

**MCGUIRE**

**NUCLEAR**

**STATION**

## MCGUIRE NUCLEAR STATION HUNTERSVILLE, MECKLENBURG COUNTY

Duke Power Company (Duke), a subsidiary of Duke Energy Corporation, operates the McGuire Nuclear Station (MNS) located about 17 miles NW of Charlotte, N.C., on Lake Norman. The plant consists of two pressurized water reactors with a net design rating of 1180 MW(e) each. Commercial power production was initiated by Unit 1 on Dec. 1, 1981, and Unit 2 on March 1, 1984.

The RPS has conducted an environmental radiation monitoring program around MNS since 1976. This environmental monitoring consists of sampling the following media: air particulate, surface water, milk, fish, crops/vegetation, soil/sediment and thermoluminescent dosimetry (TLD). For a map of sampling locations around MNS, please see pages 4-4 and 4-5.

For 2008, all gross beta results for NCRPS air samples were below the section’s investigation level of 0.5 pCi/m<sup>3</sup>, and no appreciable upward trend was noted when compared with results from years past. The McGuire Nuclear Station’s and RPS’ results are for the most part in general agreement as can be seen in the gross beta activity averages for air particulate samples collected in 2008:

<b>BETA AVERAGES FOR MCGUIRE AIR SAMPLING LOCATIONS, 2008</b>			
<b>Location</b>	<b>NCRPS Average (pCi/m<sup>3</sup>)</b>	<b>MNS Average (pCi/m<sup>3</sup>)</b>	<b>% Difference*</b>
MG-APLV-120 (Indicator)	2.26 E-2	1.90 E-2	17.3
MG-APLV-134 (Control)	2.52 E-2	1.91 E-2	27.5
MG-APLV-125	1.93 E-2	1.88E-2	2.81
MG-APLV-133	2.78 E-2	1.91 E-2	36.9
MG-APLV-119 (not co-located with MNS)	2.13 E-2		

\*Please note that in this case "percent difference" refers to the difference from the average of the two measurements.

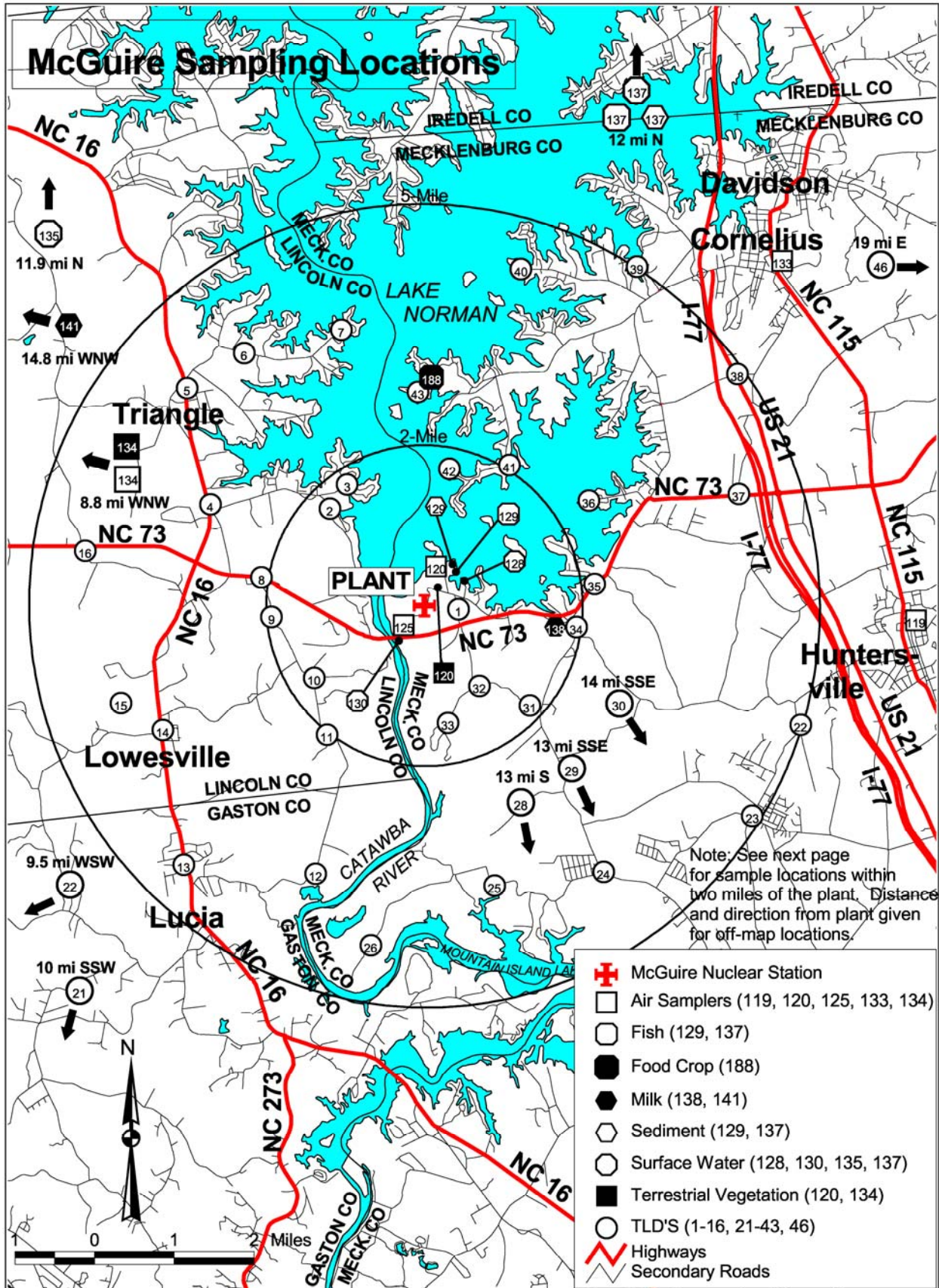
Radioiodine was not detected in air samples collected at the control and indicator locations in 2008. No occurrences of radioiodine in air were detected in samples collected from co-located MNS air samplers. Additionally, no man-made activity was detected in gamma isotopic analyses of air samples collected around MNS in 2008.

Significant amounts of radioiodine were not detected in surface water samples collected at the indicator location (MG-SW-128) in 2008. Average tritium levels were low in 2008 with an indicator site (MG-SW-128) average of 2020 pCi/l and a control site (MG-SW-135) average of 524 pCi/l for 2008. Man-made radionuclides were detected only once in surface water samples collected in 2008, in a trace amount of 3.48 ± 1.70 pCi/L.

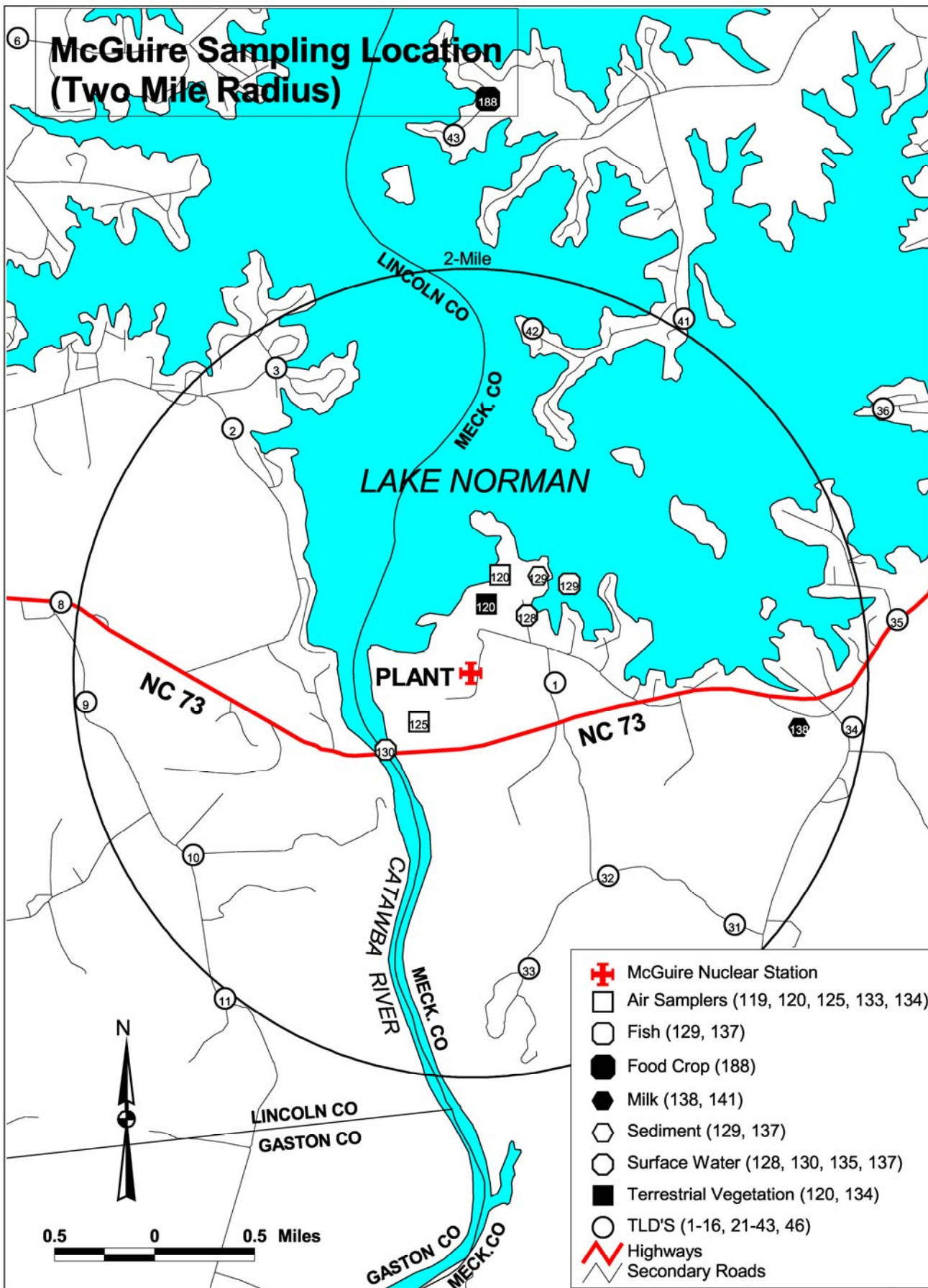
For milk samples collected in 2008, no significant amount (above the investigation level of 10 pCi/l) of radioiodine was detected. In addition, man-made radionuclides were detected once during gamma analyses of 2008 milk samples. In a sample collected on Dec. 8, 2008, the section detected  $0.558 \pm 0.327$  pCi/l of Cesium-137. This is a trace amount of activity and MNS did not find any activity in the split sample for the same collection date.

