+01	0.00E+00	4.64E+01			
			Nb-95	<1.69E+01	0.00E+00	1.69E+01			
			I-131	<2.25E+01	0.00E+00	2.25E+01			
			Cs-134	<2.39E+01	0.00E+00	2.39E+01			
			Cs-137	<2.19E+01	0.00E+00	2.19E+01			
			Be-7	<1.66E+02	0.00E+00	1.66E+02			
			K-40	3.54E+03	6.41E+02	2.86E+02			
			Ag-110M	<1.42E+01	0.00E+00	1.42E+01			
			Sb-122	<1.01E+02	0.00E+00	1.01E+02			
			Sb-125	<4.78E+01	0.00E+00	4.78E+01			
			407497	4/13/2016 - 4/13/2016	FREESWIM	Mn-54	<1.99E+01	0.00E+00	1.99E+01
						Co-58	<1.38E+01	0.00E+00	1.38E+01
Fe-59	<4.23E+01	0.00E+00				4.23E+01			
Co-60	<1.33E+01	0.00E+00				1.33E+01			
Zn-65	<3.43E+01	0.00E+00				3.43E+01			
Nb-95	<1.95E+01	0.00E+00				1.95E+01			
I-131	<1.87E+01	0.00E+00				1.87E+01			
Cs-134	<1.98E+01	0.00E+00				1.98E+01			
Cs-137	<1.70E+01	0.00E+00				1.70E+01			
Be-7	<1.08E+02	0.00E+00				1.08E+02			
K-40	2.40E+03	4.75E+02				2.43E+02			
Ag-110M	<1.43E+01	0.00E+00				1.43E+01			
Sb-122	<7.27E+01	0.00E+00				7.27E+01			
Sb-125	<3.28E+01	0.00E+00				3.28E+01			
425366	10/4/2016 - 10/4/2016	FREESWIM				Mn-54	<3.76E+01	0.00E+00	3.76E+01
			Co-58	<2.83E+01	0.00E+00	2.83E+01			
			Fe-59	<7.06E+01	0.00E+00	7.06E+01			
			Co-60	<4.13E+01	0.00E+00	4.13E+01			
			Zn-65	<7.20E+01	0.00E+00	7.20E+01			
			Nb-95	<3.23E+01	0.00E+00	3.23E+01			
			I-131	<3.13E+01	0.00E+00	3.13E+01			
			Cs-134	<3.19E+01	0.00E+00	3.19E+01			
			Cs-137	<3.45E+01	0.00E+00	3.45E+01			
			Be-7	<1.78E+02	0.00E+00	1.78E+02			
			K-40	4.09E+03	8.58E+02	5.14E+02			
			Ag-110M	<3.07E+01	0.00E+00	3.07E+01			
			Sb-122	<5.67E+01	0.00E+00	5.67E+01			
			Sb-125	<6.63E+01	0.00E+00	6.63E+01			
			425367	10/4/2016 - 10/4/2016	FREESWIM	Mn-54	<1.36E+01	0.00E+00	1.36E+01
Co-58	<1.36E+01	0.00E+00				1.36E+01			
Fe-59	<3.46E+01	0.00E+00				3.46E+01			
Co-60	<4.98E+00	0.00E+00				4.98E+00			
Zn-65	<2.36E+01	0.00E+00				2.36E+01			
Nb-95	<1.61E+01	0.00E+00				1.61E+01			
I-131	<1.54E+01	0.00E+00				1.54E+01			
Cs-134	<2.26E+01	0.00E+00				2.26E+01			
Cs-137	<1.73E+01	0.00E+00				1.73E+01			
Be-7	<1.20E+02	0.00E+00				1.20E+02			
K-40	2.64E+03	4.98E+02				1.97E+02			
Ag-110M	<1.18E+01	0.00E+00				1.18E+01			
Sb-122	<2.32E+01	0.00E+00				2.32E+01			
Sb-125	<3.31E+01	0.00E+00				3.31E+01			
425368	10/4/2016 - 10/4/2016	BOTMFEEDER				Mn-54	<2.08E+01	0.00E+00	2.08E+01
			Co-58	<1.79E+01	0.00E+00	1.79E+01			
			Fe-59	<4.74E+01	0.00E+00	4.74E+01			
			Co-60	<3.02E+01	0.00E+00	3.02E+01			
			Zn-65	<6.43E+01	0.00E+00	6.43E+01			
			Nb-95	<2.97E+01	0.00E+00	2.97E+01			
			I-131	<2.09E+01	0.00E+00	2.09E+01			
			Cs-134	<2.61E+01	0.00E+00	2.61E+01			



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 137 [ CONTROL - N @ 12 miles ]

Sample ID:	425368	Sample Dates:	10/4/2016 - 10/4/2016	BOTMFEEDER	Nuclide	Activity	2 Sigma Error	MDA
					Cs-137	<2.82E+01	0.00E+00	2.82E+01
					Be-7	<2.03E+02	0.00E+00	2.03E+02
					K-40	3.30E+03	6.65E+02	7.64E+01
					Ag-110M	<1.55E+01	0.00E+00	1.55E+01
					Sb-122	<3.57E+01	0.00E+00	3.57E+01
					Sb-125	<5.80E+01	0.00E+00	5.80E+01

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 141 [ CONTROL - WNW @ 14.8 miles ]

Sample ID:	399286	Sample Dates:	1/11/2016 - 1/11/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<6.48E-01	0.00E+00	6.48E-01
					I-131	<6.31E+00	0.00E+00	6.31E+00
					Cs-134	<7.54E+00	0.00E+00	7.54E+00
					Cs-137	<8.22E+00	0.00E+00	8.22E+00
					BaLa-140	<7.56E+00	0.00E+00	7.56E+00
					Be-7	<7.19E+01	0.00E+00	7.19E+01
					K-40	1.50E+03	2.47E+02	1.61E+02

Sample ID:	400389	Sample Dates:	1/25/2016 - 1/25/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<6.41E-01	0.00E+00	6.41E-01
					I-131	<4.99E+00	0.00E+00	4.99E+00
					Cs-134	<5.15E+00	0.00E+00	5.15E+00
					Cs-137	<8.54E+00	0.00E+00	8.54E+00
					BaLa-140	<5.97E+00	0.00E+00	5.97E+00
					Be-7	<5.11E+01	0.00E+00	5.11E+01
					K-40	1.31E+03	2.23E+02	1.06E+02

Sample ID:	401381	Sample Dates:	2/8/2016 - 2/8/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<5.67E-01	0.00E+00	5.67E-01
					I-131	<4.81E+00	0.00E+00	4.81E+00
					Cs-134	<6.37E+00	0.00E+00	6.37E+00
					Cs-137	<7.44E+00	0.00E+00	7.44E+00
					BaLa-140	<7.30E+00	0.00E+00	7.30E+00
					Be-7	<5.60E+01	0.00E+00	5.60E+01
					K-40	1.43E+03	2.33E+02	1.22E+02

Sample ID:	402347	Sample Dates:	2/22/2016 - 2/22/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<6.46E-01	0.00E+00	6.46E-01
					I-131	<5.10E+00	0.00E+00	5.10E+00
					Cs-134	<6.42E+00	0.00E+00	6.42E+00
					Cs-137	<7.49E+00	0.00E+00	7.49E+00
					BaLa-140	<7.55E+00	0.00E+00	7.55E+00
					Be-7	<5.21E+01	0.00E+00	5.21E+01
					K-40	1.44E+03	2.28E+02	7.85E+01

Sample ID:	404562	Sample Dates:	3/7/2016 - 3/7/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<5.11E-01	0.00E+00	5.11E-01
					I-131	<5.53E+00	0.00E+00	5.53E+00
					Cs-134	<8.60E+00	0.00E+00	8.60E+00
					Cs-137	<7.99E+00	0.00E+00	7.99E+00
					BaLa-140	<2.14E+00	0.00E+00	2.14E+00
					Be-7	<4.45E+01	0.00E+00	4.45E+01
					K-40	1.34E+03	2.25E+02	1.27E+02

Sample ID:	406060	Sample Dates:	3/21/2016 - 3/21/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<5.90E-01	0.00E+00	5.90E-01
					I-131	<6.58E+00	0.00E+00	6.58E+00
					Cs-134	<5.63E+00	0.00E+00	5.63E+00
					Cs-137	<6.52E+00	0.00E+00	6.52E+00
					BaLa-140	<9.17E+00	0.00E+00	9.17E+00
					Be-7	<5.95E+01	0.00E+00	5.95E+01
					K-40	1.41E+03	2.24E+02	7.71E+01

Sample ID:	407593	Sample Dates:	4/4/2016 - 4/4/2016		Nuclide	Activity	2 Sigma Error	MDA
					LLI-131	<6.39E-01	0.00E+00	6.39E-01
					I-131	<5.68E+00	0.00E+00	5.68E+00
					Cs-134	<5.63E+00	0.00E+00	5.63E+00
					Cs-137	<6.52E+00	0.00E+00	6.52E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 141 [ CONTROL - WNW @ 14.8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
407593	4/4/2016 - 4/4/2016	BaLa-140	<2.14E+00	0.00E+00	2.14E+00
		Be-7	<3.32E+01	0.00E+00	3.32E+01
		K-40	1.38E+03	2.29E+02	1.33E+02
409476	4/18/2016 - 4/18/2016	LLI-131	<5.26E-01	0.00E+00	5.26E-01
		I-131	<6.52E+00	0.00E+00	6.52E+00
		Cs-134	<6.29E+00	0.00E+00	6.29E+00
		Cs-137	<7.77E+00	0.00E+00	7.77E+00
		BaLa-140	<7.90E+00	0.00E+00	7.90E+00
		Be-7	<4.09E+01	0.00E+00	4.09E+01
		K-40	1.44E+03	2.40E+02	1.17E+02
410982	5/2/2016 - 5/2/2016	LLI-131	<5.48E-01	0.00E+00	5.48E-01
		I-131	<7.81E+00	0.00E+00	7.81E+00
		Cs-134	<7.11E+00	0.00E+00	7.11E+00
		Cs-137	<6.76E+00	0.00E+00	6.76E+00
		BaLa-140	<5.80E+00	0.00E+00	5.80E+00
		Be-7	<4.45E+01	0.00E+00	4.45E+01
		K-40	1.29E+03	2.18E+02	1.15E+02
411787	5/16/2016 - 5/16/2016	LLI-131	<5.97E-01	0.00E+00	5.97E-01
		I-131	<6.55E+00	0.00E+00	6.55E+00
		Cs-134	<7.87E+00	0.00E+00	7.87E+00
		Cs-137	<9.33E+00	0.00E+00	9.33E+00
		BaLa-140	<5.64E+00	0.00E+00	5.64E+00
		Be-7	<5.32E+01	0.00E+00	5.32E+01
		K-40	1.47E+03	2.31E+02	8.57E+01
412765	5/31/2016 - 5/31/2016	LLI-131	<5.05E-01	0.00E+00	5.05E-01
		I-131	<6.99E+00	0.00E+00	6.99E+00
		Cs-134	<7.39E+00	0.00E+00	7.39E+00
		Cs-137	<7.73E+00	0.00E+00	7.73E+00
		BaLa-140	<2.08E+00	0.00E+00	2.08E+00
		Be-7	<4.59E+01	0.00E+00	4.59E+01
		K-40	1.47E+03	2.35E+02	1.15E+02
413916	6/13/2016 - 6/13/2016	LLI-131	<5.23E-01	0.00E+00	5.23E-01
		I-131	<6.19E+00	0.00E+00	6.19E+00
		Cs-134	<9.13E+00	0.00E+00	9.13E+00
		Cs-137	<8.08E+00	0.00E+00	8.08E+00
		BaLa-140	<8.23E+00	0.00E+00	8.23E+00
		Be-7	<6.14E+01	0.00E+00	6.14E+01
		K-40	1.48E+03	2.42E+02	1.49E+02
415449	6/27/2016 - 6/27/2016	LLI-131	<6.05E-01	0.00E+00	6.05E-01
		I-131	<6.07E+00	0.00E+00	6.07E+00
		Cs-134	<4.87E+00	0.00E+00	4.87E+00
		Cs-137	<8.41E+00	0.00E+00	8.41E+00
		BaLa-140	<2.07E+00	0.00E+00	2.07E+00
		Be-7	<4.59E+01	0.00E+00	4.59E+01
		K-40	1.35E+03	2.21E+02	1.01E+02
417045	7/11/2016 - 7/11/2016	LLI-131	<5.64E-01	0.00E+00	5.64E-01
		I-131	<8.44E+00	0.00E+00	8.44E+00
		Cs-134	<9.11E+00	0.00E+00	9.11E+00
		Cs-137	<4.98E+00	0.00E+00	4.98E+00
		BaLa-140	<8.21E+00	0.00E+00	8.21E+00
		Be-7	<6.51E+01	0.00E+00	6.51E+01
		K-40	1.33E+03	2.19E+02	1.05E+02
417829	7/25/2016 - 7/25/2016	Nuclide	Activity	2 Sigma Error	MDA
		LLI-131	<5.89E-01	0.00E+00	5.89E-01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 141 [ CONTROL - WNW @ 14.8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
417829	7/25/2016 - 7/25/2016	I-131	<7.46E+00	0.00E+00	7.46E+00
		Cs-134	<7.88E+00	0.00E+00	7.88E+00
		Cs-137	<8.08E+00	0.00E+00	8.08E+00
		BaLa-140	<8.60E+00	0.00E+00	8.60E+00
		Be-7	<4.63E+01	0.00E+00	4.63E+01
		K-40	1.34E+03	2.21E+02	1.05E+02
419023	8/8/2016 - 8/8/2016	LLI-131	<6.30E-01	0.00E+00	6.30E-01
		I-131	<7.88E+00	0.00E+00	7.88E+00
		Cs-134	<7.27E+00	0.00E+00	7.27E+00
		Cs-137	<8.17E+00	0.00E+00	8.17E+00
		BaLa-140	<8.70E+00	0.00E+00	8.70E+00
		Be-7	<4.83E+01	0.00E+00	4.83E+01
420050	8/22/2016 - 8/22/2016	LLI-131	<5.39E-01	0.00E+00	5.39E-01
		I-131	<5.89E+00	0.00E+00	5.89E+00
		Cs-134	<8.73E+00	0.00E+00	8.73E+00
		Cs-137	<7.74E+00	0.00E+00	7.74E+00
		BaLa-140	<7.13E+00	0.00E+00	7.13E+00
		Be-7	<5.33E+01	0.00E+00	5.33E+01
421462	9/6/2016 - 9/6/2016	LLI-131	<6.43E-01	0.00E+00	6.43E-01
		I-131	<7.22E+00	0.00E+00	7.22E+00
		Cs-134	<9.11E+00	0.00E+00	9.11E+00
		Cs-137	<8.06E+00	0.00E+00	8.06E+00
		BaLa-140	<8.23E+00	0.00E+00	8.23E+00
		Be-7	<4.85E+01	0.00E+00	4.85E+01
423341	9/19/2016 - 9/19/2016	LLI-131	<6.18E-01	0.00E+00	6.18E-01
		I-131	<6.31E+00	0.00E+00	6.31E+00
		Cs-134	<8.31E+00	0.00E+00	8.31E+00
		Cs-137	<5.57E+00	0.00E+00	5.57E+00
		BaLa-140	<5.62E+00	0.00E+00	5.62E+00
		Be-7	<6.33E+01	0.00E+00	6.33E+01
425477	10/3/2016 - 10/3/2016	LLI-131	<6.46E-01	0.00E+00	6.46E-01
		I-131	<6.49E+00	0.00E+00	6.49E+00
		Cs-134	<9.49E+00	0.00E+00	9.49E+00
		Cs-137	<7.71E+00	0.00E+00	7.71E+00
		BaLa-140	<5.83E+00	0.00E+00	5.83E+00
		Be-7	<3.70E+01	0.00E+00	3.70E+01
426388	10/17/2016 - 10/17/2016	LLI-131	<6.39E-01	0.00E+00	6.39E-01
		I-131	<6.53E+00	0.00E+00	6.53E+00
		Cs-134	<7.59E+00	0.00E+00	7.59E+00
		Cs-137	<6.26E+00	0.00E+00	6.26E+00
		BaLa-140	<1.02E+01	0.00E+00	1.02E+01
		Be-7	<4.74E+01	0.00E+00	4.74E+01
427740	10/31/2016 - 10/31/2016	LLI-131	<6.25E-01	0.00E+00	6.25E-01
		I-131	<6.08E+00	0.00E+00	6.08E+00
		Cs-134	<4.87E+00	0.00E+00	4.87E+00
		Cs-137	<6.08E+00	0.00E+00	6.08E+00
		BaLa-140	<5.62E+00	0.00E+00	5.62E+00
		Be-7	<5.75E+01	0.00E+00	5.75E+01
		K-40	1.43E+03	2.29E+02	1.05E+02



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: MILK Concentration (Activity): pCi/l

Sample Point 141 [ CONTROL - WNW @ 14.8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428916	11/14/2016 - 11/14/2016	LLI-131	<5.45E-01	0.00E+00	5.45E-01
		I-131	<6.48E+00	0.00E+00	6.48E+00
		Cs-134	<6.88E+00	0.00E+00	6.88E+00
		Cs-137	<7.73E+00	0.00E+00	7.73E+00
		BaLa-140	<9.04E+00	0.00E+00	9.04E+00
		Be-7	<4.96E+01	0.00E+00	4.96E+01
		K-40	1.49E+03	2.35E+02	1.00E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
429978	11/28/2016 - 11/28/2016	LLI-131	<6.23E-01	0.00E+00	6.23E-01
		I-131	<5.88E+00	0.00E+00	5.88E+00
		Cs-134	<5.97E+00	0.00E+00	5.97E+00
		Cs-137	<5.89E+00	0.00E+00	5.89E+00
		BaLa-140	<5.96E+00	0.00E+00	5.96E+00
		Be-7	<5.84E+01	0.00E+00	5.84E+01
		K-40	1.51E+03	2.50E+02	1.52E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431086	12/12/2016 - 12/12/2016	LLI-131	<6.50E-01	0.00E+00	6.50E-01
		I-131	<6.28E+00	0.00E+00	6.28E+00
		Cs-134	<7.65E+00	0.00E+00	7.65E+00
		Cs-137	<4.45E+00	0.00E+00	4.45E+00
		BaLa-140	<7.30E+00	0.00E+00	7.30E+00
		Be-7	<4.44E+01	0.00E+00	4.44E+01
		K-40	1.54E+03	2.39E+02	8.69E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
431832	12/27/2016 - 12/27/2016	LLI-131	<5.60E-01	0.00E+00	5.60E-01
		I-131	<7.52E+00	0.00E+00	7.52E+00
		Cs-134	<7.87E+00	0.00E+00	7.87E+00
		Cs-137	<8.73E+00	0.00E+00	8.73E+00
		BaLa-140	<1.15E+01	0.00E+00	1.15E+01
		Be-7	<6.33E+01	0.00E+00	6.33E+01
		K-40	1.48E+03	2.32E+02	8.30E+01

Media Type: SEDIMENT\_SHORE Concentration (Activity): pCi/kg

Sample Point 129 [ INDICATOR - ENE @ 0.51 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
407746	4/4/2016 - 4/4/2016	Mn-54	<1.66E+01	0.00E+00	1.66E+01
		Co-58	<1.47E+01	0.00E+00	1.47E+01
		Fe-59	<3.23E+01	0.00E+00	3.23E+01
		Co-60	<2.23E+01	0.00E+00	2.23E+01
		Zn-65	<3.16E+01	0.00E+00	3.16E+01
		Zr-95	<3.08E+01	0.00E+00	3.08E+01
		Nb-95	<1.68E+01	0.00E+00	1.68E+01
		I-131	<1.87E+01	0.00E+00	1.87E+01
		Cs-134	<2.11E+01	0.00E+00	2.11E+01
		Cs-137	<1.60E+01	0.00E+00	1.60E+01
		Be-7	<1.69E+02	0.00E+00	1.69E+02
		K-40	4.57E+03	6.16E+02	1.49E+02
		Co-57	<1.25E+01	0.00E+00	1.25E+01
		Mo-99	<2.83E+02	0.00E+00	2.83E+02
		Ag-110M	<1.48E+01	0.00E+00	1.48E+01
		Sb-122	<4.31E+01	0.00E+00	4.31E+01
		Sb-125	<4.12E+01	0.00E+00	4.12E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421846	10/3/2016 - 10/3/2016	Mn-54	<2.44E+01	0.00E+00	2.44E+01
		Co-58	<1.70E+01	0.00E+00	1.70E+01
		Fe-59	<3.91E+01	0.00E+00	3.91E+01
		Co-60	<2.23E+01	0.00E+00	2.23E+01
		Zn-65	<2.47E+01	0.00E+00	2.47E+01
		Zr-95	<3.15E+01	0.00E+00	3.15E+01
		Nb-95	<1.86E+01	0.00E+00	1.86E+01
		I-131	<5.24E+01	0.00E+00	5.24E+01
		Cs-134	<1.95E+01	0.00E+00	1.95E+01
		Cs-137	<1.98E+01	0.00E+00	1.98E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SEDIMENT\_SHORE Concentration (Activity): pCi/kg

Sample Point 129 [ INDICATOR - ENE @ 0.51 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421846	10/3/2016 - 10/3/2016	Be-7	<2.34E+02	0.00E+00	2.34E+02
		K-40	2.82E+03	4.78E+02	2.01E+02
		Co-57	<1.62E+01	0.00E+00	1.62E+01
		Mo-99	<4.04E+03	0.00E+00	4.04E+03
		Ag-110M	<1.36E+01	0.00E+00	1.36E+01
		Sb-122	<7.48E+02	0.00E+00	7.48E+02
		Sb-125	<3.71E+01	0.00E+00	3.71E+01

Sample Point 130 [ INDICATOR - SW @ 0.52 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
407747	4/4/2016 - 4/4/2016	Mn-54	<3.60E+01	0.00E+00	3.60E+01
		Co-58	<3.50E+01	0.00E+00	3.50E+01
		Fe-59	<6.65E+01	0.00E+00	6.65E+01
		Co-60	<3.19E+01	0.00E+00	3.19E+01
		Zn-65	<7.50E+01	0.00E+00	7.50E+01
		Zr-95	<7.03E+01	0.00E+00	7.03E+01
		Nb-95	<3.31E+01	0.00E+00	3.31E+01
		I-131	<3.63E+01	0.00E+00	3.63E+01
		Cs-134	<4.63E+01	0.00E+00	4.63E+01
		Cs-137	9.52E+01	3.76E+01	5.11E+01
		Be-7	<2.61E+02	0.00E+00	2.61E+02
		K-40	1.57E+04	1.70E+03	5.69E+02
		Co-57	<2.97E+01	0.00E+00	2.97E+01
		Mo-99	<6.43E+02	0.00E+00	6.43E+02
		Ag-110M	<3.21E+01	0.00E+00	3.21E+01
		Sb-122	<8.97E+01	0.00E+00	8.97E+01
		Sb-125	<1.22E+02	0.00E+00	1.22E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421847	10/3/2016 - 10/3/2016	Mn-54	<3.84E+01	0.00E+00	3.84E+01
		Co-58	<3.66E+01	0.00E+00	3.66E+01
		Fe-59	<8.98E+01	0.00E+00	8.98E+01
		Co-60	<3.88E+01	0.00E+00	3.88E+01
		Zn-65	<5.95E+01	0.00E+00	5.95E+01
		Zr-95	<6.00E+01	0.00E+00	6.00E+01
		Nb-95	<4.52E+01	0.00E+00	4.52E+01
		I-131	<7.31E+01	0.00E+00	7.31E+01
		Cs-134	<5.88E+01	0.00E+00	5.88E+01
		Cs-137	6.16E+01	3.60E+01	5.45E+01
		Be-7	<2.99E+02	0.00E+00	2.99E+02
		K-40	1.57E+04	1.69E+03	6.08E+02
		Co-57	<2.67E+01	0.00E+00	2.67E+01
		Mo-99	<7.62E+03	0.00E+00	7.62E+03
		Ag-110M	<3.00E+01	0.00E+00	3.00E+01
		Sb-122	<1.33E+03	0.00E+00	1.33E+03
		Sb-125	<7.36E+01	0.00E+00	7.36E+01

Sample Point 137 [ CONTROL - N @ 12 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
407748	4/4/2016 - 4/4/2016	Mn-54	<1.98E+01	0.00E+00	1.98E+01
		Co-58	<2.14E+01	0.00E+00	2.14E+01
		Fe-59	<5.83E+01	0.00E+00	5.83E+01
		Co-60	<2.25E+01	0.00E+00	2.25E+01
		Zn-65	<5.42E+01	0.00E+00	5.42E+01
		Zr-95	<3.45E+01	0.00E+00	3.45E+01
		Nb-95	<2.30E+01	0.00E+00	2.30E+01
		I-131	<1.99E+01	0.00E+00	1.99E+01
		Cs-134	<2.39E+01	0.00E+00	2.39E+01
		Cs-137	<1.91E+01	0.00E+00	1.91E+01
		Be-7	<1.56E+02	0.00E+00	1.56E+02
		K-40	2.03E+04	2.33E+03	2.01E+02
		Co-57	<1.45E+01	0.00E+00	1.45E+01
		Mo-99	<3.18E+02	0.00E+00	3.18E+02
		Ag-110M	<1.71E+01	0.00E+00	1.71E+01
		Sb-122	<3.88E+01	0.00E+00	3.88E+01
		Sb-125	<4.17E+01	0.00E+00	4.17E+01





**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: SEDIMENT\_SHORE Concentration (Activity): pCi/kg

Sample Point 137 [ CONTROL - N @ 12 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
421848	10/3/2016 - 10/3/2016	Mn-54	<2.92E+01	0.00E+00	2.92E+01
		Co-58	<2.99E+01	0.00E+00	2.99E+01
		Fe-59	<7.78E+01	0.00E+00	7.78E+01
		Co-60	<2.82E+01	0.00E+00	2.82E+01
		Zn-65	<6.76E+01	0.00E+00	6.76E+01
		Zr-95	<5.15E+01	0.00E+00	5.15E+01
		Nb-95	<3.27E+01	0.00E+00	3.27E+01
		I-131	<6.63E+01	0.00E+00	6.63E+01
		Cs-134	<3.32E+01	0.00E+00	3.32E+01
		Cs-137	<2.75E+01	0.00E+00	2.75E+01
		Be-7	<2.31E+02	0.00E+00	2.31E+02
		K-40	2.23E+04	2.12E+03	3.20E+02
		Co-57	<1.89E+01	0.00E+00	1.89E+01
		Mo-99	<6.31E+03	0.00E+00	6.31E+03
		Ag-110M	<1.94E+01	0.00E+00	1.94E+01
		Sb-122	<9.27E+02	0.00E+00	9.27E+02
		Sb-125	<5.16E+01	0.00E+00	5.16E+01