For fish samples collected in 2008, several samples were found to have small amounts of cesium-137. Cs-137 is commonly seen in small amounts in fish and its presence is probably due to past atmospheric nuclear weapons testing. The detected levels of these radionuclides were very low in all instances.

For the sediment samples and food crop collected at location in 2008, no man-made radionuclides were found. Thermoluminescent dosimetry results for 2008 produced a yearly average exposure of 59.3 mR for all sites. This is less than the statewide average of 75 mR/year.







**Section 3: McGuire Nuclear Station, Huntersville, North Carolina**

**Air Particulate - Gross Beta, (pCi/m<sup>3</sup>)**

Date	Indicator (MG-APLV-120) <sup>a</sup>				Control (MG-APLV-134) <sup>a</sup>			
	All measurements x 10 <sup>-2</sup> pCi/m <sup>3</sup>				All measurements x 10 <sup>-2</sup> pCi/m <sup>3</sup>			
	RPS		MNS		RPS		MNS	
Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error	
1/7/08	3.92	0.15	2.85	0.16	3.51	0.13	3.37	0.17
1/14/08	1.78	0.08	1.49	0.13	1.66	0.07	1.83	0.14
1/21/08	1.51	0.07	2.10	0.15	2.38	0.10	2.17	0.15
1/28/08	3.17	0.13	2.56	0.16	2.89	0.11	2.89	0.17
2/4/08	3.07	0.12	2.43	0.15	2.49	0.10	2.45	0.16
2/11/08	2.59	0.11	2.32	0.15	2.22	0.09	2.00	0.14
2/18/08	2.63	0.11	2.04	0.15	2.50	0.10	2.32	0.15
2/25/08	2.28	0.10	1.73	0.14	1.91	0.08	1.95	0.15
3/3/08	1.68	0.08	1.65	0.13	1.64	0.07	1.73	0.13
3/10/08	1.54	0.07	1.11	0.13	1.46	0.07	1.50	0.13
3/17/08	3.00	0.12	2.31	0.15	2.94	0.12	2.32	0.16
3/24/08	1.76	0.08	1.78	0.14	1.71	0.07	1.83	0.13
3/31/08	1.94	0.09	1.62	0.13	1.91	0.09	1.71	0.14
4/7/08	0.99	0.05	0.56	0.12	0.84	0.05	0.64	0.11
4/14/08 <sup>b</sup>	1.05	0.06	1.00	0.12	1.18	0.06	1.45	0.13
4/21/08 <sup>b</sup>	1.96	0.09	1.71	0.14	1.75	0.08	1.71	0.14
4/28/08	1.35	0.07	1.15	0.12	1.26	0.06	1.21	0.13
5/5/08 <sup>c</sup>			1.85	0.14			2.17	0.16
5/12/08	2.00	0.09	1.63	0.14	2.34	0.11	1.61	0.14
5/19/08	1.52	0.07	1.33	0.13	1.71	0.08	1.23	0.13
5/27/08	1.90	0.08	1.65	0.12	2.35	0.10	1.52	0.12
6/2/08	1.72	0.08	1.67	0.16	2.10	0.09	1.72	0.15
6/9/08	2.22	0.09	2.13	0.15	2.83	0.12	2.33	0.16
6/16/08	2.48	0.11	2.03	0.15	2.98	0.13	2.16	0.15
6/23/08	2.09	0.09	1.92	0.14	2.59	0.11	1.64	0.14
6/30/08	2.10	0.09	1.77	0.15	2.56	0.11	1.68	0.14
7/7/08	1.63	0.07	1.88	0.13	2.19	0.09	1.86	0.14
7/14/08	1.71	0.08	1.21	0.13	1.91	0.09	1.33	0.13
7/21/08	2.27	0.10	2.43	0.15	2.62	0.12	1.92	0.15
7/28/08	2.51	0.10	2.02	0.16	3.29	0.13	1.81	0.15
8/4/08	2.76	0.11	2.07	0.15	3.47	0.14	2.39	0.16
8/11/08	3.05	0.12	2.83	0.17	3.70	0.15	2.49	0.16
8/18/08	2.57	0.11	1.95	0.15	3.14	0.13	2.13	0.16
8/25/08	2.79	0.12	1.94	0.15	3.74	0.16	2.51	0.15
9/2/08	1.46	0.07	1.20	0.11	1.72	0.08	1.36	0.12
9/8/08	2.94	0.12	2.46	0.17	2.39	0.10	2.15	0.16
9/15/08 <sup>d</sup>	1.47	0.07	1.52	0.13			1.27	0.12
9/22/08	2.12	0.09	1.86	0.14	2.46	0.10	1.73	0.13
9/29/08	2.16	0.09	1.59	0.13	2.15	0.09	1.64	0.14
10/6/08	3.21	0.13	2.47	0.16	3.78	0.15	2.60	0.15
10/13/08	3.34	0.13	2.69	0.16	3.74	0.15	2.79	0.16
10/20/08	3.14	0.12	2.51	0.16	3.83	0.15	2.00	0.14
10/27/08	1.77	0.08	1.87	0.14	2.56	0.10	1.97	0.15
11/3/08	2.70	0.11	2.05	0.15	3.27	0.13	1.73	0.14
11/10/08 <sup>e</sup>			2.07	0.15	3.22	0.13	2.15	0.15
11/17/08 <sup>f</sup>			1.36	0.13	2.43	0.10	1.54	0.13
11/24/08 <sup>g</sup>			1.75	0.14	2.12	0.09	1.93	0.15
12/1/08	3.69	0.14	2.36	0.16	4.00	0.15	2.19	0.15
12/8/08	2.61	0.10	2.16	0.15	2.70	0.11	1.83	0.14
12/15/08	2.23	0.09	1.66	0.14	2.47	0.10	1.37	0.13
12/22/08	2.05	0.08	1.81	0.14	2.17	0.09	1.62	0.14
12/29/08	1.83	0.08	2.48	0.15	3.32	0.13	1.94	0.14

### Air Particulate - Gross Beta, (pCi/m<sup>3</sup>)

<u>Date</u>	<u>Indicator (MG-APLV-120)<sup>a</sup></u>				<u>Control (MG-APLV-134)<sup>a</sup></u>			
	<u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>							
	<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
Average		2.26		1.90		2.52		1.91
% Diff.			17.3				27.5	

<sup>a</sup> Split sampling at NCRPS Sites MG-APLV-120 (MNS Site 120) located at the McGuire Site boundary approximately 0.7 mi. NNE of the plant, and MG-APLV-134 (MNS Site 134) located at East Lincoln Junior High School approximately 8.7 mi. WNW of the plant.

<sup>b</sup> Additional samples collected at location MG-APLV-102 (MNS Site 102) on dates of 4/21/08 & 4/28/08 with results of  $2.39 \pm 0.10 \times 10^{-2}$  pCi/m<sup>3</sup> and  $1.67 \pm 0.08 \times 10^{-2}$  pCi/m<sup>3</sup>, respectively.

<sup>c</sup> Control location MG-APLV-134 discontinued after 5/5/08 and sampling at a new control location, MG-APLV-102 started. MG-APLV-102, located 9.89 mi WNW of the plant, replaces the old control location.

<sup>d</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

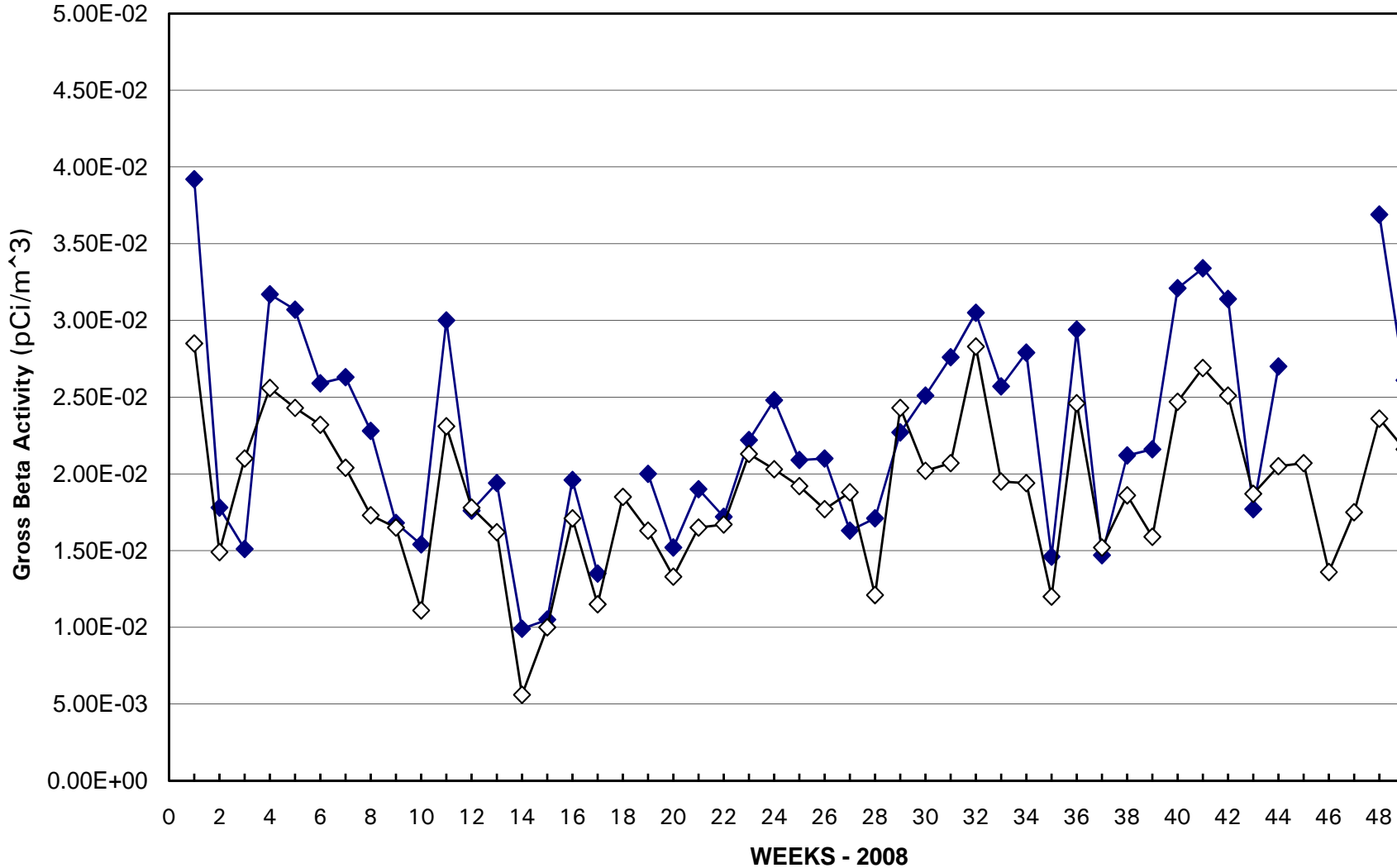
<sup>e</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>f</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>g</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