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 128 [ INDICATOR - NE @ 0.45 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398977	12/7/2015 - 1/5/2016	Mn-54	<3.20E+00	0.00E+00	3.20E+00
		Co-58	<3.04E+00	0.00E+00	3.04E+00
		Fe-59	<7.87E+00	0.00E+00	7.87E+00
		Co-60	<2.06E+00	0.00E+00	2.06E+00
		Zn-65	<9.11E+00	0.00E+00	9.11E+00
		Zr-95	<5.86E+00	0.00E+00	5.86E+00
		Nb-95	<4.10E+00	0.00E+00	4.10E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<3.31E+00	0.00E+00	3.31E+00
		Cs-137	<3.30E+00	0.00E+00	3.30E+00
		BaLa-140	<8.59E+00	0.00E+00	8.59E+00
		Be-7	<2.94E+01	0.00E+00	2.94E+01
		K-40	<3.11E+01	0.00E+00	3.11E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401025	1/5/2016 - 2/1/2016	Mn-54	<3.85E+00	0.00E+00	3.85E+00
		Co-58	<2.36E+00	0.00E+00	2.36E+00
		Fe-59	<8.47E+00	0.00E+00	8.47E+00
		Co-60	<4.39E+00	0.00E+00	4.39E+00
		Zn-65	<6.85E+00	0.00E+00	6.85E+00
		Zr-95	<4.83E+00	0.00E+00	4.83E+00
		Nb-95	<5.09E+00	0.00E+00	5.09E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<4.07E+00	0.00E+00	4.07E+00
		Cs-137	<4.36E+00	0.00E+00	4.36E+00
		BaLa-140	<9.62E+00	0.00E+00	9.62E+00
		Be-7	<3.20E+01	0.00E+00	3.20E+01
		K-40	<4.05E+01	0.00E+00	4.05E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403069	2/1/2016 - 2/29/2016	Mn-54	<3.01E+00	0.00E+00	3.01E+00
		Co-58	<3.78E+00	0.00E+00	3.78E+00
		Fe-59	<5.70E+00	0.00E+00	5.70E+00
		Co-60	<3.39E+00	0.00E+00	3.39E+00
		Zn-65	<6.66E+00	0.00E+00	6.66E+00
		Zr-95	<5.65E+00	0.00E+00	5.65E+00
		Nb-95	<4.53E+00	0.00E+00	4.53E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<3.91E+00	0.00E+00	3.91E+00
		Cs-137	<3.06E+00	0.00E+00	3.06E+00
		BaLa-140	<7.11E+00	0.00E+00	7.11E+00
		Be-7	<3.18E+01	0.00E+00	3.18E+01
		K-40	<5.48E+01	0.00E+00	5.48E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403609	12/7/2015 - 2/29/2016	H3SW	4.33E+02	1.25E+02	1.94E+02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 128 [ INDICATOR - NE @ 0.45 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
406411	2/29/2016 - 3/28/2016	Mn-54	<1.68E+00	0.00E+00	1.68E+00
		Co-58	<1.79E+00	0.00E+00	1.79E+00
		Fe-59	<3.97E+00	0.00E+00	3.97E+00
		Co-60	<1.83E+00	0.00E+00	1.83E+00
		Zn-65	<4.40E+00	0.00E+00	4.40E+00
		Zr-95	<4.34E+00	0.00E+00	4.34E+00
		Nb-95	<3.24E+00	0.00E+00	3.24E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<2.13E+00	0.00E+00	2.13E+00
		Cs-137	<2.06E+00	0.00E+00	2.06E+00
		BaLa-140	<6.78E+00	0.00E+00	6.78E+00
		Be-7	<1.86E+01	0.00E+00	1.86E+01
		K-40	3.14E+01	2.06E+01	3.08E+01
		409806	3/28/2016 - 4/25/2016	Mn-54	<1.92E+00
Co-58	<2.59E+00			0.00E+00	2.59E+00
Fe-59	<6.14E+00			0.00E+00	6.14E+00
Co-60	<2.85E+00			0.00E+00	2.85E+00
Zn-65	<6.17E+00			0.00E+00	6.17E+00
Zr-95	<4.95E+00			0.00E+00	4.95E+00
Nb-95	<3.33E+00			0.00E+00	3.33E+00
I-131	<1.19E+01			0.00E+00	1.19E+01
Cs-134	<3.14E+00			0.00E+00	3.14E+00
Cs-137	<3.70E+00			0.00E+00	3.70E+00
BaLa-140	<1.76E+00			0.00E+00	1.76E+00
Be-7	<2.98E+01			0.00E+00	2.98E+01
K-40	3.52E+01			2.85E+01	4.22E+01
412245	4/25/2016 - 5/23/2016			Mn-54	<2.60E+00
		Co-58	<3.54E+00	0.00E+00	3.54E+00
		Fe-59	<5.79E+00	0.00E+00	5.79E+00
		Co-60	<3.72E+00	0.00E+00	3.72E+00
		Zn-65	<5.96E+00	0.00E+00	5.96E+00
		Zr-95	<6.53E+00	0.00E+00	6.53E+00
		Nb-95	<4.54E+00	0.00E+00	4.54E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<4.24E+00	0.00E+00	4.24E+00
		Cs-137	<3.11E+00	0.00E+00	3.11E+00
		BaLa-140	<9.21E+00	0.00E+00	9.21E+00
		Be-7	<3.03E+01	0.00E+00	3.03E+01
		K-40	6.76E+01	3.45E+01	4.33E+01
		413183	2/29/2016 - 5/23/2016	H3SW	9.12E+02
415052	5/23/2016 - 6/20/2016	Mn-54	<2.67E+00	0.00E+00	2.67E+00
		Co-58	<2.95E+00	0.00E+00	2.95E+00
		Fe-59	<6.03E+00	0.00E+00	6.03E+00
		Co-60	<2.22E+00	0.00E+00	2.22E+00
		Zn-65	<6.30E+00	0.00E+00	6.30E+00
		Zr-95	<6.56E+00	0.00E+00	6.56E+00
		Nb-95	<4.01E+00	0.00E+00	4.01E+00
		I-131	<1.10E+01	0.00E+00	1.10E+01
		Cs-134	<2.56E+00	0.00E+00	2.56E+00
		Cs-137	<2.70E+00	0.00E+00	2.70E+00
		BaLa-140	<6.56E+00	0.00E+00	6.56E+00
		Be-7	<2.53E+01	0.00E+00	2.53E+01
		K-40	4.64E+01	2.53E+01	3.15E+01
		417434	6/20/2016 - 7/18/2016	Mn-54	<3.28E+00
Co-58	<2.16E+00			0.00E+00	2.16E+00
Fe-59	<6.00E+00			0.00E+00	6.00E+00
Co-60	<3.29E+00			0.00E+00	3.29E+00
Zn-65	<6.37E+00			0.00E+00	6.37E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 128 [ INDICATOR - NE @ 0.45 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA		
417434	6/20/2016 - 7/18/2016	Zr-95	<6.39E+00	0.00E+00	6.39E+00		
		Nb-95	<4.14E+00	0.00E+00	4.14E+00		
		I-131	<1.10E+01	0.00E+00	1.10E+01		
		Cs-134	<4.25E+00	0.00E+00	4.25E+00		
		Cs-137	<3.55E+00	0.00E+00	3.55E+00		
		BaLa-140	<6.20E+00	0.00E+00	6.20E+00		
		Be-7	<2.89E+01	0.00E+00	2.89E+01		
		K-40	2.43E+01	2.82E+01	4.56E+01		
419519	7/18/2016 - 8/15/2016	Mn-54	<3.05E+00	0.00E+00	3.05E+00		
		Co-58	<3.13E+00	0.00E+00	3.13E+00		
		Fe-59	<6.08E+00	0.00E+00	6.08E+00		
		Co-60	<3.13E+00	0.00E+00	3.13E+00		
		Zn-65	<6.40E+00	0.00E+00	6.40E+00		
		Zr-95	<8.50E+00	0.00E+00	8.50E+00		
		Nb-95	<4.21E+00	0.00E+00	4.21E+00		
		I-131	<1.15E+01	0.00E+00	1.15E+01		
		Cs-134	<3.15E+00	0.00E+00	3.15E+00		
		Cs-137	<3.15E+00	0.00E+00	3.15E+00		
		BaLa-140	<8.22E+00	0.00E+00	8.22E+00		
		Be-7	<2.91E+01	0.00E+00	2.91E+01		
		K-40	2.70E+01	2.32E+01	3.24E+01		
420864	5/23/2016 - 8/15/2016	Nuclide	Activity	2 Sigma Error	MDA		
		H3SW	6.39E+02	1.27E+02	1.90E+02		
422596	8/15/2016 - 9/12/2016	Mn-54	<2.34E+00	0.00E+00	2.34E+00		
		Co-58	<2.53E+00	0.00E+00	2.53E+00		
		Fe-59	<5.50E+00	0.00E+00	5.50E+00		
		Co-60	<2.18E+00	0.00E+00	2.18E+00		
		Zn-65	<5.22E+00	0.00E+00	5.22E+00		
		Zr-95	<4.96E+00	0.00E+00	4.96E+00		
		Nb-95	<3.39E+00	0.00E+00	3.39E+00		
		I-131	<1.17E+01	0.00E+00	1.17E+01		
		Cs-134	<2.60E+00	0.00E+00	2.60E+00		
		Cs-137	<2.37E+00	0.00E+00	2.37E+00		
		BaLa-140	<6.83E+00	0.00E+00	6.83E+00		
		Be-7	<2.75E+01	0.00E+00	2.75E+01		
		K-40	3.90E+01	2.29E+01	3.16E+01		
426017	9/12/2016 - 10/10/2016	Mn-54	<2.78E+00	0.00E+00	2.78E+00		
		Co-58	<3.53E+00	0.00E+00	3.53E+00		
		Fe-59	<8.91E+00	0.00E+00	8.91E+00		
		Co-60	<3.72E+00	0.00E+00	3.72E+00		
		Zn-65	<4.85E+00	0.00E+00	4.85E+00		
		Zr-95	<5.47E+00	0.00E+00	5.47E+00		
		Nb-95	<5.33E+00	0.00E+00	5.33E+00		
		I-131	<1.13E+01	0.00E+00	1.13E+01		
		Cs-134	<2.53E+00	0.00E+00	2.53E+00		
		Cs-137	<3.57E+00	0.00E+00	3.57E+00		
		BaLa-140	<1.04E+01	0.00E+00	1.04E+01		
		Be-7	<4.06E+01	0.00E+00	4.06E+01		
		K-40	5.13E+01	2.75E+01	2.85E+01		
		428238	10/10/2016 - 11/7/2016	Mn-54	<3.08E+00	0.00E+00	3.08E+00
				Co-58	<2.45E+00	0.00E+00	2.45E+00
Fe-59	<6.33E+00			0.00E+00	6.33E+00		
Co-60	<4.12E+00			0.00E+00	4.12E+00		
Zn-65	<7.93E+00			0.00E+00	7.93E+00		
Zr-95	<5.42E+00			0.00E+00	5.42E+00		
Nb-95	<4.27E+00			0.00E+00	4.27E+00		
I-131	<1.20E+01			0.00E+00	1.20E+01		
Cs-134	<3.72E+00			0.00E+00	3.72E+00		
Cs-137	<3.25E+00			0.00E+00	3.25E+00		



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 128 [ INDICATOR - NE @ 0.45 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428238	10/10/2016 - 11/7/2016	BaLa-140	<6.06E+00	0.00E+00	6.06E+00
		Be-7	<3.42E+01	0.00E+00	3.42E+01
		K-40	4.40E+01	3.31E+01	4.86E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427843	8/15/2016 - 12/5/2016	H3SW	6.66E+02	1.34E+02	1.95E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430602	11/7/2016 - 12/5/2016	Mn-54	<3.49E+00	0.00E+00	3.49E+00
		Co-58	<4.55E+00	0.00E+00	4.55E+00
		Fe-59	<1.03E+01	0.00E+00	1.03E+01
		Co-60	<3.98E+00	0.00E+00	3.98E+00
		Zn-65	<5.66E+00	0.00E+00	5.66E+00
		Zr-95	<7.68E+00	0.00E+00	7.68E+00
		Nb-95	<3.99E+00	0.00E+00	3.99E+00
		I-131	<1.03E+01	0.00E+00	1.03E+01
		Cs-134	<4.79E+00	0.00E+00	4.79E+00
		Cs-137	<4.18E+00	0.00E+00	4.18E+00
		BaLa-140	<9.42E+00	0.00E+00	9.42E+00
		Be-7	<3.59E+01	0.00E+00	3.59E+01
		K-40	6.98E+01	3.40E+01	3.26E+01

Sample Point 131 [ INDICATOR - WNW @ 0.64 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398978	12/7/2015 - 1/5/2016	Mn-54	<3.51E+00	0.00E+00	3.51E+00
		Co-58	<3.36E+00	0.00E+00	3.36E+00
		Fe-59	<6.42E+00	0.00E+00	6.42E+00
		Co-60	<2.91E+00	0.00E+00	2.91E+00
		Zn-65	<5.98E+00	0.00E+00	5.98E+00
		Zr-95	<6.62E+00	0.00E+00	6.62E+00
		Nb-95	<4.56E+00	0.00E+00	4.56E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<3.89E+00	0.00E+00	3.89E+00
		Cs-137	<3.96E+00	0.00E+00	3.96E+00
		BaLa-140	<5.53E+00	0.00E+00	5.53E+00
		Be-7	<3.54E+01	0.00E+00	3.54E+01
		K-40	<6.97E+01	0.00E+00	6.97E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401026	1/5/2016 - 2/1/2016	Mn-54	<4.39E+00	0.00E+00	4.39E+00
		Co-58	<4.23E+00	0.00E+00	4.23E+00
		Fe-59	<6.80E+00	0.00E+00	6.80E+00
		Co-60	<4.60E+00	0.00E+00	4.60E+00
		Zn-65	<7.17E+00	0.00E+00	7.17E+00
		Zr-95	<6.19E+00	0.00E+00	6.19E+00
		Nb-95	<3.56E+00	0.00E+00	3.56E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<3.52E+00	0.00E+00	3.52E+00
		Cs-137	<4.26E+00	0.00E+00	4.26E+00
		BaLa-140	<9.27E+00	0.00E+00	9.27E+00
		Be-7	<4.48E+01	0.00E+00	4.48E+01
		K-40	4.43E+01	3.68E+01	5.45E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403070	2/1/2016 - 2/29/2016	Mn-54	<3.14E+00	0.00E+00	3.14E+00
		Co-58	<3.13E+00	0.00E+00	3.13E+00
		Fe-59	<5.23E+00	0.00E+00	5.23E+00
		Co-60	<4.00E+00	0.00E+00	4.00E+00
		Zn-65	<6.01E+00	0.00E+00	6.01E+00
		Zr-95	<5.00E+00	0.00E+00	5.00E+00
		Nb-95	<3.83E+00	0.00E+00	3.83E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.30E+00	0.00E+00	3.30E+00
		Cs-137	<3.51E+00	0.00E+00	3.51E+00
		BaLa-140	<6.32E+00	0.00E+00	6.32E+00
		Be-7	<2.50E+01	0.00E+00	2.50E+01
		K-40	3.97E+01	2.55E+01	3.57E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 131 [ INDICATOR - WNW @ 0.64 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403610	12/7/2015 - 2/29/2016	H3SW	2.49E+02	1.21E+02	1.96E+02
406412	2/29/2016 - 3/28/2016	Mn-54	<2.40E+00	0.00E+00	2.40E+00
		Co-58	<2.66E+00	0.00E+00	2.66E+00
		Fe-59	<4.75E+00	0.00E+00	4.75E+00
		Co-60	<2.01E+00	0.00E+00	2.01E+00
		Zn-65	<3.55E+00	0.00E+00	3.55E+00
		Zr-95	<4.54E+00	0.00E+00	4.54E+00
		Nb-95	<3.02E+00	0.00E+00	3.02E+00
		I-131	<1.17E+01	0.00E+00	1.17E+01
		Cs-134	<2.37E+00	0.00E+00	2.37E+00
		Cs-137	<2.58E+00	0.00E+00	2.58E+00
		BaLa-140	<6.20E+00	0.00E+00	6.20E+00
		Be-7	<2.26E+01	0.00E+00	2.26E+01
		K-40	3.20E+01	1.80E+01	2.40E+01
409807	3/28/2016 - 4/25/2016	Mn-54	<2.23E+00	0.00E+00	2.23E+00
		Co-58	<2.77E+00	0.00E+00	2.77E+00
		Fe-59	<4.45E+00	0.00E+00	4.45E+00
		Co-60	<2.99E+00	0.00E+00	2.99E+00
		Zn-65	<5.27E+00	0.00E+00	5.27E+00
		Zr-95	<5.67E+00	0.00E+00	5.67E+00
		Nb-95	<4.08E+00	0.00E+00	4.08E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.76E+00	0.00E+00	2.76E+00
		Cs-137	<2.57E+00	0.00E+00	2.57E+00
		BaLa-140	<5.80E+00	0.00E+00	5.80E+00
		Be-7	<2.81E+01	0.00E+00	2.81E+01
		K-40	4.84E+01	3.07E+01	4.49E+01
412246	4/25/2016 - 5/23/2016	Mn-54	<2.19E+00	0.00E+00	2.19E+00
		Co-58	<3.36E+00	0.00E+00	3.36E+00
		Fe-59	<7.18E+00	0.00E+00	7.18E+00
		Co-60	<4.07E+00	0.00E+00	4.07E+00
		Zn-65	<7.49E+00	0.00E+00	7.49E+00
		Zr-95	<5.04E+00	0.00E+00	5.04E+00
		Nb-95	<3.75E+00	0.00E+00	3.75E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.21E+00	0.00E+00	3.21E+00
		Cs-137	<3.20E+00	0.00E+00	3.20E+00
		BaLa-140	<9.21E+00	0.00E+00	9.21E+00
		Be-7	<2.56E+01	0.00E+00	2.56E+01
		K-40	<5.42E+01	0.00E+00	5.42E+01
413184	2/29/2016 - 5/23/2016	H3SW	3.35E+02	1.24E+02	1.96E+02
415053	5/23/2016 - 6/20/2016	Mn-54	<2.92E+00	0.00E+00	2.92E+00
		Co-58	<3.22E+00	0.00E+00	3.22E+00
		Fe-59	<4.74E+00	0.00E+00	4.74E+00
		Co-60	<2.42E+00	0.00E+00	2.42E+00
		Zn-65	<7.61E+00	0.00E+00	7.61E+00
		Zr-95	<6.04E+00	0.00E+00	6.04E+00
		Nb-95	<4.51E+00	0.00E+00	4.51E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.23E+00	0.00E+00	3.23E+00
		Cs-137	<4.22E+00	0.00E+00	4.22E+00
		BaLa-140	<8.43E+00	0.00E+00	8.43E+00
		Be-7	1.21E+01	1.91E+01	3.22E+01
		K-40	4.45E+01	2.85E+01	3.73E+01
417435	6/20/2016 - 7/18/2016	Mn-54	<2.77E+00	0.00E+00	2.77E+00
		Co-58	<3.31E+00	0.00E+00	3.31E+00
		Fe-59	<6.97E+00	0.00E+00	6.97E+00