# MCGUIRE AIR PARTICULATE

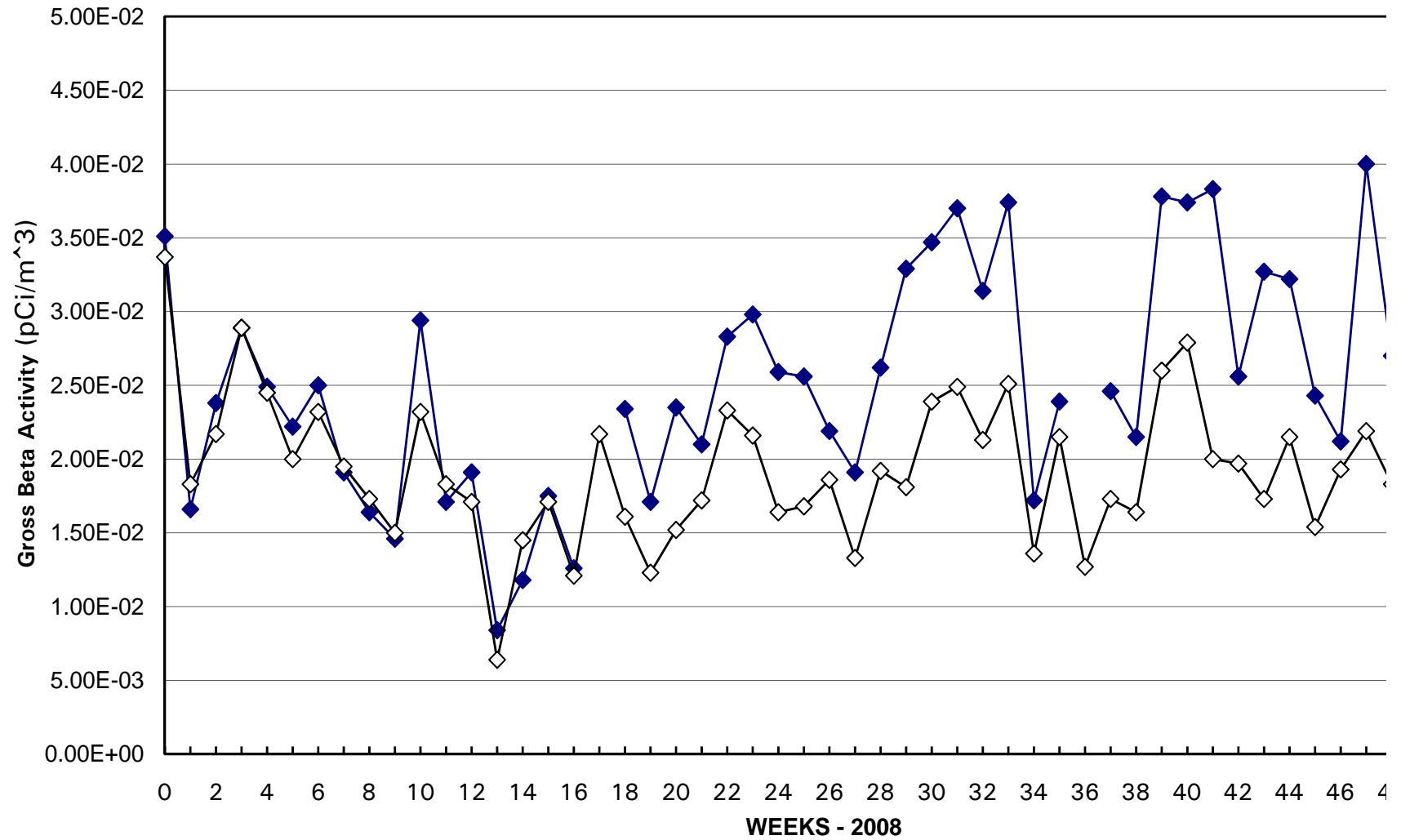
## INDICATOR SITE





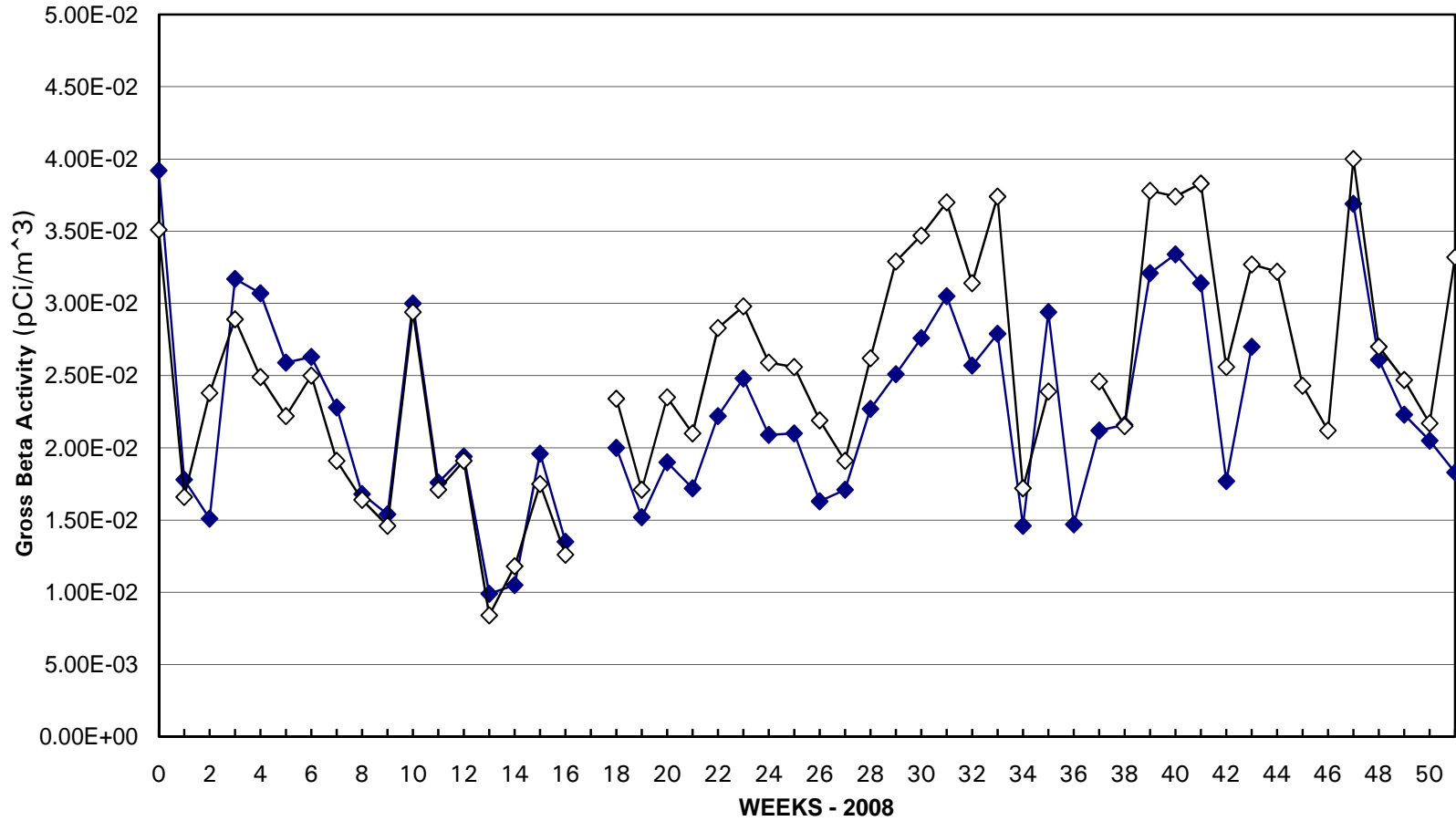
# MCGUIRE AIR PARTICULATE

## CONTROL SITE



# MCGUIRE AIR PARTICULATE

INDICATOR VS. CONTROL, NCRPS



—◆— INDICATOR(MG-APLV-120) —◇— CONTROL(MG-APLV-134)

Air Particulate - Gross Beta, (pCi/m<sup>3</sup>)