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 131 [ INDICATOR - WNW @ 0.64 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
417435	6/20/2016 - 7/18/2016	Co-60	<3.73E+00	0.00E+00	3.73E+00
		Zn-65	<5.15E+00	0.00E+00	5.15E+00
		Zr-95	<5.65E+00	0.00E+00	5.65E+00
		Nb-95	<3.70E+00	0.00E+00	3.70E+00
		I-131	<1.07E+01	0.00E+00	1.07E+01
		Cs-134	<3.20E+00	0.00E+00	3.20E+00
		Cs-137	<3.78E+00	0.00E+00	3.78E+00
		BaLa-140	<8.12E+00	0.00E+00	8.12E+00
		Be-7	<2.89E+01	0.00E+00	2.89E+01
		K-40	4.89E+01	3.20E+01	4.58E+01
		419520	7/18/2016 - 8/15/2016	Mn-54	<3.14E+00
Co-58	<4.03E+00			0.00E+00	4.03E+00
Fe-59	<5.91E+00			0.00E+00	5.91E+00
Co-60	<4.21E+00			0.00E+00	4.21E+00
Zn-65	<9.35E+00			0.00E+00	9.35E+00
Zr-95	<5.37E+00			0.00E+00	5.37E+00
Nb-95	<5.03E+00			0.00E+00	5.03E+00
I-131	<1.13E+01			0.00E+00	1.13E+01
Cs-134	<3.49E+00			0.00E+00	3.49E+00
Cs-137	<3.38E+00			0.00E+00	3.38E+00
BaLa-140	<8.06E+00			0.00E+00	8.06E+00
Be-7	<3.35E+01			0.00E+00	3.35E+01
K-40	<6.94E+01			0.00E+00	6.94E+01
420865	5/23/2016 - 8/15/2016			H3SW	3.47E+02
422597	8/15/2016 - 9/12/2016	Mn-54	<2.02E+00	0.00E+00	2.02E+00
		Co-58	<2.34E+00	0.00E+00	2.34E+00
		Fe-59	<5.07E+00	0.00E+00	5.07E+00
		Co-60	<1.75E+00	0.00E+00	1.75E+00
		Zn-65	<3.94E+00	0.00E+00	3.94E+00
		Zr-95	<4.44E+00	0.00E+00	4.44E+00
		Nb-95	<2.92E+00	0.00E+00	2.92E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<2.22E+00	0.00E+00	2.22E+00
		Cs-137	<2.00E+00	0.00E+00	2.00E+00
		BaLa-140	<7.40E+00	0.00E+00	7.40E+00
		Be-7	<2.11E+01	0.00E+00	2.11E+01
		K-40	4.10E+01	1.95E+01	2.61E+01
		426018	9/12/2016 - 10/10/2016	Mn-54	<2.98E+00
Co-58	<2.91E+00			0.00E+00	2.91E+00
Fe-59	<5.41E+00			0.00E+00	5.41E+00
Co-60	<3.36E+00			0.00E+00	3.36E+00
Zn-65	<5.92E+00			0.00E+00	5.92E+00
Zr-95	<6.07E+00			0.00E+00	6.07E+00
Nb-95	<3.15E+00			0.00E+00	3.15E+00
I-131	<1.03E+01			0.00E+00	1.03E+01
Cs-134	<3.49E+00			0.00E+00	3.49E+00
Cs-137	<3.34E+00			0.00E+00	3.34E+00
BaLa-140	<5.95E+00			0.00E+00	5.95E+00
Be-7	<2.12E+01			0.00E+00	2.12E+01
K-40	<5.15E+01			0.00E+00	5.15E+01
428239	10/10/2016 - 11/7/2016			Mn-54	<3.37E+00
		Co-58	<4.50E+00	0.00E+00	4.50E+00
		Fe-59	<8.86E+00	0.00E+00	8.86E+00
		Co-60	<3.56E+00	0.00E+00	3.56E+00
		Zn-65	<8.32E+00	0.00E+00	8.32E+00
		Zr-95	<6.61E+00	0.00E+00	6.61E+00
		Nb-95	<4.77E+00	0.00E+00	4.77E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 131 [ INDICATOR - WNW @ 0.64 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428239	10/10/2016 - 11/7/2016	Cs-134	<4.23E+00	0.00E+00	4.23E+00
		Cs-137	<3.82E+00	0.00E+00	3.82E+00
		BaLa-140	<1.98E+00	0.00E+00	1.98E+00
		Be-7	<3.35E+01	0.00E+00	3.35E+01
		K-40	<5.43E+01	0.00E+00	5.43E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
427844	8/15/2016 - 12/5/2016	H3SW	3.75E+02	1.25E+02	1.95E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
430603	11/7/2016 - 12/5/2016	Mn-54	<2.88E+00	0.00E+00	2.88E+00
		Co-58	<3.47E+00	0.00E+00	3.47E+00
		Fe-59	<7.55E+00	0.00E+00	7.55E+00
		Co-60	<5.60E+00	0.00E+00	5.60E+00
		Zn-65	<8.87E+00	0.00E+00	8.87E+00
		Zr-95	<7.81E+00	0.00E+00	7.81E+00
		Nb-95	<4.68E+00	0.00E+00	4.68E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.75E+00	0.00E+00	3.75E+00
		Cs-137	<3.04E+00	0.00E+00	3.04E+00
		BaLa-140	<9.29E+00	0.00E+00	9.29E+00
		Be-7	<3.73E+01	0.00E+00	3.73E+01
		K-40	<6.61E+01	0.00E+00	6.61E+01

## Sample Point 135 [ CONTROL - N @ 11.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
398979	12/7/2015 - 1/5/2016	Mn-54	<4.32E+00	0.00E+00	4.32E+00
		Co-58	<4.36E+00	0.00E+00	4.36E+00
		Fe-59	<9.82E+00	0.00E+00	9.82E+00
		Co-60	<4.35E+00	0.00E+00	4.35E+00
		Zn-65	<8.01E+00	0.00E+00	8.01E+00
		Zr-95	<6.87E+00	0.00E+00	6.87E+00
		Nb-95	<6.00E+00	0.00E+00	6.00E+00
		I-131	<1.09E+01	0.00E+00	1.09E+01
		Cs-134	<4.36E+00	0.00E+00	4.36E+00
		Cs-137	<4.52E+00	0.00E+00	4.52E+00
		BaLa-140	<9.77E+00	0.00E+00	9.77E+00
		Be-7	<2.72E+01	0.00E+00	2.72E+01
		K-40	<5.95E+01	0.00E+00	5.95E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
401027	1/5/2016 - 2/1/2016	Mn-54	<3.50E+00	0.00E+00	3.50E+00
		Co-58	<4.34E+00	0.00E+00	4.34E+00
		Fe-59	<7.69E+00	0.00E+00	7.69E+00
		Co-60	<4.22E+00	0.00E+00	4.22E+00
		Zn-65	<6.20E+00	0.00E+00	6.20E+00
		Zr-95	<5.76E+00	0.00E+00	5.76E+00
		Nb-95	<4.64E+00	0.00E+00	4.64E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<4.23E+00	0.00E+00	4.23E+00
		Cs-137	<3.39E+00	0.00E+00	3.39E+00
		BaLa-140	<5.34E+00	0.00E+00	5.34E+00
		Be-7	<3.03E+01	0.00E+00	3.03E+01
		K-40	<5.24E+01	0.00E+00	5.24E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403071	2/1/2016 - 2/29/2016	Mn-54	<3.21E+00	0.00E+00	3.21E+00
		Co-58	<2.77E+00	0.00E+00	2.77E+00
		Fe-59	<5.03E+00	0.00E+00	5.03E+00
		Co-60	<2.55E+00	0.00E+00	2.55E+00
		Zn-65	<6.92E+00	0.00E+00	6.92E+00
		Zr-95	<6.78E+00	0.00E+00	6.78E+00
		Nb-95	<4.15E+00	0.00E+00	4.15E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.27E+00	0.00E+00	3.27E+00
		Cs-137	<3.22E+00	0.00E+00	3.22E+00
		BaLa-140	<1.76E+00	0.00E+00	1.76E+00
		Be-7	<3.23E+01	0.00E+00	3.23E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 135 [ CONTROL - N @ 11.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
403071	2/1/2016 - 2/29/2016	K-40	<5.38E+01	0.00E+00	5.38E+01
403611	12/7/2015 - 2/29/2016	H3SW	<-5.8E+00	0.00E+00	1.92E+02
406413	2/29/2016 - 3/28/2016	Mn-54	<1.88E+00	0.00E+00	1.88E+00
		Co-58	<2.46E+00	0.00E+00	2.46E+00
		Fe-59	<5.48E+00	0.00E+00	5.48E+00
		Co-60	<1.81E+00	0.00E+00	1.81E+00
		Zn-65	<4.44E+00	0.00E+00	4.44E+00
		Zr-95	<3.79E+00	0.00E+00	3.79E+00
		Nb-95	<2.91E+00	0.00E+00	2.91E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.73E+00	0.00E+00	2.73E+00
		Cs-137	<2.49E+00	0.00E+00	2.49E+00
		BaLa-140	<7.01E+00	0.00E+00	7.01E+00
		Be-7	<2.25E+01	0.00E+00	2.25E+01
		K-40	4.42E+01	2.36E+01	3.40E+01
409808	3/28/2016 - 4/25/2016	Mn-54	<2.32E+00	0.00E+00	2.32E+00
		Co-58	<2.65E+00	0.00E+00	2.65E+00
		Fe-59	<4.44E+00	0.00E+00	4.44E+00
		Co-60	<2.66E+00	0.00E+00	2.66E+00
		Zn-65	<3.16E+00	0.00E+00	3.16E+00
		Zr-95	<5.25E+00	0.00E+00	5.25E+00
		Nb-95	<2.88E+00	0.00E+00	2.88E+00
		I-131	<1.03E+01	0.00E+00	1.03E+01
		Cs-134	<3.03E+00	0.00E+00	3.03E+00
		Cs-137	<2.52E+00	0.00E+00	2.52E+00
		BaLa-140	<5.78E+00	0.00E+00	5.78E+00
		Be-7	<2.28E+01	0.00E+00	2.28E+01
		K-40	3.63E+01	2.13E+01	2.84E+01
412247	4/25/2016 - 5/23/2016	Mn-54	<2.44E+00	0.00E+00	2.44E+00
		Co-58	<4.36E+00	0.00E+00	4.36E+00
		Fe-59	<7.44E+00	0.00E+00	7.44E+00
		Co-60	<5.08E+00	0.00E+00	5.08E+00
		Zn-65	<8.29E+00	0.00E+00	8.29E+00
		Zr-95	<5.96E+00	0.00E+00	5.96E+00
		Nb-95	<4.16E+00	0.00E+00	4.16E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<3.76E+00	0.00E+00	3.76E+00
		Cs-137	<3.72E+00	0.00E+00	3.72E+00
		BaLa-140	<1.01E+01	0.00E+00	1.01E+01
		Be-7	<3.18E+01	0.00E+00	3.18E+01
		K-40	<5.86E+01	0.00E+00	5.86E+01
413185	2/29/2016 - 5/23/2016	H3SW	<-8.0E+01	0.00E+00	1.97E+02
415054	5/23/2016 - 6/20/2016	Mn-54	<4.31E+00	0.00E+00	4.31E+00
		Co-58	<3.58E+00	0.00E+00	3.58E+00
		Fe-59	<1.13E+01	0.00E+00	1.13E+01
		Co-60	<3.57E+00	0.00E+00	3.57E+00
		Zn-65	<7.33E+00	0.00E+00	7.33E+00
		Zr-95	<8.44E+00	0.00E+00	8.44E+00
		Nb-95	<6.31E+00	0.00E+00	6.31E+00
		I-131	<9.88E+00	0.00E+00	9.88E+00
		Cs-134	<4.36E+00	0.00E+00	4.36E+00
		Cs-137	<4.18E+00	0.00E+00	4.18E+00
		BaLa-140	<6.47E+00	0.00E+00	6.47E+00
		Be-7	<3.60E+01	0.00E+00	3.60E+01
		K-40	1.46E+01	3.76E+01	6.65E+01





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 135 [ CONTROL - N @ 11.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
417436	6/20/2016 - 7/18/2016	Mn-54	<3.13E+00	0.00E+00	3.13E+00
		Co-58	<2.49E+00	0.00E+00	2.49E+00
		Fe-59	<4.54E+00	0.00E+00	4.54E+00
		Co-60	<3.28E+00	0.00E+00	3.28E+00
		Zn-65	<6.91E+00	0.00E+00	6.91E+00
		Zr-95	<5.52E+00	0.00E+00	5.52E+00
		Nb-95	<4.19E+00	0.00E+00	4.19E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<4.20E+00	0.00E+00	4.20E+00
		Cs-137	<3.05E+00	0.00E+00	3.05E+00
		BaLa-140	<9.35E+00	0.00E+00	9.35E+00
		Be-7	<3.36E+01	0.00E+00	3.36E+01
		K-40	<5.56E+01	0.00E+00	5.56E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
419521	7/18/2016 - 8/15/2016	Mn-54	<2.87E+00	0.00E+00	2.87E+00
		Co-58	<2.77E+00	0.00E+00	2.77E+00
		Fe-59	<7.06E+00	0.00E+00	7.06E+00
		Co-60	<3.09E+00	0.00E+00	3.09E+00
		Zn-65	<8.22E+00	0.00E+00	8.22E+00
		Zr-95	<6.78E+00	0.00E+00	6.78E+00
		Nb-95	<4.26E+00	0.00E+00	4.26E+00
		I-131	<1.19E+01	0.00E+00	1.19E+01
		Cs-134	<3.70E+00	0.00E+00	3.70E+00
		Cs-137	<3.95E+00	0.00E+00	3.95E+00
		BaLa-140	<6.35E+00	0.00E+00	6.35E+00
		Be-7	<2.87E+01	0.00E+00	2.87E+01
		K-40	4.56E+01	2.65E+01	3.14E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
420866	5/23/2016 - 8/15/2016	H3SW	<8.60E+01	0.00E+00	1.88E+02

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
422598	8/15/2016 - 9/12/2016	Mn-54	<2.01E+00	0.00E+00	2.01E+00
		Co-58	<2.33E+00	0.00E+00	2.33E+00
		Fe-59	<5.50E+00	0.00E+00	5.50E+00
		Co-60	<1.86E+00	0.00E+00	1.86E+00
		Zn-65	<3.85E+00	0.00E+00	3.85E+00
		Zr-95	<3.67E+00	0.00E+00	3.67E+00
		Nb-95	<2.95E+00	0.00E+00	2.95E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.26E+00	0.00E+00	2.26E+00
		Cs-137	<1.82E+00	0.00E+00	1.82E+00
		BaLa-140	<4.54E+00	0.00E+00	4.54E+00
		Be-7	<1.83E+01	0.00E+00	1.83E+01
		K-40	3.72E+01	2.09E+01	3.02E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
426019	9/12/2016 - 10/10/2016	Mn-54	<2.51E+00	0.00E+00	2.51E+00
		Co-58	<3.48E+00	0.00E+00	3.48E+00
		Fe-59	<5.22E+00	0.00E+00	5.22E+00
		Co-60	<3.18E+00	0.00E+00	3.18E+00
		Zn-65	<6.45E+00	0.00E+00	6.45E+00
		Zr-95	<3.91E+00	0.00E+00	3.91E+00
		Nb-95	<3.16E+00	0.00E+00	3.16E+00
		I-131	<1.14E+01	0.00E+00	1.14E+01
		Cs-134	<3.57E+00	0.00E+00	3.57E+00
		Cs-137	<2.76E+00	0.00E+00	2.76E+00
		BaLa-140	<7.40E+00	0.00E+00	7.40E+00
		Be-7	<2.60E+01	0.00E+00	2.60E+01
		K-40	2.43E+01	1.98E+01	2.85E+01

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428240	10/10/2016 - 11/7/2016	Mn-54	<4.33E+00	0.00E+00	4.33E+00
		Co-58	<3.95E+00	0.00E+00	3.95E+00
		Fe-59	<8.82E+00	0.00E+00	8.82E+00
		Co-60	<3.46E+00	0.00E+00	3.46E+00
		Zn-65	<8.85E+00	0.00E+00	8.85E+00



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 135 [ CONTROL - N @ 11.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	2 Sigma Error	MDA
428240	10/10/2016 - 11/7/2016	Zr-95	<5.02E+00	0.00E+00	5.02E+00
		Nb-95	<4.40E+00	0.00E+00	4.40E+00
		I-131	<1.13E+01	0.00E+00	1.13E+01
		Cs-134	<4.62E+00	0.00E+00	4.62E+00
		Cs-137	<3.86E+00	0.00E+00	3.86E+00
		BaLa-140	<7.86E+00	0.00E+00	7.86E+00
		Be-7	<2.78E+01	0.00E+00	2.78E+01
		K-40	<6.97E+01	0.00E+00	6.97E+01
427845	8/15/2016 - 12/5/2016	H3SW	<3.40E+01	0.00E+00	1.96E+02
430604	11/7/2016 - 12/5/2016	Mn-54	<3.22E+00	0.00E+00	3.22E+00
		Co-58	<2.80E+00	0.00E+00	2.80E+00
		Fe-59	<5.90E+00	0.00E+00	5.90E+00
		Co-60	<2.82E+00	0.00E+00	2.82E+00
		Zn-65	<6.57E+00	0.00E+00	6.57E+00
		Zr-95	<6.47E+00	0.00E+00	6.47E+00
		Nb-95	<4.30E+00	0.00E+00	4.30E+00
		I-131	<7.61E+00	0.00E+00	7.61E+00
		Cs-134	<3.46E+00	0.00E+00	3.46E+00
		Cs-137	<3.64E+00	0.00E+00	3.64E+00
		BaLa-140	<5.29E+00	0.00E+00	5.29E+00
		Be-7	<2.40E+01	0.00E+00	2.40E+01
K-40	3.59E+01	3.25E+01	5.07E+01		