Date	<u>MG-APLV-119<sup>a</sup></u>		<u>MG-APLV-125</u>				<u>MG-APLV-133</u>			
	<u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>		<u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>				<u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>			
	<u>RPS</u>		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/7/08	4.95	0.23	2.94	0.12	2.67	2.59	3.33	0.14	3.04	0.17
1/14/08	1.47	0.07	1.51	0.07	1.56	1.52	3.29	0.14	1.40	0.12
1/21/08	2.35	0.10	2.11	0.09	2.21	2.21	2.95	0.12	1.91	0.14
1/28/08	3.35	0.14	2.67	0.11	3.02	3.03	4.68	0.19	2.65	0.16
2/4/08	2.44	0.10	2.39	0.10	2.10	2.06	2.09	0.09	2.17	1.51
2/11/08	2.58	0.11	2.55	0.12	2.16	2.09	3.16	0.14	2.06	0.14
2/18/08	2.10	0.09	2.07	0.09	2.09	2.12	2.80	0.12	2.06	0.15
2/25/08 <sup>b</sup>			2.10	0.09	1.81	1.78	2.99	0.12	2.03	0.15
3/3/08	2.11	0.09	1.57	0.07	1.67	1.66	1.86	0.09	1.33	0.12
3/10/08	1.44	0.08	1.30	0.06	1.29	1.29	2.26	0.11	1.47	0.13
3/17/08	2.79	0.12	2.31	0.09	2.00	1.97	2.95	0.12	2.41	0.16
3/24/08	1.83	0.09	1.57	0.07	1.71	1.71	2.51	0.11	1.78	0.13
3/31/08	2.06	0.11	1.52	0.07	1.65	1.59	2.00	0.10	1.52	0.13
4/7/08	0.93	0.05	0.77	0.04	0.70	0.72	1.11	0.07	0.54	0.11
4/14/08	1.10	0.08	0.93	0.05	0.99	0.12	1.47	0.08	1.01	0.12
4/21/08	1.71	0.08	1.65	0.07	1.82	0.14	2.27	0.11	1.67	0.14
4/28/08 <sup>c</sup>	1.40	0.07	1.28	0.06	1.19	0.12			1.04	0.12
5/5/08 <sup>d</sup>	2.22	0.09			2.00	0.14	2.84	0.11	2.11	0.14
5/12/08	1.47	0.07	1.40	0.06	1.74	0.14	1.88	0.10	1.89	0.15
5/19/08	1.40	0.07	1.09	0.05	1.07	0.12	1.68	0.08	1.34	0.13
5/27/08	1.59	0.08	1.59	0.07	1.83	0.13	2.14	0.09	1.70	0.13
6/2/08	1.63	0.08	1.46	0.07	1.55	0.15	2.39	0.12	1.60	0.15
6/9/08	2.07	0.09	1.95	0.08	2.07	0.15	2.71	0.11	1.91	0.15
6/16/08	2.17	0.10	1.96	0.08	1.99	0.15	3.01	0.13	2.11	0.15
6/23/08	2.05	0.10	1.65	0.07	1.61	0.13	2.77	0.12	1.54	0.13
6/30/08	1.99	0.10	1.81	0.08	2.17	0.15	2.54	0.11	1.75	0.14
7/7/08	1.49	0.07	1.36	0.06	1.46	0.12	2.02	0.09	1.49	0.13
7/14/08	1.60	0.08	1.56	0.07	1.60	0.14	2.35	0.11	1.20	0.12
7/21/08	2.16	0.09	1.97	0.08	2.27	0.15	2.93	0.12	1.92	0.15
7/28/08	2.70	0.12	3.37	0.04	2.00	0.15	3.61	0.15	2.13	0.15
8/4/08	2.53	0.11	2.13	0.09	1.95	0.15	3.54	0.14	2.07	0.15
8/11/08 <sup>e</sup>			2.70	0.11	2.71	0.16			2.18	0.15
8/18/08	1.91	0.09	2.21	0.09	1.78	0.15	3.16	0.12	1.79	0.15
8/25/08	2.69	0.12	2.35	0.10	2.52	0.16	3.34	0.14	2.65	0.16
9/2/08	1.39	0.06	1.30	0.06	1.36	0.12	2.67	0.10	1.23	0.12
9/8/08 <sup>f</sup>			2.39	0.10	2.52	0.17			2.51	0.17
9/15/08			1.19	0.06	1.40	0.12			1.49	0.13
9/22/08 <sup>g</sup>			1.89	0.08	1.89	0.14			2.06	0.14
9/29/08	2.09	0.08	1.70	0.07	1.55	0.14	2.78	0.11	1.86	0.15
10/6/08	2.20	0.09	2.59	0.10	2.73	0.16	4.55	0.18	2.89	0.16
10/13/08 <sup>h</sup>			2.80	0.11	2.58	0.16			3.10	0.17
10/20/08	2.85	0.11	2.62	0.10	2.51	0.16	3.63	0.13	2.56	0.16
10/27/08	1.58	0.08	1.84	0.08	1.59	0.13	2.29	0.11	2.23	0.15
11/3/08	2.65	0.11	2.34	0.10	1.92	0.14	3.66	0.14	2.53	0.16
11/10/08	2.40	0.10	2.38	0.10	1.92	0.15	3.33	0.14	2.39	0.16
11/17/08 <sup>i</sup>			1.56	0.07	1.44	0.14			1.73	0.14
11/24/08	2.85	0.11	1.72	0.08	1.55	0.14	2.16	0.88	1.50	0.14
12/1/08	3.05	0.13	2.73	0.11	2.51	0.16	4.52	0.18	2.53	0.16
12/8/08 <sup>j</sup>			2.16	0.09	2.08	0.15			2.45	0.16
12/15/08 <sup>k</sup>			1.77	0.08	1.58	0.14			1.63	0.14
12/22/08	2.07	0.08	1.94	0.08	1.83	0.14	2.34	0.09	1.30	0.13
12/29/08	2.44	0.10	2.19	0.09	2.08	0.15	3.17	0.12	2.36	0.15

**Air Particulate - Gross Beta, (pCi/m<sup>3</sup>)**

<u>Date</u>	<u>MG-APLV-119<sup>a</sup></u> <u>All measurements x</u> <u>10<sup>-2</sup> pCi/m<sup>3</sup></u>		<u>MG-APLV-125</u> <u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>				<u>MG-APLV-133</u> <u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>			
	<u>RPS</u>		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
Average	2.13		1.93		1.88		2.78		1.91	
% Diff.				2.81				36.9		

<sup>a</sup> Split sampling at NCRPS Sites MG-APLV-119 (MNS Site 119) located at Duke Power's Huntersville Substation approximately 6.2 mi. ESE of the plant, MG-APLV-125 (MNS Site 125) located near the site boundary 0.4 mi. SW of the plant, MG-APLV-133 (MNS Site 133) located at Duke Power's Cornelius Substation approximately 6.2 mi. NE of the plant.

<sup>b</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>c</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>d</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>e</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>f</sup> Samples not received for weeks of 9/12/08, 9/16/08 for locations MG-APLV-119 & MG-APLV-133.

<sup>g</sup> Samplers ran continuously from 9/16/08 – 9/29/08 for locations MG-APLV-119 & MG-APLV-133..

<sup>h</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

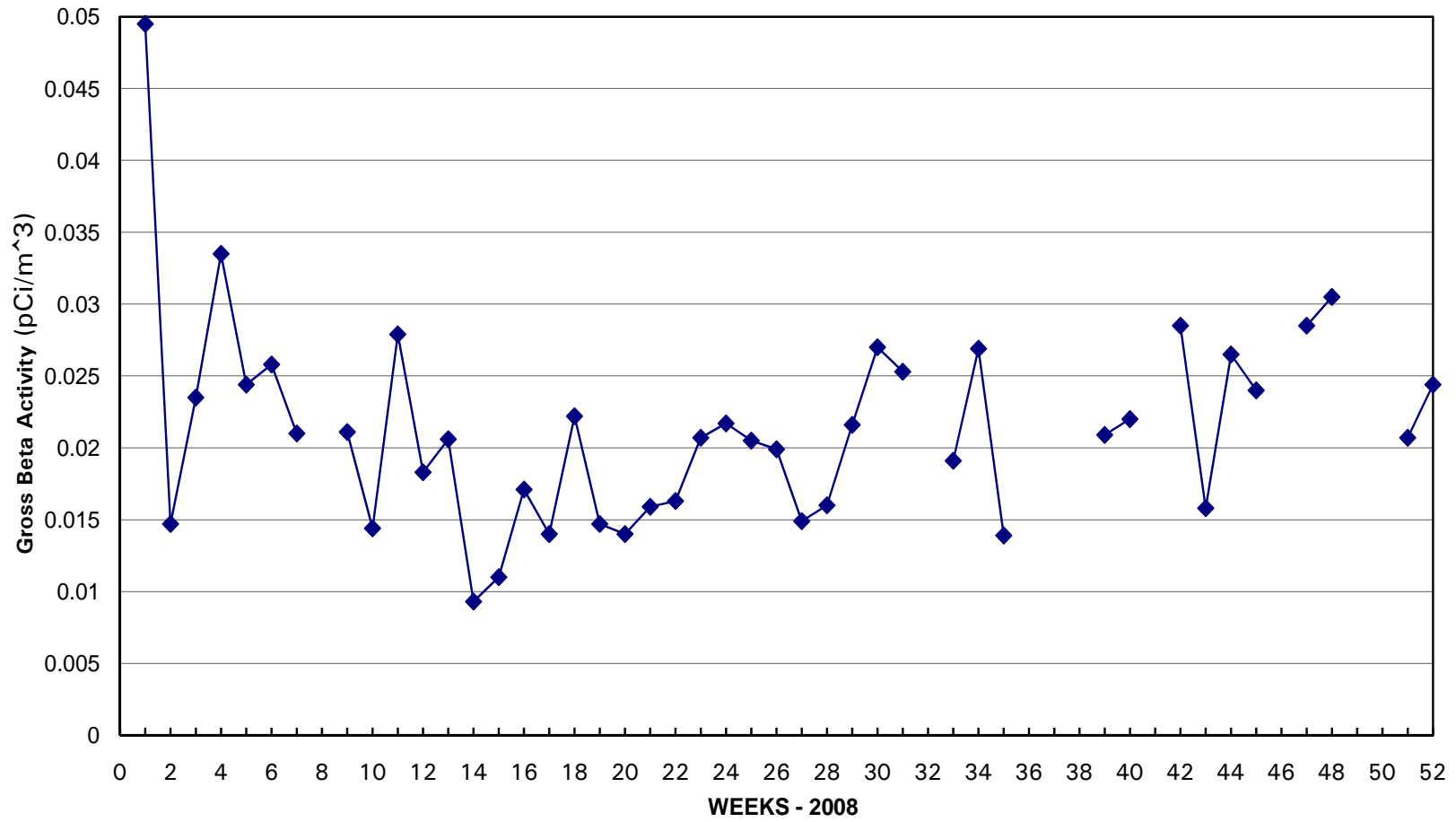
<sup>i</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>j</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

<sup>k</sup> Sample analysis result not available from State Radiochemistry Laboratory database.

# MCGUIRE AIR PARTICULATE

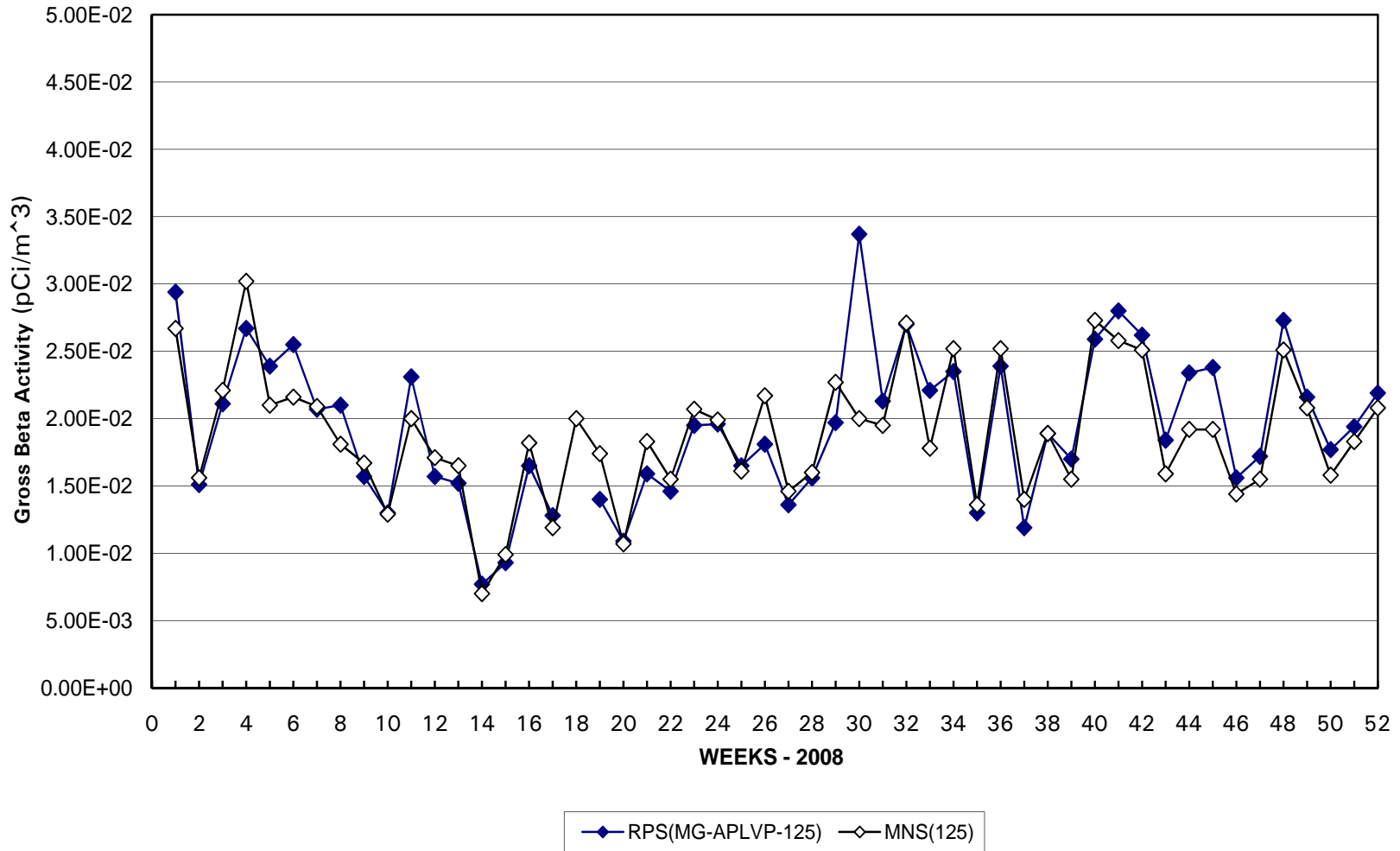
## HUNTERSVILLE SITE



—◆— RPS(MG-APLV-119)

# MCGUIRE AIR PARTICULATE

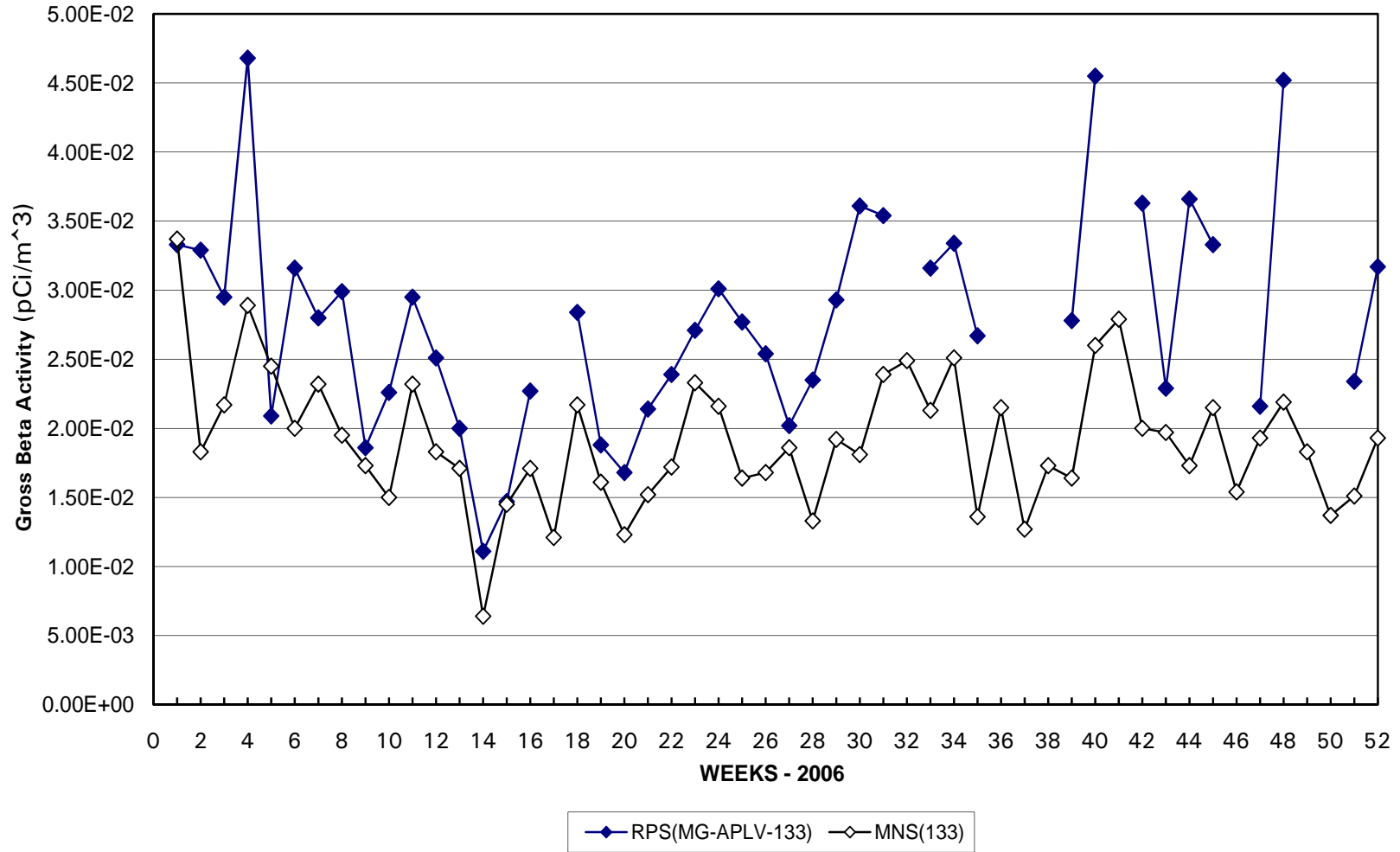
## SETTLING POND SITE





# MCGUIRE AIR PARTICULATE

CORNELIUS SITE



**Air Particulate - Radioiodine, (pCi/m<sup>3</sup>)**

Date	Indicator (MG-APCC-120) <sup>a</sup>				Control (MG-APCC-134) <sup>a</sup>			
	All measurements x 10 <sup>-2</sup> pCi/m <sup>3</sup>							
	RPS		MNS		RPS		MNS	
	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
1/7/08 <sup>b</sup>			< 1.23				< 1.37	
1/14/08			< 1.51				< 1.10	
1/21/08			< 1.09				< 0.79	
1/28/08			< 1.70				< 0.92	
2/4/08			< 0.74				< 0.95	
2/11/08			< 1.03				< 1.11	
2/18/08			< 1.25				< 0.97	
2/25/08			< 0.69				< 1.24	
3/3/08			< 0.89				< 1.21	
3/10/08			< 1.41				< 0.82	
3/17/08			< 0.88				< 1.40	
3/24/08			< 1.52				< 1.22	
3/31/08			< 1.40				< 1.34	
4/7/08			< 1.64				< 1.61	
4/14/08			< 1.34				< 1.34	
4/21/08			< 0.99				< 0.96	
4/28/08			< 0.60				< 0.73	
5/5/08 <sup>c</sup>			< 1.80				< 1.30	
5/12/08			< 0.69				< 0.83	
5/19/08			< 0.81				< 0.74	
5/27/08			< 0.51				< 1.27	
6/2/08			< 1.03				< 0.95	
6/9/08			< 1.05				< 0.93	
6/16/08			< 0.63				< 0.82	
6/23/08			< 0.69				< 1.23	
6/30/08			< 1.08				< 1.24	
7/7/08			< 1.01				< 1.68	
7/14/08			< 0.81				< 0.84	
7/21/08			< 0.59				< 0.75	
7/28/08			< 1.08				< 1.12	
8/4/08			< 0.64				< 0.90	
8/11/08			< 0.80				< 0.96	
8/18/08			< 1.15				< 1.30	
8/25/08			< 0.96				< 1.01	
9/2/08			< 0.77				< 0.66	
9/8/08			< 1.16				< 1.01	
9/15/08			< 1.43				< 1.90	
9/22/08			< 1.18				< 0.95	
9/29/08			< 1.32				< 0.78	
10/6/08			< 1.00				< 0.89	
10/13/08			< 0.86				< 1.20	
10/20/08			< 1.22				< 1.47	
10/27/08			< 0.77				< 1.29	
11/3/08			< 1.00				< 0.86	
11/10/08			< 0.82				< 1.13	
11/17/08			< 1.86				< 1.62	
11/24/08			< 0.87				< 0.74	
12/1/08			< 0.90				< 0.97	
12/8/08			< 0.68				< 1.95	
12/15/08			< 1.31				< 1.34	
12/22/08			< 0.85				< 0.91	
12/29/08			< 0.88				< 0.89	

**Air Particulate - Radioiodine, (pCi/m<sup>3</sup>)**

<u>Date</u>	<u>Indicator (MG-APCC-120)<sup>a</sup></u>				<u>Control (MG-APCC-134)<sup>a</sup></u>			
	<u>All measurements x 10<sup>-2</sup> pCi/m<sup>3</sup></u>							
	<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
Average	NA		NA		NA		NA	
% Diff.		NA				NA		

<sup>a</sup> Split sampling at NCRPS Sites MG-APCC-120 (MNS Site 120) located at the McGuire Site boundary approximately 0.7 mi. NNE of the plant, and MG-APCC-134 (MNS Site 134) located at East Lincoln Junior High School approximately 8.7 mi. WNW of the plant. Control location MG-APLV-134 discontinued after 5/5/08 and sampling at a new control location, MG-APLV-102 started. MG-APLV-102, located 9.89 mi WNW of the plant, replaces the old control location.

<sup>b</sup> Unless otherwise noted, blank space for Radiation Protection results indicates that a gamma isotopic analysis was performed, but no radioiodine radionuclides were detected, and an MDA was not reported in the State Radiochemistry Laboratory database.

<sup>c</sup> Control location MG-APLV-134 discontinued after 5/5/08 and sampling at a new control location, MG-APLV-102 started. MG-APLV-102, located 9.89 mi WNW, replaces the old control location.