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 143 [ INDICATOR - NW @ 0.27 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
403449	12/16/2015 - 3/16/2016	mR/Std Qtr	16.62
413023	3/16/2016 - 6/15/2016	mR/Std Qtr	17.43
421022	6/15/2016 - 9/14/2016	mR/Std Qtr	15.91
430366	9/14/2016 - 12/14/2016	mR/Std Qtr	16.57

Sample Point 144 [ INDICATOR - NNE @ 0.46 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
403450	12/16/2015 - 3/16/2016	mR/Std Qtr	17.25
413024	3/16/2016 - 6/15/2016	mR/Std Qtr	13.62
421023	6/15/2016 - 9/14/2016	mR/Std Qtr	13.58
430367	9/14/2016 - 12/14/2016	mR/Std Qtr	14.73

Sample Point 145 [ INDICATOR - NE @ 0.47 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
403451	12/16/2015 - 3/16/2016	mR/Std Qtr	17.34
413025	3/16/2016 - 6/15/2016	mR/Std Qtr	14.46
421024	6/15/2016 - 9/14/2016	mR/Std Qtr	13.34
430368	9/14/2016 - 12/14/2016	mR/Std Qtr	14.37



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 146 [ INDICATOR - ENE @ 0.42 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403452	12/16/2015 - 3/16/2016	mR/Std Qtr	16.02
413026	3/16/2016 - 6/15/2016	mR/Std Qtr	13.67
421025	6/15/2016 - 9/14/2016	mR/Std Qtr	13.22
430369	9/14/2016 - 12/14/2016	mR/Std Qtr	14.17

Sample Point 147 [ INDICATOR - E @ 0.44 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403453	12/16/2015 - 3/16/2016	mR/Std Qtr	14.52
413027	3/16/2016 - 6/15/2016	mR/Std Qtr	13.99
421026	6/15/2016 - 9/14/2016	mR/Std Qtr	14.89
430370	9/14/2016 - 12/14/2016	mR/Std Qtr	17.21

Sample Point 148 [ INDICATOR - ESE @ 0.46 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403454	12/16/2015 - 3/16/2016	mR/Std Qtr	15.24
413028	3/16/2016 - 6/15/2016	mR/Std Qtr	12.38
421027	6/15/2016 - 9/14/2016	mR/Std Qtr	11.49
430371	9/14/2016 - 12/14/2016	mR/Std Qtr	13.42

Sample Point 149 [ INDICATOR - SE @ 0.5 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403455	12/16/2015 - 3/16/2016	mR/Std Qtr	12.96
413029	3/16/2016 - 6/15/2016	mR/Std Qtr	13.30
421028	6/15/2016 - 9/14/2016	mR/Std Qtr	10.89
430372	9/14/2016 - 12/14/2016	mR/Std Qtr	10.89

Sample Point 151 [ INDICATOR - S @ 0.37 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403456	12/16/2015 - 3/16/2016	mR/Std Qtr	14.34
413030	3/16/2016 - 6/15/2016	mR/Std Qtr	15.37
421029	6/15/2016 - 9/14/2016	mR/Std Qtr	14.31
430373	9/14/2016 - 12/14/2016	mR/Std Qtr	14.28

Sample Point 152 [ INDICATOR - SSW @ 0.44 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403457	12/16/2015 - 3/16/2016	mR/Std Qtr	13.53
413031	3/16/2016 - 6/15/2016	mR/Std Qtr	13.83



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 152 [ INDICATOR - SSW @ 0.44 miles ]

TLD RING TLD\_INNER

Sample ID:	421030	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	12.86
Sample ID:	430374	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	13.26

Sample Point 153 [ INDICATOR - SW @ 0.47 miles ]

TLD RING TLD\_INNER

Sample ID:	403458	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	17.74
Sample ID:	413032	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	18.26
Sample ID:	421031	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	16.97
Sample ID:	430375	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	17.74

Sample Point 154 [ INDICATOR - W @ 0.45 miles ]

TLD RING TLD\_INNER

Sample ID:	403459	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	21.48
Sample ID:	413033	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	17.34
Sample ID:	421032	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	17.73
Sample ID:	430376	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	18.03

Sample Point 156 [ INDICATOR - WNW @ 0.44 miles ]

TLD RING TLD\_INNER

Sample ID:	403460	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	17.88
Sample ID:	413034	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	16.15
Sample ID:	421033	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	15.24
Sample ID:	430377	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	15.76

Sample Point 157 [ INDICATOR - N @ 4.69 miles ]

TLD RING TLD\_OUTER

Sample ID:	403461	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	16.56
Sample ID:	413035	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	14.60
Sample ID:	421034	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	14.15
Sample ID:	430378	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	17.94

Sample Point 158 [ INDICATOR - NNE @ 4.33 miles ]

TLD RING TLD\_OUTER

Sample ID:	403462	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	15.78
Sample ID:	413036	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	15.12
Sample ID:	421035	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	12.21
Sample ID:	430379	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	14.58



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 159 [ INDICATOR - NE @ 4.77 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403463	12/16/2015 - 3/16/2016	mR/Std Qtr	16.38
413037	3/16/2016 - 6/15/2016	mR/Std Qtr	16.54
421036	6/15/2016 - 9/14/2016	mR/Std Qtr	15.22
430380	9/14/2016 - 12/14/2016	mR/Std Qtr	15.60

Sample Point 160 [ INDICATOR - ENE @ 4.89 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403464	12/16/2015 - 3/16/2016	mR/Std Qtr	17.97
413038	3/16/2016 - 6/15/2016	mR/Std Qtr	19.68
421037	6/15/2016 - 9/14/2016	mR/Std Qtr	14.60
430381	9/14/2016 - 12/14/2016	mR/Std Qtr	17.25

Sample Point 161 [ INDICATOR - E @ 4.7 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403465	12/16/2015 - 3/16/2016	mR/Std Qtr	17.07
413039	3/16/2016 - 6/15/2016	mR/Std Qtr	14.41
421038	6/15/2016 - 9/14/2016	mR/Std Qtr	13.81
430382	9/14/2016 - 12/14/2016	mR/Std Qtr	16.38

Sample Point 162 [ INDICATOR - ESE @ 4.53 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403466	12/16/2015 - 3/16/2016	mR/Std Qtr	13.37
413040	3/16/2016 - 6/15/2016	mR/Std Qtr	10.62
421039	6/15/2016 - 9/14/2016	mR/Std Qtr	11.32
430383	9/14/2016 - 12/14/2016	mR/Std Qtr	11.70

Sample Point 163 [ INDICATOR - SE @ 4.94 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403467	12/16/2015 - 3/16/2016	mR/Std Qtr	13.86
413041	3/16/2016 - 6/15/2016	mR/Std Qtr	10.79
421040	6/15/2016 - 9/14/2016	mR/Std Qtr	10.25
430384	9/14/2016 - 12/14/2016	mR/Std Qtr	9.79

Sample Point 164 [ INDICATOR - SSE @ 4.64 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403468	12/16/2015 - 3/16/2016	mR/Std Qtr	11.03
413042	3/16/2016 - 6/15/2016	mR/Std Qtr	11.81



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 164 [ INDICATOR - SSE @ 4.64 miles ]

TLD RING TLD\_OUTER

Sample ID:	421041	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	10.92
Sample ID:	430385	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	10.59

Sample Point 165 [ INDICATOR - S @ 4.57 miles ]

TLD RING TLD\_OUTER

Sample ID:	403469	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	20.45
Sample ID:	413043	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	20.40
Sample ID:	421042	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	17.51
Sample ID:	430386	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	20.80

Sample Point 166 [ INDICATOR - SSW @ 4.44 miles ]

TLD RING TLD\_OUTER

Sample ID:	403470	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	17.27
Sample ID:	413044	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	18.99
Sample ID:	421043	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	17.07
Sample ID:	430387	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	18.91

Sample Point 167 [ INDICATOR - SW @ 4.87 miles ]

TLD RING TLD\_OUTER

Sample ID:	403471	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	20.65
Sample ID:	413045	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	17.75
Sample ID:	421044	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	17.04
Sample ID:	430388	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	19.94

Sample Point 168 [ INDICATOR - WSW @ 4.6 miles ]

TLD RING TLD\_OUTER

Sample ID:	403472	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	16.75
Sample ID:	413046	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	16.29
Sample ID:	421045	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	14.99
Sample ID:	430389	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	16.59

Sample Point 169 [ INDICATOR - W @ 4.03 miles ]

TLD RING TLD\_OUTER

Sample ID:	403473	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	13.28
Sample ID:	413047	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	14.91
Sample ID:	421046	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	14.44
Sample ID:	430390	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	15.31



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 170 [ INDICATOR - WNW @ 4.32 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403474	12/16/2015 - 3/16/2016	mR/Std Qtr	26.00
413048	3/16/2016 - 6/15/2016	mR/Std Qtr	27.56
421047	6/15/2016 - 9/14/2016	mR/Std Qtr	24.46
430391	9/14/2016 - 12/14/2016	mR/Std Qtr	27.12

Sample Point 171 [ INDICATOR - NW @ 3.95 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403475	12/16/2015 - 3/16/2016	mR/Std Qtr	18.40
413049	3/16/2016 - 6/15/2016	mR/Std Qtr	16.72
421048	6/15/2016 - 9/14/2016	mR/Std Qtr	15.36
430392	9/14/2016 - 12/14/2016	mR/Std Qtr	18.81

Sample Point 172 [ INDICATOR - NNW @ 4.69 miles ]

TLD RING TLD\_OUTER

Sample ID	Sample Dates	Nuclide	Activity
403476	12/16/2015 - 3/16/2016	mR/Std Qtr	15.03
413050	3/16/2016 - 6/15/2016	mR/Std Qtr	14.27
421049	6/15/2016 - 9/14/2016	mR/Std Qtr	14.19
430393	9/14/2016 - 12/14/2016	mR/Std Qtr	14.71

Sample Point 173 [ INDICATOR - NNW @ 8.39 miles ]

TLD RING TLD\_SPEC

Sample ID	Sample Dates	Nuclide	Activity
403477	12/16/2015 - 3/16/2016	mR/Std Qtr	24.02
413051	3/16/2016 - 6/15/2016	mR/Std Qtr	24.53
421050	6/15/2016 - 9/14/2016	mR/Std Qtr	20.90
430394	9/14/2016 - 12/14/2016	mR/Std Qtr	24.60

Sample Point 174 [ INDICATOR - WNW @ 8.85 miles ]

TLD RING TLD\_SPEC

Sample ID	Sample Dates	Nuclide	Activity
403478	12/16/2015 - 3/16/2016	mR/Std Qtr	22.23
413052	3/16/2016 - 6/15/2016	mR/Std Qtr	22.43
421051	6/15/2016 - 9/14/2016	mR/Std Qtr	21.35
430395	9/14/2016 - 12/14/2016	mR/Std Qtr	22.92

Sample Point 175 [ CONTROL - WNW @ 15.5 miles ]

TLD RING TLD\_CTRL

Sample ID	Sample Dates	Nuclide	Activity
403479	12/16/2015 - 3/16/2016	mR/Std Qtr	23.22
413053	3/16/2016 - 6/15/2016	mR/Std Qtr	25.07



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 175 [ CONTROL - WNW @ 15.5 miles ]

TLD RING TLD\_CTRL

Sample ID:	421052	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	21.34
Sample ID:	430396	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	22.27

Sample Point 177 [ INDICATOR - S @ 8.77 miles ]

TLD RING TLD\_SPEC

Sample ID:	403480	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	14.12
Sample ID:	413054	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	12.91
Sample ID:	421053	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	11.53
Sample ID:	430397	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	14.53

Sample Point 178 [ INDICATOR - SE @ 9.36 miles ]

TLD RING TLD\_SPEC

Sample ID:	403481	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	14.64
Sample ID:	413055	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	13.25
Sample ID:	421054	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	12.45
Sample ID:	430398	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	15.53

Sample Point 180 [ INDICATOR - NNE @ 12.7 miles ]

TLD RING TLD\_SPEC

Sample ID:	403482	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	27.69
Sample ID:	413056	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	25.32
Sample ID:	430399	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	27.82

Sample Point 181 [ INDICATOR - NE @ 7.02 miles ]

TLD RING TLD\_SPEC

Sample ID:	403483	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	17.61
Sample ID:	413057	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	14.78
Sample ID:	421056	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	14.82
Sample ID:	430400	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	18.79

Sample Point 182 [ INDICATOR - ENE @ 6.23 miles ]

TLD RING TLD\_SPEC

Sample ID:	403484	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	18.75
Sample ID:	413058	Sample Dates:	3/16/2016 - 6/15/2016	Nuclide	Activity
				mR/Std Qtr	17.27
Sample ID:	421057	Sample Dates:	6/15/2016 - 9/14/2016	Nuclide	Activity
				mR/Std Qtr	18.09
Sample ID:	430401	Sample Dates:	9/14/2016 - 12/14/2016	Nuclide	Activity
				mR/Std Qtr	16.71

Sample Point 186 [ INDICATOR - NNW @ 0.24 miles ]

TLD RING TLD\_SPEC

Sample ID:	403485	Sample Dates:	12/16/2015 - 3/16/2016	Nuclide	Activity
				mR/Std Qtr	15.86





**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 186 [ INDICATOR - NNW @ 0.24 miles ]

TLD RING TLD\_SPEC

Sample ID	Sample Dates	Nuclide	Activity
413059	3/16/2016 - 6/15/2016	mR/Std Qtr	15.59
421058	6/15/2016 - 9/14/2016	mR/Std Qtr	15.50
430402	9/14/2016 - 12/14/2016	mR/Std Qtr	16.90

Sample Point 187 [ INDICATOR - N @ 0.19 miles ]

TLD RING TLD\_SPEC

Sample ID	Sample Dates	Nuclide	Activity
403486	12/16/2015 - 3/16/2016	mR/Std Qtr	18.04
413060	3/16/2016 - 6/15/2016	mR/Std Qtr	17.82
421059	6/15/2016 - 9/14/2016	mR/Std Qtr	16.28
430403	9/14/2016 - 12/14/2016	mR/Std Qtr	16.81

Sample Point 189 [ INDICATOR - SSE @ 0.43 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403487	12/16/2015 - 3/16/2016	mR/Std Qtr	15.04
413061	3/16/2016 - 6/15/2016	mR/Std Qtr	15.51
421060	6/15/2016 - 9/14/2016	mR/Std Qtr	12.97
430404	9/14/2016 - 12/14/2016	mR/Std Qtr	14.51

Sample Point 190 [ INDICATOR - WSW @ 0.37 miles ]

TLD RING TLD\_INNER

Sample ID	Sample Dates	Nuclide	Activity
403488	12/16/2015 - 3/16/2016	mR/Std Qtr	19.82
413062	3/16/2016 - 6/15/2016	mR/Std Qtr	20.18
421061	6/15/2016 - 9/14/2016	mR/Std Qtr	17.17
430405	9/14/2016 - 12/14/2016	mR/Std Qtr	20.13

Sample Point 191 [ INDICATOR - NNE @ 2.84 miles ]