**Air Particulate - Gamma, (pCi/m<sup>3</sup>)**

<u>Date</u>	<u>Isotope</u>	<u>Indicator (MG-APLV-120)<sup>a</sup></u>				<u>Control (MG-APLV-134)</u>			
		<u>All measurements in pCi/m<sup>3</sup></u>				<u>All measurements in pCi/m<sup>3</sup></u>			
		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/7/08 <sup>b</sup>	Be-7			8.03E-02	2.97E-02			9.00E-02	4.73E-02
1/14/08	Be-7							1.97E-01	5.88E-02
	K-40							4.19E-02	1.16E-01
1/21/08	Be-7			1.37E-01	6.29E-02			1.62E-01	3.96E-02
1/28/08	Be-7			2.12E-01	3.52E-02			2.21E-01	3.95E-02
2/4/08	Be-7			2.27E-01	3.80E-02			1.97E-01	3.76E-02
	K-40			1.41E-01	5.58E-02			1.21E-01	5.99E-02
2/11/08	Be-7			1.17E-01	3.64E-02			2.12E-01	3.10E-02
	K-40			3.98E-01	7.41E-02			1.16E-01	5.65E-02
2/18/08	Be-7			2.51E-01	4.65E-02			1.90E-01	4.79E-02
	K-40			1.25E-01	5.44E-02				
2/25/08	Be-7			1.11E-01	5.05E-02			1.41E-01	4.66E-02
3/3/08	Be-7			9.07E-02	3.10E-02			1.27E-01	4.81E-02
	K-40							2.51E-01	6.19E-02
3/10/08	Be-7			7.59E-02	3.28E-02			1.72E-01	3.98E-02
3/17/08	Be-7			1.62E-01	3.17E-02			2.66E-01	5.07E-02
	K-40			2.55E-01	6.20E-02				
3/24/08	Be-7			1.77E-01	3.92E-02			1.87E-01	3.76E-02
3/31/08	Be-7			1.88E-01	3.70E-02			1.37E-01	4.70E-02
4/7/08	Be-7			4.98E-02	2.17E-02			2.47E-01	5.26E-02
4/14/08	Be-7			1.35E-01	4.01E-02			6.29E-02	3.63E-02
4/21/08	Be-7			2.09E-01	3.15E-02			2.46E-01	4.26E-02
	K-40			1.89E-01	6.08E-02				
4/28/08	Be-7			1.58E-01	3.05E-02			9.76E-02	4.22E-02
5/5/08 <sup>c</sup>	Be-7			2.25E-01	3.84E-02			2.27E-01	5.29E-02
	K-40			2.18E-01	4.88E-02			4.49E-01	7.59E-02
5/12/08	Be-7			2.07E-01	3.51E-02			2.00E-01	3.59E-02
5/19/08	Be-7			1.74E-01	3.35E-02			2.61E-01	3.86E-02
	K-40							3.02E-01	7.86E-02
5/27/08	Be-7			1.99E-01	3.10E-01			1.24E-01	4.69E-02
	K-40			1.07E-01	3.80E-02				
6/2/08	Be-7			2.21E-01	4.55E-02			1.47E-01	2.83E-02
	K-40			3.47E-01	8.42E-02			3.83E-01	4.87E-02
6/9/08	Be-7			1.45E-01	3.21E-02			2.00E-01	6.14E-02
6/16/08	Be-7			1.39E-01	3.95E-02			1.85E-01	5.75E-02
6/23/08	Be-7			1.79E-01	3.97E-02			2.06E-01	9.73E-02
6/30/08	Be-7			1.15E-01	3.92E-02			1.32E-01	3.18E-02
	K-40							1.98E-01	5.49E-02
7/7/08	Be-7			1.69E-01	3.14E-02			2.09E-01	3.78E-02
7/14/08	Be-7			7.66E-02	3.76E-02			9.84E-02	3.31E-02
	K-40			2.20E-01	4.91E-02			2.97E-01	5.61E-02
7/21/08	Be-7			2.13E-01	3.51E-02			2.46E-01	3.69E-02
	K-40			2.29E-01	4.88E-02			3.15E-01	6.91E-02
7/28/08	Be-7			2.35E-01	3.35E-02			1.71E-01	3.40E-02
	K-40			1.96E-01	4.62E-02			2.74E-01	6.90E-02
8/4/08	Be-7			1.03E-01	4.81E-02			1.56E-01	4.36E-02
	K-40							3.93E-01	7.67E-02
8/11/08	Be-7			2.61E-01	3.51E-02			1.77E-01	4.64E-02
	K-40			1.88E-01	5.90E-02			2.40E-01	7.00E-02
8/18/08	Be-7			1.47E-01	3.08E-02			1.31E-01	5.48E-02
	K-40			1.28E-01	5.53E-02				
8/25/08	Be-7			1.81E-01	3.39E-02			1.47E-01	3.50E-02
	K-40			2.78E-01	6.51E-02			3.07E-01	7.23E-02
9/2/08	Be-7			1.01E-01	2.00E-02			4.66E-02	2.62E-02

Air Particulate - Gamma, (pCi/m<sup>3</sup>)

Date	Isotope	<u>Indicator (MG-APLV-120)<sup>a</sup></u>				<u>Control (MG-APLV-134)</u>			
		<u>All measurements in pCi/m<sup>3</sup></u>				<u>All measurements in pCi/m<sup>3</sup></u>			
		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
9/8/08	K-40			2.63E-01	5.92E-02			3.67E-01	6.73E-02
9/15/08	Be-7			1.44E-01	3.69E-02				
9/22/08	K-40							2.69E-01	5.38E-02
9/29/08	Be-7			6.61E-02	3.70E-02				
	K-40							2.82E-01	6.40E-02
	Be-7			1.39E-01	3.38E-02			1.38E-01	3.70E-02
	K-40							3.28E-01	5.99E-02
10/6/08	Be-7			1.32E-01	3.58E-02			1.04E-01	4.23E-02
	K-40			2.26E-01	6.54E-02			4.22E-01	6.67E-02
10/13/08	Be-7			1.73E-01	2.87E-02			1.08E-01	4.67E-02
10/20/08	Be-7			1.30E-01	3.52E-02			1.17E-01	3.15E-02
	K-40							2.47E-01	7.38E-02
10/27/08	Be-7			1.40E-01	3.40E-02			1.08E-01	4.50E-02
11/3/08	Be-7			1.20E-01	4.56E-02			1.83E-01	3.61E-02
	K-40							3.88E-01	7.11E-02
11/10/08	Be-7			9.68E-02	4.21E-02			1.35E-01	4.56E-02
	K-40							2.48E-01	7.00E-02
11/17/08	Be-7			9.34E-02	3.10E-02				
11/24/08	Be-7			7.84E-02	4.68E-02			1.05E-01	3.49E-02
	K-40			2.06E-01	6.42E-02			2.28E-01	6.32E-02
12/1/08	Be-7			2.19E-01	3.32E-02			9.61E-01	3.24E-02
	K-40			2.11E-01	6.97E-02			2.03E-01	5.94E-02
12/8/08	Be-7			7.47E-02	2.72E-02			8.56E-02	3.77E-02
	K-40							1.34E-01	5.94E-02
12/15/08	Be-7			1.39E-01	3.32E-02			6.07E-02	2.82E-02
	K-40							2.56E-01	6.60E-02
12/22/08	Be-7			8.63E-02	3.11E-02			1.20E-01	3.62E-02
	K-40			1.39E-01	5.18E-02			1.12E-01	4.87E-02
12/29/08	Be-7			1.48E-01	4.31E-02			9.55E-02	2.88E-02
	K-40			2.32E-01	4.95E-02				

<sup>a</sup> Split sampling at NCRPS Sites MG-APLV-120 (MNS Site 120) located at the McGuire Site boundary approximately 0.7 mi. NNE of the plant, and MG-APLV-134 (MNS Site 134) located at East Lincoln Junior High School approximately 8.7 mi. WNW of the plant.

<sup>b</sup> Composite gamma analyses of air particulate samples by Radiation Protection not performed in 2008 due to detector malfunctions at State Radiochemistry Laboratory: Two high purity germanium detectors were malfunctioned and could not be repaired due to budgetary concerns. Composite gamma analyses of air particulate samples on a monthly basis is due to resume in 2009.

<sup>c</sup> Control location MG-APLV-134 discontinued after 5/5/08 and sampling at a new control location, MG-APLV-102 started. MG-APLV-102, located 9.89 mi WNW, replaces the old control location.

**Air Particulate - Gamma, (pCi/m<sup>3</sup>)**

<u>Date</u>	<u>Isotope</u>	<u>MG-APLV-119<sup>a</sup></u> <u>All measurements in</u> <u>pCi/m<sup>3</sup></u>	
		<u>RPS</u>	
		<u>Meas.</u>	<u>Error</u>
January <sup>b</sup>			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

**Air Particulate - Gamma, (pCi/m<sup>3</sup>)**

<u>Date</u>	<u>Isotope</u>	<u>Indicator (MG-APLV-125)<sup>a</sup></u> <u>All measurements in pCi/m<sup>3</sup></u>				<u>Control (MG-APLV-133)<sup>a</sup></u> <u>All measurements in pCi/m<sup>3</sup></u>			
		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/7/08 <sup>b</sup>	Be-7			1.78E-01	2.92E-02			1.35E-01	2.87E-02
1/14/08	Be-7			2.12E-01	4.86E-02			1.89E-01	4.58E-02
1/21/08	Be-7			1.79E-01	4.88E-02			1.24E-01	3.54E-02
1/28/08	Be-7			1.88E-01	4.23E-02			1.16E-01	4.03E-02
2/4/08	Be-7			1.77E-01	3.93E-02			1.55E-01	3.51E-02
	K-40							4.30E-01	7.74E-02
2/11/08	Be-7			1.67E-01	3.60E-02			2.04E-01	3.20E-02
2/18/08	Be-7			1.99E-01	4.81E-02			1.68E-01	3.64E-02
2/25/08	Be-7			1.35E-01	3.99E-02			1.19E-01	3.78E-02
	K-40							2.95E-01	5.58E-02
3/3/08	Be-7			1.80E-01	3.81E-02				
	K-40			1.57E-01	5.76E-02				
3/10/08	Be-7			1.24E-01	2.49E-02			1.81E-01	2.90E-02
3/17/08	Be-7			1.41E-01	3.19E-02			1.92E-01	3.44E-02
3/24/08	Be-7			1.29E-01	3.50E-02			1.08E-01	2.96E-02
	K-40							2.40E-01	5.24E-02
3/31/08	Be-7			1.28E-01	2.91E-02			1.12E-01	2.72E-02
4/7/08	Be-7			5.48E-02	3.18E-02				
4/14/08	Be-7			1.68E-01	2.53E-02			1.10E-01	2.89E-02
	K-40							1.81E-01	4.53E-02
4/21/08	Be-7			1.28E-01	3.62E-02			1.73E-01	3.98E-02
4/28/08	Be-7			9.61E-02	3.59E-02			1.47E-01	3.42E-02
5/5/08	Be-7			9.81E-02	3.58E-02			1.74E-01	3.54E-02
	K-40							1.92E-01	4.51E-02
5/12/08	Be-7			1.96E-01	4.48E-02			1.72E-01	3.43E-02
5/19/08	Be-7			1.28E-01	3.28E-02			1.55E-01	4.44E-02
5/27/08	Be-7			1.93E-01	3.61E-02			2.06E-01	3.14E-02
	K-40							2.08E-01	5.77E-02
6/2/08	Be-7			1.32E-01	4.26E-02			1.74E-01	4.16E-02
6/9/08	Be-7			1.31E-01	3.57E-02			2.09E-01	4.97E-02
6/16/08	Be-7			1.65E-01	3.85E-02			2.11E-01	4.19E-02
6/23/08	Be-7			1.49E-01	2.96E-02			1.89E-01	3.90E-02