TLD RING TLD\_SPEC

Sample ID	Sample Dates	Nuclide	Activity
403489	12/16/2015 - 3/16/2016	mR/Std Qtr	18.12
413063	3/16/2016 - 6/15/2016	mR/Std Qtr	15.89
421062	6/15/2016 - 9/14/2016	mR/Std Qtr	15.10
430406	9/14/2016 - 12/14/2016	mR/Std Qtr	17.40

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID	Sample Dates	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398972	1/5/2016 - 1/5/2016		Mn-54	<1.13E+01	0.00E+00	1.13E+01
			Co-58	<2.00E+01	0.00E+00	2.00E+01
			Fe-59	<4.56E+01	0.00E+00	4.56E+01
			Co-60	<2.13E+01	0.00E+00	2.13E+01
			Zn-65	<7.25E+01	0.00E+00	7.25E+01
			Zr-95	<4.67E+01	0.00E+00	4.67E+01
			Nb-95	<1.93E+01	0.00E+00	1.93E+01



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398972	1/5/2016 - 1/5/2016	MIXEDBLV	I-131	<1.84E+01	0.00E+00	1.84E+01
			Cs-134	<2.37E+01	0.00E+00	2.37E+01
			Cs-137	<2.58E+01	0.00E+00	2.58E+01
			BaLa-140	<3.20E+01	0.00E+00	3.20E+01
			Be-7	1.38E+03	2.83E+02	2.70E+02
			K-40	6.75E+02	2.19E+02	2.84E+02
401020	2/1/2016 - 2/1/2016	MIXEDBLV	Mn-54	<1.94E+01	0.00E+00	1.94E+01
			Co-58	<1.76E+01	0.00E+00	1.76E+01
			Fe-59	<3.40E+01	0.00E+00	3.40E+01
			Co-60	<2.21E+01	0.00E+00	2.21E+01
			Zn-65	<4.53E+01	0.00E+00	4.53E+01
			Zr-95	<4.11E+01	0.00E+00	4.11E+01
			Nb-95	<2.17E+01	0.00E+00	2.17E+01
			I-131	<1.53E+01	0.00E+00	1.53E+01
			Cs-134	<2.55E+01	0.00E+00	2.55E+01
			Cs-137	<2.74E+01	0.00E+00	2.74E+01
			BaLa-140	<1.84E+01	0.00E+00	1.84E+01
			Be-7	1.34E+03	2.72E+02	2.77E+02
			K-40	3.21E+03	5.41E+02	2.91E+02
404557	3/7/2016 - 3/7/2016	MIXEDBLV	Mn-54	<2.58E+01	0.00E+00	2.58E+01
			Co-58	<2.21E+01	0.00E+00	2.21E+01
			Fe-59	<3.11E+01	0.00E+00	3.11E+01
			Co-60	<2.53E+01	0.00E+00	2.53E+01
			Zn-65	<4.87E+01	0.00E+00	4.87E+01
			Zr-95	<3.83E+01	0.00E+00	3.83E+01
			Nb-95	<2.06E+01	0.00E+00	2.06E+01
			I-131	<1.68E+01	0.00E+00	1.68E+01
			Cs-134	<3.41E+01	0.00E+00	3.41E+01
			Cs-137	<1.94E+01	0.00E+00	1.94E+01
			BaLa-140	<1.98E+01	0.00E+00	1.98E+01
			Be-7	2.77E+03	4.06E+02	2.70E+02
			K-40	3.94E+03	6.11E+02	4.59E+01
407588	4/4/2016 - 4/4/2016	MIXEDBLV	Mn-54	<2.38E+01	0.00E+00	2.38E+01
			Co-58	<2.06E+01	0.00E+00	2.06E+01
			Fe-59	<3.90E+01	0.00E+00	3.90E+01
			Co-60	<2.37E+01	0.00E+00	2.37E+01
			Zn-65	<5.09E+01	0.00E+00	5.09E+01
			Zr-95	<4.53E+01	0.00E+00	4.53E+01
			Nb-95	<1.65E+01	0.00E+00	1.65E+01
			I-131	<1.99E+01	0.00E+00	1.99E+01
			Cs-134	<2.73E+01	0.00E+00	2.73E+01
			Cs-137	<2.02E+01	0.00E+00	2.02E+01
			BaLa-140	<1.58E+01	0.00E+00	1.58E+01
			Be-7	2.39E+02	1.81E+02	2.82E+02
			K-40	5.13E+03	7.69E+02	4.81E+02
410977	5/2/2016 - 5/2/2016	MIXEDBLV	Mn-54	<1.87E+01	0.00E+00	1.87E+01
			Co-58	<1.76E+01	0.00E+00	1.76E+01
			Fe-59	<3.30E+01	0.00E+00	3.30E+01
			Co-60	<2.58E+01	0.00E+00	2.58E+01
			Zn-65	<4.00E+01	0.00E+00	4.00E+01
			Zr-95	<2.51E+01	0.00E+00	2.51E+01
			Nb-95	<1.93E+01	0.00E+00	1.93E+01
			I-131	<1.73E+01	0.00E+00	1.73E+01
			Cs-134	<2.45E+01	0.00E+00	2.45E+01
			Cs-137	<1.63E+01	0.00E+00	1.63E+01
			BaLa-140	<2.22E+01	0.00E+00	2.22E+01
			Be-7	3.07E+02	1.57E+02	2.24E+02
			K-40	3.35E+03	5.67E+02	3.31E+02



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
413376	6/6/2016 - 6/6/2016	MIXEDBLV	Mn-54	<1.94E+01	0.00E+00	1.94E+01
			Co-58	<1.83E+01	0.00E+00	1.83E+01
			Fe-59	<5.16E+01	0.00E+00	5.16E+01
			Co-60	<1.52E+01	0.00E+00	1.52E+01
			Zn-65	<4.00E+01	0.00E+00	4.00E+01
			Zr-95	<4.04E+01	0.00E+00	4.04E+01
			Nb-95	<2.04E+01	0.00E+00	2.04E+01
			I-131	<1.90E+01	0.00E+00	1.90E+01
			Cs-134	<2.52E+01	0.00E+00	2.52E+01
			Cs-137	<2.43E+01	0.00E+00	2.43E+01
			BaLa-140	<2.15E+01	0.00E+00	2.15E+01
			Be-7	5.02E+02	1.94E+02	2.63E+02
			K-40	4.24E+03	6.64E+02	3.86E+02
			416428	7/5/2016 - 7/5/2016	MIXEDBLV	Mn-54
Co-58	<1.63E+01	0.00E+00				1.63E+01
Fe-59	<3.84E+01	0.00E+00				3.84E+01
Co-60	<2.62E+01	0.00E+00				2.62E+01
Zn-65	<4.85E+01	0.00E+00				4.85E+01
Zr-95	<2.70E+01	0.00E+00				2.70E+01
Nb-95	<1.85E+01	0.00E+00				1.85E+01
I-131	<1.49E+01	0.00E+00				1.49E+01
Cs-134	<2.51E+01	0.00E+00				2.51E+01
Cs-137	<1.68E+01	0.00E+00				1.68E+01
BaLa-140	<1.25E+01	0.00E+00				1.25E+01
Be-7	1.36E+03	2.30E+02				1.51E+02
K-40	3.75E+03	5.63E+02				2.43E+02
418301	8/1/2016 - 8/1/2016	MIXEDBLV				Mn-54
			Co-58	<1.05E+01	0.00E+00	1.05E+01
			Fe-59	<3.59E+01	0.00E+00	3.59E+01
			Co-60	<1.33E+01	0.00E+00	1.33E+01
			Zn-65	<2.70E+01	0.00E+00	2.70E+01
			Zr-95	<3.09E+01	0.00E+00	3.09E+01
			Nb-95	<1.59E+01	0.00E+00	1.59E+01
			I-131	<1.29E+01	0.00E+00	1.29E+01
			Cs-134	<2.04E+01	0.00E+00	2.04E+01
			Cs-137	<1.52E+01	0.00E+00	1.52E+01
			BaLa-140	<1.45E+01	0.00E+00	1.45E+01
			Be-7	7.00E+02	1.73E+02	2.00E+02
			K-40	2.28E+03	4.14E+02	3.44E+02
			421457	9/6/2016 - 9/6/2016	MIXEDBLV	Mn-54
Co-58	<1.29E+01	0.00E+00				1.29E+01
Fe-59	<3.76E+01	0.00E+00				3.76E+01
Co-60	<2.62E+01	0.00E+00				2.62E+01
Zn-65	<4.07E+01	0.00E+00				4.07E+01
Zr-95	<2.63E+01	0.00E+00				2.63E+01
Nb-95	<1.87E+01	0.00E+00				1.87E+01
I-131	<1.72E+01	0.00E+00				1.72E+01
Cs-134	<2.44E+01	0.00E+00				2.44E+01
Cs-137	<1.80E+01	0.00E+00				1.80E+01
BaLa-140	<2.55E+01	0.00E+00				2.55E+01
Be-7	1.13E+03	2.28E+02				2.27E+02
K-40	3.59E+03	5.56E+02				3.23E+02
425472	10/3/2016 - 10/3/2016	MIXEDBLV				Mn-54
			Co-58	<2.22E+01	0.00E+00	2.22E+01
			Fe-59	<6.65E+01	0.00E+00	6.65E+01
			Co-60	<3.83E+01	0.00E+00	3.83E+01
			Zn-65	<5.67E+01	0.00E+00	5.67E+01
			Zr-95	<5.95E+01	0.00E+00	5.95E+01
			Nb-95	<2.96E+01	0.00E+00	2.96E+01
			I-131	<3.24E+01	0.00E+00	3.24E+01



**MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)**

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 102 [ CONTROL - WNW @ 9.89 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
425472	10/3/2016 - 10/3/2016		Cs-134	<4.59E+01	0.00E+00	4.59E+01
			Cs-137	<2.72E+01	0.00E+00	2.72E+01
			BaLa-140	<3.70E+01	0.00E+00	3.70E+01
			Be-7	1.06E+03	3.11E+02	3.56E+02
			K-40	3.96E+03	7.81E+02	5.34E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
428233	11/7/2016 - 11/7/2016		Mn-54	<2.09E+01	0.00E+00	2.09E+01
			Co-58	<1.88E+01	0.00E+00	1.88E+01
			Fe-59	<4.12E+01	0.00E+00	4.12E+01
			Co-60	<1.93E+01	0.00E+00	1.93E+01
			Zn-65	<3.61E+01	0.00E+00	3.61E+01
			Zr-95	<3.48E+01	0.00E+00	3.48E+01
			Nb-95	<2.21E+01	0.00E+00	2.21E+01
			I-131	<1.58E+01	0.00E+00	1.58E+01
			Cs-134	<3.05E+01	0.00E+00	3.05E+01
			Cs-137	<2.31E+01	0.00E+00	2.31E+01
			BaLa-140	<2.64E+01	0.00E+00	2.64E+01
			Be-7	5.36E+02	1.94E+02	2.61E+02
			K-40	3.73E+03	5.94E+02	3.72E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
430597	12/5/2016 - 12/5/2016		Mn-54	<2.08E+01	0.00E+00	2.08E+01
			Co-58	<1.70E+01	0.00E+00	1.70E+01
			Fe-59	<3.64E+01	0.00E+00	3.64E+01
			Co-60	<2.20E+01	0.00E+00	2.20E+01
			Zn-65	<4.36E+01	0.00E+00	4.36E+01
			Zr-95	<3.56E+01	0.00E+00	3.56E+01
			Nb-95	<1.78E+01	0.00E+00	1.78E+01
			I-131	<1.77E+01	0.00E+00	1.77E+01
			Cs-134	<2.63E+01	0.00E+00	2.63E+01
			Cs-137	<2.28E+01	0.00E+00	2.28E+01
			BaLa-140	<2.02E+01	0.00E+00	2.02E+01
			Be-7	9.67E+02	2.21E+02	2.56E+02
			K-40	3.39E+03	5.00E+02	2.10E+02

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398973	1/5/2016 - 1/5/2016		Mn-54	<2.63E+01	0.00E+00	2.63E+01
			Co-58	<2.34E+01	0.00E+00	2.34E+01
			Fe-59	<4.65E+01	0.00E+00	4.65E+01
			Co-60	<2.78E+01	0.00E+00	2.78E+01
			Zn-65	<5.66E+01	0.00E+00	5.66E+01
			Zr-95	<3.24E+01	0.00E+00	3.24E+01
			Nb-95	<3.09E+01	0.00E+00	3.09E+01
			I-131	<2.74E+01	0.00E+00	2.74E+01
			Cs-134	<3.67E+01	0.00E+00	3.67E+01
			Cs-137	<3.26E+01	0.00E+00	3.26E+01
			BaLa-140	<2.68E+01	0.00E+00	2.68E+01
			Be-7	1.43E+03	3.11E+02	2.90E+02
			K-40	2.73E+03	5.99E+02	4.53E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
401021	2/1/2016 - 2/1/2016		Mn-54	<2.82E+01	0.00E+00	2.82E+01
			Co-58	<2.02E+01	0.00E+00	2.02E+01
			Fe-59	<4.00E+01	0.00E+00	4.00E+01
			Co-60	<2.13E+01	0.00E+00	2.13E+01
			Zn-65	<6.01E+01	0.00E+00	6.01E+01
			Zr-95	<4.68E+01	0.00E+00	4.68E+01
			Nb-95	<2.59E+01	0.00E+00	2.59E+01
			I-131	<1.89E+01	0.00E+00	1.89E+01
			Cs-134	<2.98E+01	0.00E+00	2.98E+01
			Cs-137	<2.10E+01	0.00E+00	2.10E+01
			BaLa-140	<1.82E+01	0.00E+00	1.82E+01
			Be-7	1.05E+03	2.64E+02	2.89E+02
			K-40	3.95E+03	6.54E+02	2.50E+02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
404558	3/7/2016 - 3/7/2016	MIXEDBLV	Mn-54	<2.16E+01	0.00E+00	2.16E+01
			Co-58	<2.14E+01	0.00E+00	2.14E+01
			Fe-59	<4.02E+01	0.00E+00	4.02E+01
			Co-60	<2.40E+01	0.00E+00	2.40E+01
			Zn-65	<5.78E+01	0.00E+00	5.78E+01
			Zr-95	<2.80E+01	0.00E+00	2.80E+01
			Nb-95	<2.15E+01	0.00E+00	2.15E+01
			I-131	<1.66E+01	0.00E+00	1.66E+01
			Cs-134	<2.30E+01	0.00E+00	2.30E+01
			Cs-137	<2.40E+01	0.00E+00	2.40E+01
			BaLa-140	<3.29E+01	0.00E+00	3.29E+01
			Be-7	6.44E+02	2.40E+02	3.21E+02
			K-40	3.32E+03	6.25E+02	4.24E+02
			407589	4/4/2016 - 4/4/2016	MIXEDBLV	Mn-54
Co-58	<1.68E+01	0.00E+00				1.68E+01
Fe-59	<1.93E+01	0.00E+00				1.93E+01
Co-60	<1.40E+01	0.00E+00				1.40E+01
Zn-65	<3.37E+01	0.00E+00				3.37E+01
Zr-95	<2.47E+01	0.00E+00				2.47E+01
Nb-95	<1.32E+01	0.00E+00				1.32E+01
I-131	<1.30E+01	0.00E+00				1.30E+01
Cs-134	<1.74E+01	0.00E+00				1.74E+01
Cs-137	<1.60E+01	0.00E+00				1.60E+01
BaLa-140	<1.59E+01	0.00E+00				1.59E+01
Be-7	4.65E+02	1.22E+02				1.19E+02
K-40	4.86E+03	6.44E+02				3.11E+02
410978	5/2/2016 - 5/2/2016	MIXEDBLV				Mn-54
			Co-58	<2.04E+01	0.00E+00	2.04E+01
			Fe-59	<5.48E+01	0.00E+00	5.48E+01
			Co-60	<3.01E+01	0.00E+00	3.01E+01
			Zn-65	<4.87E+01	0.00E+00	4.87E+01
			Zr-95	<3.77E+01	0.00E+00	3.77E+01
			Nb-95	<2.62E+01	0.00E+00	2.62E+01
			I-131	<2.08E+01	0.00E+00	2.08E+01
			Cs-134	<2.99E+01	0.00E+00	2.99E+01
			Cs-137	<3.35E+01	0.00E+00	3.35E+01
			BaLa-140	<2.90E+01	0.00E+00	2.90E+01
			Be-7	8.57E+02	2.33E+02	2.41E+02
			K-40	3.81E+03	6.91E+02	4.50E+02
			413377	6/6/2016 - 6/6/2016	MIXEDBLV	Mn-54
Co-58	<2.01E+01	0.00E+00				2.01E+01
Fe-59	<4.32E+01	0.00E+00				4.32E+01
Co-60	<2.68E+01	0.00E+00				2.68E+01
Zn-65	<4.07E+01	0.00E+00				4.07E+01
Zr-95	<3.78E+01	0.00E+00				3.78E+01
Nb-95	<1.91E+01	0.00E+00				1.91E+01
I-131	<1.77E+01	0.00E+00				1.77E+01
Cs-134	<2.50E+01	0.00E+00				2.50E+01
Cs-137	<1.99E+01	0.00E+00				1.99E+01
BaLa-140	<2.00E+01	0.00E+00				2.00E+01
Be-7	1.19E+03	2.43E+02				2.07E+02
K-40	2.96E+03	5.71E+02				4.50E+02
416429	7/5/2016 - 7/5/2016	MIXEDBLV				Mn-54
			Co-58	<2.35E+01	0.00E+00	2.35E+01
			Fe-59	<4.45E+01	0.00E+00	4.45E+01
			Co-60	<2.20E+01	0.00E+00	2.20E+01
			Zn-65	<3.14E+01	0.00E+00	3.14E+01
			Zr-95	<3.26E+01	0.00E+00	3.26E+01
			Nb-95	<2.17E+01	0.00E+00	2.17E+01
			I-131	<1.65E+01	0.00E+00	1.65E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
416429	7/5/2016 - 7/5/2016	MIXEDBLV	Cs-134	<2.61E+01	0.00E+00	2.61E+01
			Cs-137	<2.32E+01	0.00E+00	2.32E+01
			BaLa-140	<1.88E+01	0.00E+00	1.88E+01
			Be-7	8.85E+02	2.07E+02	1.99E+02
			K-40	3.83E+03	6.26E+02	3.74E+02
418302	8/1/2016 - 8/1/2016	MIXEDBLV	Mn-54	<2.33E+01	0.00E+00	2.33E+01
			Co-58	<2.30E+01	0.00E+00	2.30E+01
			Fe-59	<4.01E+01	0.00E+00	4.01E+01
			Co-60	<2.93E+01	0.00E+00	2.93E+01
			Zn-65	<4.83E+01	0.00E+00	4.83E+01
			Zr-95	<2.45E+01	0.00E+00	2.45E+01
			Nb-95	<2.26E+01	0.00E+00	2.26E+01
			I-131	<2.13E+01	0.00E+00	2.13E+01
			Cs-134	<2.87E+01	0.00E+00	2.87E+01
			Cs-137	<2.19E+01	0.00E+00	2.19E+01
			BaLa-140	<5.77E+00	0.00E+00	5.77E+00
			Be-7	7.27E+02	2.20E+02	2.69E+02
			K-40	4.14E+03	6.45E+02	2.05E+02
421458	9/6/2016 - 9/6/2016	MIXEDBLV	Mn-54	<9.04E+00	0.00E+00	9.04E+00
			Co-58	<8.38E+00	0.00E+00	8.38E+00
			Fe-59	<1.73E+01	0.00E+00	1.73E+01
			Co-60	<9.69E+00	0.00E+00	9.69E+00
			Zn-65	<2.18E+01	0.00E+00	2.18E+01
			Zr-95	<1.74E+01	0.00E+00	1.74E+01
			Nb-95	<9.33E+00	0.00E+00	9.33E+00
			I-131	<8.83E+00	0.00E+00	8.83E+00
			Cs-134	<1.00E+01	0.00E+00	1.00E+01
			Cs-137	<1.08E+01	0.00E+00	1.08E+01
			BaLa-140	<1.07E+01	0.00E+00	1.07E+01
			Be-7	5.12E+02	1.02E+02	1.13E+02
			K-40	4.67E+03	4.88E+02	1.79E+02
425473	10/3/2016 - 10/3/2016	MIXEDBLV	Mn-54	<2.06E+01	0.00E+00	2.06E+01
			Co-58	<1.73E+01	0.00E+00	1.73E+01
			Fe-59	<3.86E+01	0.00E+00	3.86E+01
			Co-60	<1.85E+01	0.00E+00	1.85E+01
			Zn-65	<4.76E+01	0.00E+00	4.76E+01
			Zr-95	<2.94E+01	0.00E+00	2.94E+01
			Nb-95	<1.85E+01	0.00E+00	1.85E+01
			I-131	<1.77E+01	0.00E+00	1.77E+01
			Cs-134	<2.50E+01	0.00E+00	2.50E+01
			Cs-137	1.22E+01	1.60E+01	2.63E+01
			BaLa-140	<1.40E+01	0.00E+00	1.40E+01
			Be-7	5.97E+02	1.85E+02	2.51E+02
			K-40	5.17E+03	6.46E+02	3.32E+02
428234	11/7/2016 - 11/7/2016	MIXEDBLV	Mn-54	<2.99E+01	0.00E+00	2.99E+01
			Co-58	<2.28E+01	0.00E+00	2.28E+01
			Fe-59	<5.99E+01	0.00E+00	5.99E+01
			Co-60	<3.55E+01	0.00E+00	3.55E+01
			Zn-65	<6.77E+01	0.00E+00	6.77E+01
			Zr-95	<5.12E+01	0.00E+00	5.12E+01
			Nb-95	<2.74E+01	0.00E+00	2.74E+01
			I-131	<2.42E+01	0.00E+00	2.42E+01
			Cs-134	<2.74E+01	0.00E+00	2.74E+01
			Cs-137	<2.24E+01	0.00E+00	2.24E+01
			BaLa-140	<2.61E+01	0.00E+00	2.61E+01
			Be-7	8.32E+02	2.34E+02	2.44E+02
			K-40	3.74E+03	6.85E+02	4.04E+02
430598	12/5/2016 - 12/5/2016	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
			Mn-54	<1.70E+01	0.00E+00	1.70E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 120 [ INDICATOR - NNE @ 0.46 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
430598	12/5/2016 - 12/5/2016		Co-58	<1.83E+01	0.00E+00	1.83E+01
			Fe-59	<4.48E+01	0.00E+00	4.48E+01
			Co-60	<2.23E+01	0.00E+00	2.23E+01
			Zn-65	<5.08E+01	0.00E+00	5.08E+01
			Zr-95	<4.55E+01	0.00E+00	4.55E+01
			Nb-95	<2.12E+01	0.00E+00	2.12E+01
			I-131	<1.96E+01	0.00E+00	1.96E+01
			Cs-134	<2.89E+01	0.00E+00	2.89E+01
			Cs-137	<2.50E+01	0.00E+00	2.50E+01
			BaLa-140	<2.78E+01	0.00E+00	2.78E+01
			Be-7	8.84E+02	3.14E+02	4.34E+02
			K-40	2.53E+03	5.30E+02	3.28E+02

## Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398974	1/5/2016 - 1/5/2016		Mn-54	<2.45E+01	0.00E+00	2.45E+01
			Co-58	<2.29E+01	0.00E+00	2.29E+01
			Fe-59	<6.52E+01	0.00E+00	6.52E+01
			Co-60	<1.66E+01	0.00E+00	1.66E+01
			Zn-65	<5.52E+01	0.00E+00	5.52E+01
			Zr-95	<4.40E+01	0.00E+00	4.40E+01
			Nb-95	<2.55E+01	0.00E+00	2.55E+01
			I-131	<2.35E+01	0.00E+00	2.35E+01
			Cs-134	<2.61E+01	0.00E+00	2.61E+01
			Cs-137	<3.45E+01	0.00E+00	3.45E+01
			BaLa-140	<3.38E+01	0.00E+00	3.38E+01
			Be-7	9.67E+02	2.77E+02	3.23E+02
			K-40	4.18E+03	7.32E+02	4.23E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
401022	2/1/2016 - 2/1/2016		Mn-54	<1.97E+01	0.00E+00	1.97E+01
			Co-58	<2.19E+01	0.00E+00	2.19E+01
			Fe-59	<3.76E+01	0.00E+00	3.76E+01
			Co-60	<1.89E+01	0.00E+00	1.89E+01
			Zn-65	<4.99E+01	0.00E+00	4.99E+01
			Zr-95	<4.81E+01	0.00E+00	4.81E+01
			Nb-95	<1.43E+01	0.00E+00	1.43E+01
			I-131	<2.34E+01	0.00E+00	2.34E+01
			Cs-134	<2.96E+01	0.00E+00	2.96E+01
			Cs-137	<2.90E+01	0.00E+00	2.90E+01
			BaLa-140	<6.91E+00	0.00E+00	6.91E+00
			Be-7	1.25E+03	2.99E+02	3.25E+02
			K-40	4.13E+03	6.83E+02	2.80E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
404559	3/7/2016 - 3/7/2016		Mn-54	<1.86E+01	0.00E+00	1.86E+01
			Co-58	<1.52E+01	0.00E+00	1.52E+01
			Fe-59	<3.72E+01	0.00E+00	3.72E+01
			Co-60	<2.24E+01	0.00E+00	2.24E+01
			Zn-65	<2.19E+01	0.00E+00	2.19E+01
			Zr-95	<3.78E+01	0.00E+00	3.78E+01
			Nb-95	<1.85E+01	0.00E+00	1.85E+01
			I-131	<1.49E+01	0.00E+00	1.49E+01
			Cs-134	<2.81E+01	0.00E+00	2.81E+01
			Cs-137	<1.90E+01	0.00E+00	1.90E+01
			BaLa-140	<2.58E+01	0.00E+00	2.58E+01
			Be-7	1.20E+03	2.31E+02	1.65E+02
			K-40	3.60E+03	5.93E+02	2.96E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
407590	4/4/2016 - 4/4/2016		Mn-54	<1.98E+01	0.00E+00	1.98E+01
			Co-58	<1.54E+01	0.00E+00	1.54E+01
			Fe-59	<2.66E+01	0.00E+00	2.66E+01
			Co-60	<1.33E+01	0.00E+00	1.33E+01
			Zn-65	<4.15E+01	0.00E+00	4.15E+01
			Zr-95	<3.06E+01	0.00E+00	3.06E+01
			Nb-95	<2.05E+01	0.00E+00	2.05E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
407590	4/4/2016 - 4/4/2016	MIXEDBLV	I-131	<1.36E+01	0.00E+00	1.36E+01
			Cs-134	<2.00E+01	0.00E+00	2.00E+01
			Cs-137	<2.09E+01	0.00E+00	2.09E+01
			BaLa-140	<2.18E+01	0.00E+00	2.18E+01
			Be-7	2.20E+02	1.15E+02	1.60E+02
			K-40	4.34E+03	6.19E+02	2.38E+02
410979	5/2/2016 - 5/2/2016	MIXEDBLV	Mn-54	<2.60E+01	0.00E+00	2.60E+01
			Co-58	<2.57E+01	0.00E+00	2.57E+01
			Fe-59	<5.17E+01	0.00E+00	5.17E+01
			Co-60	<2.14E+01	0.00E+00	2.14E+01
			Zn-65	<5.40E+01	0.00E+00	5.40E+01
			Zr-95	<3.13E+01	0.00E+00	3.13E+01
			Nb-95	<1.63E+01	0.00E+00	1.63E+01
			I-131	<1.62E+01	0.00E+00	1.62E+01
			Cs-134	<2.28E+01	0.00E+00	2.28E+01
			Cs-137	<2.45E+01	0.00E+00	2.45E+01
			BaLa-140	<2.43E+01	0.00E+00	2.43E+01
			Be-7	2.29E+02	1.14E+02	2.17E+02
			K-40	4.43E+03	6.79E+02	2.28E+02
413378	6/6/2016 - 6/6/2016	MIXEDBLV	Mn-54	<2.05E+01	0.00E+00	2.05E+01
			Co-58	<2.19E+01	0.00E+00	2.19E+01
			Fe-59	<3.58E+01	0.00E+00	3.58E+01
			Co-60	<2.52E+01	0.00E+00	2.52E+01
			Zn-65	<6.45E+01	0.00E+00	6.45E+01
			Zr-95	<4.08E+01	0.00E+00	4.08E+01
			Nb-95	<1.92E+01	0.00E+00	1.92E+01
			I-131	<1.72E+01	0.00E+00	1.72E+01
			Cs-134	<3.18E+01	0.00E+00	3.18E+01
			Cs-137	<2.69E+01	0.00E+00	2.69E+01
			BaLa-140	<2.33E+01	0.00E+00	2.33E+01
			Be-7	5.24E+02	2.04E+02	2.75E+02
			K-40	3.29E+03	5.71E+02	2.78E+02
416430	7/5/2016 - 7/5/2016	MIXEDBLV	Mn-54	<1.56E+01	0.00E+00	1.56E+01
			Co-58	<1.54E+01	0.00E+00	1.54E+01
			Fe-59	<2.68E+01	0.00E+00	2.68E+01
			Co-60	<1.85E+01	0.00E+00	1.85E+01
			Zn-65	<3.68E+01	0.00E+00	3.68E+01
			Zr-95	<3.14E+01	0.00E+00	3.14E+01
			Nb-95	<1.56E+01	0.00E+00	1.56E+01
			I-131	<1.33E+01	0.00E+00	1.33E+01
			Cs-134	<1.50E+01	0.00E+00	1.50E+01
			Cs-137	<1.66E+01	0.00E+00	1.66E+01
			BaLa-140	<3.83E+00	0.00E+00	3.83E+00
			Be-7	6.51E+02	1.56E+02	1.62E+02
			K-40	3.63E+03	5.34E+02	3.14E+02
418303	8/1/2016 - 8/1/2016	MIXEDBLV	Mn-54	<2.27E+01	0.00E+00	2.27E+01
			Co-58	<1.93E+01	0.00E+00	1.93E+01
			Fe-59	<3.02E+01	0.00E+00	3.02E+01
			Co-60	<2.32E+01	0.00E+00	2.32E+01
			Zn-65	<4.03E+01	0.00E+00	4.03E+01
			Zr-95	<3.48E+01	0.00E+00	3.48E+01
			Nb-95	<1.99E+01	0.00E+00	1.99E+01
			I-131	<1.72E+01	0.00E+00	1.72E+01
			Cs-134	<2.71E+01	0.00E+00	2.71E+01
			Cs-137	<1.91E+01	0.00E+00	1.91E+01
			BaLa-140	<1.86E+01	0.00E+00	1.86E+01
			Be-7	6.97E+02	1.99E+02	2.30E+02
			K-40	2.36E+03	4.72E+02	3.39E+02





# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 125 [ INDICATOR - SW @ 0.38 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
421459	9/6/2016 - 9/6/2016		Mn-54	<1.83E+01	0.00E+00	1.83E+01
			Co-58	<1.63E+01	0.00E+00	1.63E+01
			Fe-59	<3.22E+01	0.00E+00	3.22E+01
			Co-60	<2.09E+01	0.00E+00	2.09E+01
			Zn-65	<4.63E+01	0.00E+00	4.63E+01
			Zr-95	<3.12E+01	0.00E+00	3.12E+01
			Nb-95	<2.03E+01	0.00E+00	2.03E+01
			I-131	<1.95E+01	0.00E+00	1.95E+01
			Cs-134	<2.39E+01	0.00E+00	2.39E+01
			Cs-137	<1.86E+01	0.00E+00	1.86E+01
			BaLa-140	<2.40E+01	0.00E+00	2.40E+01
			Be-7	1.22E+03	2.45E+02	2.24E+02
			K-40	4.70E+03	6.84E+02	3.12E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
425474	10/3/2016 - 10/3/2016		Mn-54	<3.69E+01	0.00E+00	3.69E+01
			Co-58	<2.76E+01	0.00E+00	2.76E+01
			Fe-59	<5.61E+01	0.00E+00	5.61E+01
			Co-60	<4.44E+01	0.00E+00	4.44E+01
			Zn-65	<7.07E+01	0.00E+00	7.07E+01
			Zr-95	<6.31E+01	0.00E+00	6.31E+01
			Nb-95	<4.00E+01	0.00E+00	4.00E+01
			I-131	<4.07E+01	0.00E+00	4.07E+01
			Cs-134	<3.92E+01	0.00E+00	3.92E+01
			Cs-137	<3.39E+01	0.00E+00	3.39E+01
			BaLa-140	<5.58E+01	0.00E+00	5.58E+01
			Be-7	9.34E+02	3.18E+02	3.72E+02
			K-40	2.34E+03	5.94E+02	9.20E+01

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
428235	11/7/2016 - 11/7/2016		Mn-54	<3.06E+01	0.00E+00	3.06E+01
			Co-58	<2.25E+01	0.00E+00	2.25E+01
			Fe-59	<3.69E+01	0.00E+00	3.69E+01
			Co-60	<3.17E+01	0.00E+00	3.17E+01
			Zn-65	<5.20E+01	0.00E+00	5.20E+01
			Zr-95	<4.69E+01	0.00E+00	4.69E+01
			Nb-95	<2.52E+01	0.00E+00	2.52E+01
			I-131	<2.21E+01	0.00E+00	2.21E+01
			Cs-134	<2.88E+01	0.00E+00	2.88E+01
			Cs-137	<2.49E+01	0.00E+00	2.49E+01
			BaLa-140	<3.55E+01	0.00E+00	3.55E+01
			Be-7	1.91E+03	3.37E+02	2.64E+02
			K-40	2.28E+03	4.79E+02	2.36E+02

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
430599	12/5/2016 - 12/5/2016		Mn-54	<2.55E+01	0.00E+00	2.55E+01
			Co-58	<1.98E+01	0.00E+00	1.98E+01
			Fe-59	<5.15E+01	0.00E+00	5.15E+01
			Co-60	<2.07E+01	0.00E+00	2.07E+01
			Zn-65	<5.08E+01	0.00E+00	5.08E+01
			Zr-95	<4.36E+01	0.00E+00	4.36E+01
			Nb-95	<2.41E+01	0.00E+00	2.41E+01
			I-131	<2.05E+01	0.00E+00	2.05E+01
			Cs-134	<3.12E+01	0.00E+00	3.12E+01
			Cs-137	<2.59E+01	0.00E+00	2.59E+01
			BaLa-140	<2.04E+01	0.00E+00	2.04E+01
			Be-7	3.56E+02	1.63E+02	2.08E+02
			K-40	3.72E+03	6.72E+02	3.51E+02

## Sample Point 193 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398975	1/5/2016 - 1/5/2016		Mn-54	<2.51E+01	0.00E+00	2.51E+01
			Co-58	<1.75E+01	0.00E+00	1.75E+01
			Fe-59	<4.78E+01	0.00E+00	4.78E+01
			Co-60	<2.41E+01	0.00E+00	2.41E+01
			Zn-65	<5.19E+01	0.00E+00	5.19E+01
			Zr-95	<3.65E+01	0.00E+00	3.65E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 193 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
398975	1/5/2016 - 1/5/2016	MIXEDBLV	Nb-95	<1.86E+01	0.00E+00	1.86E+01
			I-131	<1.77E+01	0.00E+00	1.77E+01
			Cs-134	<2.49E+01	0.00E+00	2.49E+01
			Cs-137	<2.50E+01	0.00E+00	2.50E+01
			BaLa-140	<5.78E+00	0.00E+00	5.78E+00
			Be-7	1.18E+03	2.54E+02	2.51E+02
			K-40	3.75E+03	6.06E+02	2.76E+02
401023	2/1/2016 - 2/1/2016	MIXEDBLV	Mn-54	<2.04E+01	0.00E+00	2.04E+01
			Co-58	<1.33E+01	0.00E+00	1.33E+01
			Fe-59	<4.73E+01	0.00E+00	4.73E+01
			Co-60	<2.31E+01	0.00E+00	2.31E+01
			Zn-65	<3.73E+01	0.00E+00	3.73E+01
			Zr-95	<2.88E+01	0.00E+00	2.88E+01
			Nb-95	<1.28E+01	0.00E+00	1.28E+01
			I-131	<1.66E+01	0.00E+00	1.66E+01
			Cs-134	<1.90E+01	0.00E+00	1.90E+01
			Cs-137	<2.20E+01	0.00E+00	2.20E+01
			BaLa-140	<2.20E+01	0.00E+00	2.20E+01
			Be-7	2.11E+03	3.18E+02	1.60E+02
			K-40	2.80E+03	4.84E+02	4.46E+01
			404560	3/7/2016 - 3/7/2016	MIXEDBLV	Mn-54
Co-58	<1.77E+01	0.00E+00				1.77E+01
Fe-59	<3.62E+01	0.00E+00				3.62E+01
Co-60	<1.88E+01	0.00E+00				1.88E+01
Zn-65	<3.57E+01	0.00E+00				3.57E+01
Zr-95	<2.21E+01	0.00E+00				2.21E+01
Nb-95	<1.85E+01	0.00E+00				1.85E+01
I-131	<1.72E+01	0.00E+00				1.72E+01
Cs-134	<2.36E+01	0.00E+00				2.36E+01
Cs-137	<2.04E+01	0.00E+00				2.04E+01
BaLa-140	<1.45E+01	0.00E+00				1.45E+01
Be-7	1.92E+03	3.00E+02				1.90E+02
K-40	3.35E+03	5.51E+02				2.77E+02
407591	4/4/2016 - 4/4/2016	MIXEDBLV				Mn-54
			Co-58	<1.95E+01	0.00E+00	1.95E+01
			Fe-59	<3.92E+01	0.00E+00	3.92E+01
			Co-60	<2.15E+01	0.00E+00	2.15E+01
			Zn-65	<3.19E+01	0.00E+00	3.19E+01
			Zr-95	<3.13E+01	0.00E+00	3.13E+01
			Nb-95	<1.74E+01	0.00E+00	1.74E+01
			I-131	<1.40E+01	0.00E+00	1.40E+01
			Cs-134	<1.96E+01	0.00E+00	1.96E+01
			Cs-137	<1.53E+01	0.00E+00	1.53E+01
			BaLa-140	<1.80E+01	0.00E+00	1.80E+01
			Be-7	3.83E+02	1.51E+02	1.95E+02
			K-40	4.04E+03	6.20E+02	3.32E+02
			410980	5/2/2016 - 5/2/2016	MIXEDBLV	Mn-54
Co-58	<2.96E+01	0.00E+00				2.96E+01
Fe-59	<5.69E+01	0.00E+00				5.69E+01
Co-60	<3.69E+01	0.00E+00				3.69E+01
Zn-65	<7.22E+01	0.00E+00				7.22E+01
Zr-95	<4.88E+01	0.00E+00				4.88E+01
Nb-95	<3.74E+01	0.00E+00				3.74E+01
I-131	<2.62E+01	0.00E+00				2.62E+01
Cs-134	<3.20E+01	0.00E+00				3.20E+01
Cs-137	<3.17E+01	0.00E+00				3.17E+01
BaLa-140	<3.55E+01	0.00E+00				3.55E+01
Be-7	5.39E+02	2.62E+02				3.69E+02
K-40	5.62E+03	9.13E+02				4.12E+02



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 193 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
413379	6/6/2016 - 6/6/2016	MIXEDBLV	Mn-54	<1.38E+01	0.00E+00	1.38E+01
			Co-58	<2.53E+01	0.00E+00	2.53E+01
			Fe-59	<4.50E+01	0.00E+00	4.50E+01
			Co-60	<2.62E+01	0.00E+00	2.62E+01
			Zn-65	<4.85E+01	0.00E+00	4.85E+01
			Zr-95	<3.06E+01	0.00E+00	3.06E+01
			Nb-95	<2.25E+01	0.00E+00	2.25E+01
			I-131	<2.07E+01	0.00E+00	2.07E+01
			Cs-134	<2.41E+01	0.00E+00	2.41E+01
			Cs-137	<1.87E+01	0.00E+00	1.87E+01
			BaLa-140	<1.66E+01	0.00E+00	1.66E+01
			Be-7	1.05E+03	2.31E+02	1.98E+02
			K-40	4.02E+03	6.84E+02	4.69E+02
			416431	7/5/2016 - 7/5/2016	MIXEDBLV	Mn-54
Co-58	<1.96E+01	0.00E+00				1.96E+01
Fe-59	<2.60E+01	0.00E+00				2.60E+01
Co-60	<2.41E+01	0.00E+00				2.41E+01
Zn-65	<5.78E+01	0.00E+00				5.78E+01
Zr-95	<2.57E+01	0.00E+00				2.57E+01
Nb-95	<1.97E+01	0.00E+00				1.97E+01
I-131	<1.78E+01	0.00E+00				1.78E+01
Cs-134	<2.93E+01	0.00E+00				2.93E+01
Cs-137	<2.31E+01	0.00E+00				2.31E+01
BaLa-140	<2.40E+01	0.00E+00				2.40E+01
Be-7	1.20E+03	2.52E+02				2.23E+02
K-40	4.42E+03	6.81E+02				2.28E+02
418304	8/1/2016 - 8/1/2016	MIXEDBLV				Mn-54
			Co-58	<2.01E+01	0.00E+00	2.01E+01
			Fe-59	<4.54E+01	0.00E+00	4.54E+01
			Co-60	<2.97E+01	0.00E+00	2.97E+01
			Zn-65	<5.17E+01	0.00E+00	5.17E+01
			Zr-95	<3.47E+01	0.00E+00	3.47E+01
			Nb-95	<3.12E+01	0.00E+00	3.12E+01
			I-131	<2.52E+01	0.00E+00	2.52E+01
			Cs-134	<2.95E+01	0.00E+00	2.95E+01
			Cs-137	<2.92E+01	0.00E+00	2.92E+01
			BaLa-140	<3.07E+01	0.00E+00	3.07E+01
			Be-7	1.12E+03	2.87E+02	3.24E+02
			K-40	4.63E+03	7.69E+02	4.68E+02
			421460	9/6/2016 - 9/6/2016	MIXEDBLV	Mn-54
Co-58	<2.15E+01	0.00E+00				2.15E+01
Fe-59	<4.43E+01	0.00E+00				4.43E+01
Co-60	<2.00E+01	0.00E+00				2.00E+01
Zn-65	<5.01E+01	0.00E+00				5.01E+01
Zr-95	<3.72E+01	0.00E+00				3.72E+01
Nb-95	<2.06E+01	0.00E+00				2.06E+01
I-131	<1.88E+01	0.00E+00				1.88E+01
Cs-134	<2.14E+01	0.00E+00				2.14E+01
Cs-137	<2.05E+01	0.00E+00				2.05E+01
BaLa-140	<2.29E+01	0.00E+00				2.29E+01
Be-7	1.02E+03	2.34E+02				2.53E+02
K-40	5.40E+03	7.37E+02				2.96E+02
425475	10/3/2016 - 10/3/2016	MIXEDBLV				Mn-54
			Co-58	<2.46E+01	0.00E+00	2.46E+01
			Fe-59	<6.48E+01	0.00E+00	6.48E+01
			Co-60	<3.62E+01	0.00E+00	3.62E+01
			Zn-65	<7.00E+01	0.00E+00	7.00E+01
			Zr-95	<5.71E+01	0.00E+00	5.71E+01
			Nb-95	<2.86E+01	0.00E+00	2.86E+01
			I-131	<2.52E+01	0.00E+00	2.52E+01



# MCGUIRE Radiological Environmental Monitoring Analysis Report - 2016 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 193 [ INDICATOR - N @ 0.19 miles ]

Sample ID:	Sample Dates:	MIXEDBLV	Nuclide	Activity	2 Sigma Error	MDA
425475	10/3/2016 - 10/3/2016	MIXEDBLV	Cs-134	<3.64E+01	0.00E+00	3.64E+01
			Cs-137	<2.92E+01	0.00E+00	2.92E+01
			BaLa-140	<2.23E+01	0.00E+00	2.23E+01
			Be-7	1.06E+03	2.65E+02	2.51E+02
			K-40	4.43E+03	7.72E+02	3.99E+02
428236	11/7/2016 - 11/7/2016	MIXEDBLV	Mn-54	<1.46E+01	0.00E+00	1.46E+01
			Co-58	<1.84E+01	0.00E+00	1.84E+01
			Fe-59	<3.61E+01	0.00E+00	3.61E+01
			Co-60	<9.89E+00	0.00E+00	9.89E+00
			Zn-65	<3.71E+01	0.00E+00	3.71E+01
			Zr-95	<3.08E+01	0.00E+00	3.08E+01
			Nb-95	<1.65E+01	0.00E+00	1.65E+01
			I-131	<1.45E+01	0.00E+00	1.45E+01
			Cs-134	<1.81E+01	0.00E+00	1.81E+01
			Cs-137	<2.06E+01	0.00E+00	2.06E+01
			BaLa-140	<1.57E+01	0.00E+00	1.57E+01
			Be-7	3.73E+02	1.62E+02	2.28E+02
			K-40	4.39E+03	6.04E+02	1.68E+02
430600	12/5/2016 - 12/5/2016	MIXEDBLV	Mn-54	<2.58E+01	0.00E+00	2.58E+01
			Co-58	<2.11E+01	0.00E+00	2.11E+01
			Fe-59	<6.60E+01	0.00E+00	6.60E+01
			Co-60	<3.10E+01	0.00E+00	3.10E+01
			Zn-65	<5.40E+01	0.00E+00	5.40E+01
			Zr-95	<4.84E+01	0.00E+00	4.84E+01
			Nb-95	<3.19E+01	0.00E+00	3.19E+01
			I-131	<2.78E+01	0.00E+00	2.78E+01
			Cs-134	<3.05E+01	0.00E+00	3.05E+01
			Cs-137	<2.98E+01	0.00E+00	2.98E+01
			BaLa-140	<3.17E+01	0.00E+00	3.17E+01
			Be-7	6.18E+02	2.21E+02	2.67E+02
			K-40	3.97E+03	7.27E+02	4.34E+02



**APPENDIX F**

**ERRATA TO  
PREVIOUS REPORTS**

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# APPENDIX F

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## ERRATA TO THE 2016 AREOR

### **McGuire AREOR: 2014, 2015**

During a 2016 Dosimetry Laboratory peer assessment, it was discovered the 2014 and 2015 (all quarters) internal environmental TLD crosschecks were not completed in accordance with procedure RD/0/B/4000/13, Environmental Monitoring (NCR # 02073609). Environmental monitoring is not National Voluntary Laboratory Accreditation Program (NVLAP) accredited, but the internal crosscheck data was reported to the NRC in the 2014 and 2015 AREORs. External environmental TLD crosschecks were performed during 2014 and 2015 in accordance with procedure RD/0/B/4000/13, Environmental Monitoring, therefore environmental TLD QA/QC was performed.

Laboratory TLD data supporting the 2014 and 2015 internal environmental TLD crosscheck result tables could not be located during the 2016 assessment. The internal environmental crosscheck (Duke Energy) table indicated in the quality assurance section of the 2014 and 2015 reports is therefore not considered acceptable and is removed from the 2014 and 2015 reports. The internal environmental TLD crosscheck data were not presented in the 2016 AREOR and were removed from the quality assurance section in entirety.