Air Particulate - Gamma, (pCi/m<sup>3</sup>)

Date	Isotope	<u>Indicator (MG-APLV-125)<sup>a</sup></u>				<u>Control (MG-APLV-133)<sup>a</sup></u>			
		<u>All measurements in pCi/m<sup>3</sup></u>				<u>All measurements in pCi/m<sup>3</sup></u>			
		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
6/30/08	Be-7			1.93E-01	4.42E-02			2.47E-01	5.26E-02
7/7/08	Be-7			1.81E-01	4.00E-02			1.38E-01	3.71E-02
7/14/08	Be-7			9.56E-02	2.56E-02			8.05E-02	2.97E-02
7/21/08	Be-7			2.08E-01	3.77E-02			1.74E-01	4.01E-02
7/28/08	Be-7			2.16E-01	4.38E-02			1.37E-01	3.91E-02
8/4/08	Be-7			1.52E-01	4.90E-02			1.40E-01	4.71E-02
8/11/08	Be-7			2.78E-01	4.37E-02			1.61E-01	3.85E-02
8/18/08	Be-7			1.45E-01	6.54E-02			1.71E-01	4.05E-02
8/25/08	Be-7			2.38E-01	3.76E-02			2.23E-01	4.49E-02
9/2/08	Be-7			1.09E-01	3.83E-02			3.85E-02	2.49E-02
	K-40			7.90E-02	2.79E-02				
9/8/08	Be-7							1.37E-01	4.32E-02
9/15/08	Be-7			1.00E-01	3.05E-02			1.24E-01	2.70E-02
9/22/08	Be-7			1.60E-01	2.79E-02			1.12E-01	4.14E-02
9/29/08	Be-7			9.97E-02	2.32E-02			1.59E-01	7.08E-02
10/6/08	Be-7							1.29E-01	3.40E-02
10/13/08	Be-7			1.23E-01	3.57E-02			2.13E-01	3.84E-02
	K-40			2.30E-01	6.65E-02				
10/20/08	Be-7			1.63E-01	3.77E-02			1.17E-01	4.53E-02
10/27/08	Be-7							1.06E-01	2.57E-02
	K-40							3.84E-01	6.41E-02
11/3/08	Be-7			1.96E-01	3.40E-02				
11/10/08	Be-7			2.16E-01	6.86E-02			2.00E-01	4.30E-02
11/17/08	Be-7			1.13E-01	3.73E-02			1.11E-01	3.01E-02
11/24/08	Be-7			1.58E-01	4.92E-02			8.52E-02	3.72E-02
	K-40			4.22E-01	1.17E-01				
12/1/08	Be-7			1.54E-01	6.05E-02			1.89E-01	3.76E-02
	K-40			5.58E-01	1.68E-01				
12/8/08	Be-7			1.78E-01	3.62E-02			1.16E-01	4.35E-02
	K-40			2.39E-01	5.21E-02				
12/15/08	Be-7			1.15E-01	3.76E-02			8.72E-02	2.75E-02
	K-40			3.13E-01	7.19E-02				
12/22/08	Be-7							6.56E-02	2.88E-02
12/29/08	Be-7			1.08E-01	3.70E-02			2.09E-01	4.47E-02

<sup>a</sup> Split sampling at NCRPS Sites MG-APLV-119 (MNS Site 119) located at Duke Power's Huntersville Substation approximately 6.2 mi. ESE of the plant, MG-APLV-125 (MNS Site 125) located near the site boundary 0.4 mi. SW of the plant, MG-APLV-133 (MNS Site 133) located at Duke Power's Cornelius Substation approximately 6.2 mi. NE of the plant.

<sup>b</sup> Composite gamma analyses of air particulate samples by Radiation Protection not performed in 2008 due to detector malfunctions at State Radiochemistry Laboratory: Two high purity germanium detectors were malfunctioned and could not be repaired due to budgetary concerns. Composite gamma analyses of air particulate samples on a monthly basis is due to resume in 2009.

**Surface Water - Low-Level Iodine and Gamma**

Date	Isotope	<u>Indicator (MG-SW-128)<sup>a</sup></u>				<u>Control (MG-SW-135)<sup>b</sup></u>			
		<u>All measurements in pCi/l</u>				<u>All measurements in pCi/l</u>			
		<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/14/08 <sup>c</sup>	K-40 LLI	2.60E+02	3.21E+01			4.00E+01	8.10E+00	6.72E+01	2.38E+01
2/11/08	K-40 LLI	1.69E+02	2.33E+01	8.70E+01	2.42E+01	5.26E+01	8.14E+00	2.40E+02	1.62E+01
3/10/08	K-40 LLI	3.25E+02	3.39E+01	1.98E+02	2.98E+01	4.41E+01	7.09E+00	1.13E+02	2.58E+01
4/7/08	K-40 LLI	1.75E+02	2.70E+01			4.39E+01	7.47E+00		
5/5/08	K-40 LLI	3.91E+02	3.72E+01	2.00E+02	3.16E+01	5.49E+01	7.99E+00		
6/2/08	K-40 LLI	2.99E+02 5.50E-01	3.70E+01 5.00E-01			5.73E+01	7.80E+00		
6/30/08	K-40 LLI	3.26E+02 1.19E+00	3.10E+01 2.70E-01			5.45E+01	7.70E+00		
7/28/08	K-40 LLI	1.56E+02 1.23E+00	2.40E+01 1.35E+00	8.32E+01	2.87E+01	1.11E+02	1.50E+01	1.34E+02	3.26E+01
8/25/08	K-40 Cs-137 LLI	3.28E+02 3.48E+00 0.00E+00	3.20E+01 1.70E+00 2.60E-01	1.45E+02	2.70E+01	4.99E+01	7.40E+00		
9/22/08	Be-7 K-40 LLI			3.54E+01	1.43E+01			1.22E+02	2.77E+01
10/20/08	K-40 LLI	2.88E+02 3.06E+00	3.50E+01 8.60E-01	1.59E+02	3.47E+01			1.31E+02	2.28E+01
11/17/08	K-40 LLI	2.00E+02 5.50E-01	2.60E+01 2.80E-01					1.15E+02	4.51E+01
12/15/08	K-40 LLI	0.00E+00 8.60E-01	8.00E-01 3.17E+00	2.07E+02	2.82E+01			2.13E+02	3.28E+01

<sup>a</sup> Split sampling at NCRPS Site MG-SW-128 (MNS Site 128) located at the discharge canal bridge approximately 0.4 mi. ENE of the plant.

<sup>b</sup> Split sampling at NCRPS Site MG-SW-135 (MNS Site 135) located at the Marshall Plant intake canal approximately 12 mi. N of the plant.

<sup>c</sup> Unless otherwise noted, blank space for Radiation Protection results indicates that analysis was performed but that an MDA was not recorded in the State Radiochemistry Laboratory database.

**Surface Water - Tritium**

<u>Date</u>	<u>Indicator (MG-SW-128)<sup>a</sup></u>				<u>Control (MG-SW-135)<sup>b</sup></u>			
	<u>All measurements in pCi/l</u>							
	<u>RPS</u>		<u>MNS</u>		<u>RPS</u>		<u>MNS</u>	
	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/14/08 <sup>c</sup>								
2/11/08 <sup>c</sup>								
3/10/08	1.92E+03	2.09E+02			3.85E+02	1.90E+02		
1 <sup>st</sup> Quarter			1.58E+03	7.00E+01			2.84E+02	5.15E+01
4/7/08 <sup>c</sup>								
5/5/08 <sup>c</sup>								
6/2/08	1.74E+03	2.31E+02			4.28E+02	2.11E+02		
6/30/08	1.78E+03	2.35E+02			4.38E+02	2.16E+02		
2 <sup>nd</sup> Quarter			1.61E+03	7.53E+01			< 8.39E+01	
7/28/08 <sup>d</sup>					8.48E+02	2.15E+02		
8/25/08	1.87E+03	2.04E+02			6.59E+02	1.67E+02		
9/22/08	2.53E+03	2.05E+02			3.61E+02	1.78E+02		
3 <sup>rd</sup> Quarter			1.49E+03	6.93E+01			3.42E+02	6.02E+01
10/20/08	2.85E+03	1.86E+02			3.20E+02	1.58E+02		
11/17/08	1.25E+03	1.66E+02			6.38E+02	1.61E+02		
12/15/08	2.22E+03	1.80E+02			6.41E+02	1.62E+02		
4 <sup>th</sup> Quarter			1.98E+03	7.32E+01			< 1.21E+02	
Average	2.02E+03		1.56E+03		5.24E+02		3.13E+02	
% Diff.			25.7%				50.5%	

<sup>a</sup> Split sampling at NCRPS Site MG-SW-128 (MNS Site 128) located at the discharge canal bridge approximately 0.4 mi. ENE of the plant.  
<sup>b</sup> Split sampling at NCRPS Site MG-SW-135 (MNS Site 135) located at the Marshall Plant intake canal approximately 12 mi. N of the plant.  
<sup>c</sup> Tritium analysis data not available from State Radiochemistry database for samples collected on 1/14/08, 2/11/08, 4/7/08, 5/5/08.  
<sup>d</sup> Tritium analysis not performed by State Radiochemistry laboratory for sample collected on 7/28/08.

## Milk - Gamma and Low Level Iodine

<u>Date</u>	<u>Isotope</u>	<u>Indicator (MG-MS-139)<sup>a</sup></u>			
		<u>All measurements in pCi/l</u>			
		<u>RPS</u>		<u>MNS</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/7/08	K-40	1.44E+03	4.15E+01	1.48E+03	1.10E+02
	LLI			< 6.53E-01	
2/4/08 <sup>b</sup>	K-40			1.62E+03	5.77E+01
	LLI			< 7.96E-01	
3/3/08	K-40	1.27E+03	3.79E+01	1.27E+03	1.04E+02
	LLI			< 7.58E-01	
3/31/08	K-40	2.08E+03	6.36E+01	1.65E+03	8.00E+01
	LLI			< 7.93E-01	
4/28/08	K-40	1.26E+03	3.78E+01	1.72E+03	8.01E+01
	LLI			< 6.52E-01	
5/27/08	K-40	1.29E+03	5.00E+01	1.60E+03	8.44E+01
	LLI	1.00E-01	1.30E-01	< 7.02E-01	
6/23/08	K-40	2.32E+03	5.90E+01	1.59E+03	8.42E+01
	LLI	0.00E+00	1.40E-01	< 7.94E-01	
7/21/08 <sup>c</sup>	K-40	1.42E+03	3.30E+01	1.48E+03	1.15E+02
	LLI			< 7.09E-01	
8/18/08	K-40	1.78E+03	4.90E+01	1.49E+03	7.75E+01
	LLI	2.00E-02	2.30E-01	< 7.98E-01	
9/15/08	K-40	1.47E+03	4.60E+01	1.46E+03	1.11E+02
	LLI	3.00E-02	1.20E-01	< 7.89E-01	
10/13/08	K-40	1.27E+03	4.40E+01	1.46E+03	7.38E+01
	LLI	1.70E-01	9.00E-02	< 7.41E-01	
11/10/08 <sup>d</sup>	K-40	1.40E+03	4.70E+01	1.66E+03	8.72E+01
	LLI	1.60E-01	2.60E-01	< 7.02E-01	
12/8/08	K-40	1.48E+03	3.68E+01	1.30E+03	1.09E+02
	Cs-137	5.58E-01	3.27E-01		
	LLI	1.00E-02	8.00E-02	< 7.64E-01	

<sup>a</sup> Duplicate sampling at NCRPS Site MG-MS-139(MNS Site 139) located at the 2.49 miles East of McGuire Nuclear Station. For all results, a blank space for individual isotopes means that the value is less than the LLD.

<sup>b</sup> Sample analysis result not in State Radiochemistry database for sample collected on 2/4/08.

<sup>c</sup> Low Level Iodine result not available from State Radiochemistry Laboratory for milk sample collected for Radiation Protection on 8/6/08. Comment in database: "low level iodine lost in analysis".

<sup>d</sup> Indicator dairy location MG-MS-139 ceased operation effective 10/13/09. Subsequent to 10/13/08, samples collected and analyzed from control location MG-MS-141, located 14.8 miles NNW of McGuire Nuclear Station.

**Fish - Gamma**

<u>Date</u>	<u>Isotope</u>	<u>Indicator (MG-FL-129)<sup>a</sup></u>			
		<u>RPS (pCi/g-wet)</u>		<u>MNS (pCi/kg-wet)</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
4/1/09	K-40	3.18E+00	1.15E-01	3.12E+03	2.34E+02
Bottom Feeder	Cs-137			1.04E+01	5.34E+00
4/1/09	K-40	5.25E+00	1.86E-01	4.09E+03	1.95E+02
Predator	Cs-137	1.46E-02	3.84E-03	2.00E+01	5.61E+00
4/1/09	K-40	4.28E+00	1.70E-01	3.15E+03	1.67E+02
Forager	Cs-137	9.54E-03	3.90E-03	< 1.21E+01	
10/8/08	K-40	2.72E+00	1.30E-01	3.08E+03	1.46E+02
Bottom Feeder	Cs-137			< 6.72E+00	
10/8/08	K-40	3.86E+00	1.50E-01	4.30E+03	1.43E+02
Predator	Cs-137	1.52E-02	3.60E-03	1.52E+01	5.01E+00
10/8/08	K-40	2.57E+00	1.40E-01	3.30E+03	1.18E+02
Forager	Cs-137			3.84E+00	3.03E+00

<sup>a</sup> Split sampling at NCRPS Site MG-FL-129 (MNS Site 129) located near the MNS discharge canal entrance to Lake Norman approximately 0.6 mi ENE of the plant. For all results, a blank space for individual isotopes means that the value is less than the LLD.

**Food Crop - Gamma**

		<b><u>Indicator (MG-FC-188)<sup>a</sup></u></b>			
		<b><u>All measurements in pCi/kg</u></b>			
		<b><u>RPS</u></b>		<b><u>MNS</u></b>	
<b><u>Date</u></b>	<b><u>Isotope</u></b>	<b><u>Meas.</u></b>	<b><u>Error</u></b>	<b><u>Meas.</u></b>	<b><u>Error</u></b>
9/2/08	Be-7	1.40E+02	3.60E+01	2.06E+02	6.14E+01
	K-40	3.70E+03	1.40E+02	3.40E+03	2.59E+02
	I-131			< 1.61E+01	
	Cs-134			< 9.91E+00	
	Cs-137			< 1.93E+01	

<sup>a</sup> Split sampling at NCRPS Site MG-FC-188 (MNS Site 188) at Austin's residence 2.8 mi N of the plant. At a minimum, semi-annual samples are to be collected in the spring and fall.



**Sediment - Gamma**

		<b>Indicator (MG-SD-129)<sup>a</sup></b>			
		<b>All measurements in pCi/kg</b>			
<b><u>Date</u></b>	<b><u>Isotope</u></b>	<b><u>RPS</u></b>		<b><u>MNS</u></b>	
		<b><u>Meas.</u></b>	<b><u>Error</u></b>	<b><u>Meas.</u></b>	<b><u>Error</u></b>
10/13/08	Cs-137			< 2.69E+01	
	K-40	3.89E+03	1.70E+02	6.26E+03	3.59E+02

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<sup>a</sup> Split sampling at NCRPS Site MG-SD-129 (MNS Site 129) located near the MNS discharge canal entrance to Lake Norman approximately 0.6 mi ENE of the plant.

TLD

<u>Loc #</u> <u>Location</u>		<u>All readings in mR/year.</u>							
		<u>1<sup>st</sup> Qtr</u>		<u>2<sup>nd</sup> Qtr</u>		<u>3<sup>rd</sup> Qtr</u>		<u>4<sup>th</sup> Qtr</u>	
		<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>
1	MNS main entrance	47.5	3.0	57.0	16.0	47.9	1.3	69.1	4.9
2	SR 1395, Next to Cowan's Ford Country Club Sign	59.9	1.7	70.0	6.2	62.7	0.6	85.5	4.7
3	Entrance to Luckey Point, SR 1393	59.2	0.8	62.2	1.7	58.6	1.4	81.7	5.1
4	Del Mar Studio, NC 16 & Pilot Knob Rd	50.6	2.1	58.7	1.6	57.4	1.7	71.6	6.8
5	NC 16 in Triangle Community	62.4	1.8	76.3	1.3	68.4	2.4	72.6	4.6
6	Unity Church Rd., SR 1439	52.9	4.3	52.5	4.1	56.9	2.8	73.8	1.9
7	Cowan's Ford Boat Access, SR 1439	46.1	2.0	57.8	1.6	52.7	4.6	72.7	3.9
8	NC 73 & Killian Farm Rd, SR 1396	65.7	0.8	70.6	2.7	63.3	5.5	84.4	3.4
9	Martha's Chapel, SR 1396	50.0	2.6	54.7	5.0	49.3	0.9	66.6	6.1
10	Opposite Ivey Meadow Lane, SR 1396	50.1	3.3	62.1	3.0	56.9	2.6	72.6	5.3
11	SR 1396 & SR 1534	47.0	5.7	61.0	1.4	50.9	1.0	69.4	1.9
12	Killian Farm Rd. (SR 1909), near Johnson Creek	51.2	0.8	59.0	2.9	54.0	4.4	78.1	5.5
13	Castanea Church, NC 16	64.3	4.7	80.7	5.1	72.9	1.8	105.1	6.6
14	Lowesville Nationsbank, NC 16	54.0	2.8	Missing		56.4	2.4	81.4	2.1
15	End of Glover Rd., (private road)	46.5	2.2	59.9	1.6	52.7	2.8	72.4	2.1
16	South Little Egypt Rd., SR 1386	67.6	1.5	Missing		73.9	5.6	96.5	5.3
21	Rankin Elementary School, Mt. Holly	33.9	2.6	75.0	1.4	54.9	3.4	73.0	1.6
22	Chestnut St. & NC 27	42.9	3.6	70.1	2.0	56.8	1.0	88.4	3.6
23	McKoy Rd. (SR 2120) at Natural Gas pipeline	59.2	5.0	46.3	3.4	43.8	4.9	63.2	1.0
24	McKoy & Hambright (SR 2117) Rds.	46.8	1.7	49.8	1.6	42.6	1.2	57.4	2.6
25	Neck (SR 2074) & Beatties Ford (SR 2128) Rds.	45.9	2.4	46.9	2.8	35.6	1.8	56.8	4.0
26	SR 2074 opposite McDowell Creek Treatment Plant	43.4	3.0	53.1	1.8	49.2	1.8	61.7	2.3
27	Private residence near end of SR 2074	39.2	1.1	67.2	3.3	56.8	0.7	75.6	2.9
28	Freedom Dr. (NC 27) & Brown's Ave., Charlotte	42.5	2.4	53.5	3.5	48.1	1.6	70.5	2.9
29	Public Library, Beatties Ford Rd. in Charlotte	43.6	2.2	58.4	2.1	49.7	0.7	69.5	1.1
30	Graham & Craighead Streets, Charlotte	49.8	1.9	51.7	1.4	48.5	1.8	64.3	2.6
31	Union Grove Church, Cashion Rd. (SR 2133)	44.3	4.5	44.5	4.0	41.3	0.5	56.8	3.3
32	SR 2133 at telephone junction box	56.8	3.4	54.8	3.6	49.7	2.9	63.7	4.8
33	End of SR 2133	48.2	2.8	51.5	1.7	48.0	1.8	65.2	2.9
34	Gilead Vol. Fire Dept., SR 2136	49.5	1.5	57.4	1.3	50.1	2.3	76.4	2.5
35	NC 73 & Terry Lane (SR 2255)	45.4	3.4	56.4	2.1	46.6	1.3	64.8	3.1
36	Norman Island Drive, SR 2145	49.3	1.1	57.3	2.2	54.8	1.4	72.5	0.9
37	Sam Furr (SR 2145) & Northcross (SR 2316) Rds.	44.2	1.5	58.1	2.3	52.1	1.3	69.6	2.3
38	US 21 & Westmoreland Rd., SR 2147	48.9	3.2	59.0	4.6	56.5	3.6	73.5	6.2
39	Boat Marina Parking Lot on Henderson Rd., SR 2307	57.1	1.7	51.5	3.7	51.8	1.6	69.0	6.6
40	End of Bethel Church Rd., SR 2189	70.9	1.3	55.2	3.9	55.3	3.4	70.4	3.1
41	End of John Connor Rd., SR 2149	47.5	3.0	51.2	2.3	41.5	0.7	62.5	3.6
42	Mollypop Rd., SR 2332	59.9	1.7	57.9	1.4	50.9	6.1	76.1	1.9
43	Jetton (SR 2151) & Casual Cay (private) Roads	59.2	0.8	61.0	4.1	55.1	2.7	79.5	6.8
46	Shoppes at Davidson Shopping Center, Concord	52.9	4.3	77.2	2.5	67.2	3.2	92.3	6.8
Average		51.4		59.1		53.5		73.2	
Yearly Average, All Sites		59.3							