

GEHitachiUELAPEm Resource

From: Ridge, Christianne
Sent: Tuesday, September 01, 2009 10:48 AM
To: 'Avci, Halil I.'
Cc: 'Fischer, Karl W.'; Kamboj, Sunita
Subject: FW: Requested GNF data for 2006
Attachments: GE Data (LISTED AS TEMPLATE by PC)Template-2006.doc; Sample_key.doc; GEMAP01.doc; GEMAP02.doc

From: Dusenbury, Dale [mailto:dale.dusenbury@ncdenr.gov]
Sent: Tuesday, September 01, 2009 10:01 AM
To: Ridge, Christianne
Cc: Dusenbury, Dale
Subject: Requested GNF data for 2006

Here is the GE environmental data for 2006. There may be some gaps in the data due to data system switchovers, but this is what we have. The files are in Word documents and text files by sampling media. I have attached a sample key along with several other files. The sample key gives the designation for each type of sample. There are also several maps of the sampling sites as well. Please contact me if you have questions.

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Opinions expressed are not necessarily the official position of the agency.

Hearing Identifier: GEHitachiUE_LicenseApplication_Public
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Mail Envelope Properties (89515C5A6407354784A897CABE08E52D0889E0A23C)

Subject: FW: Requested GNF data for 2006
Sent Date: 9/1/2009 10:47:33 AM
Received Date: 9/1/2009 10:47:00 AM
From: Ridge, Christianne

Created By: Christianne.Ridge@nrc.gov

Recipients:

"Fischer, Karl W." <kfischer@anl.gov>
Tracking Status: None
"Kamboj, Sunita" <skamboj@anl.gov>
Tracking Status: None
"Avci, Halil I." <avci@anl.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	Size	Date & Time
MESSAGE	1106	9/1/2009 10:47:00 AM
GE Data (LISTED AS TEMPLATE by PC)Template-2006.doc		416834
Sample_key.doc	27714	
GEMAP01.doc	455746	
GEMAP02.doc	437826	

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Section 5: General Electric Uranium Fuel Fabrication Plant, Castle Hayne, North Carolina**Air Particulate - Gross Alpha, (pCi/m³)**

Week	<u>Indicator (GE-APLV-20)^a</u>				<u>Control (GE-APLV-03)^b</u>			
	<u>All measurements x 10⁻³ pCi/m³</u>				<u>All measurements x 10⁻³ pCi/m³</u>			
	<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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>	
1/2/06	-	-	1.31	1.31	-	-	0.98	0.98
1/9/06	-	-	4.02	1.59	-	-	2.99	1.58
1/17/06	-	-	1.35	0.69	-	-	4.27	4.27
1/23/06	-	-	1.44	0.82	-	-	1.53	0.90
1/30/06	-	-	1.37	0.87	-	-	0.85	0.48
2/6/06	-	-	3.59	1.44	-	-	2.75	1.14
2/13/06	-	-	3.52	1.35	-	-	4.66	1.76
2/20/06	-	-	3.10	1.33	-	-	2.84	1.24
2/27/06	-	-	2.15	1.06	-	-	1.78	0.91
3/6/06	-	-	4.01	1.79	-	-	4.56	1.97
3/13/06	1.80	0.40	3.16	1.32	1.60	0.40	4.14	1.65
3/20/06	2.20	0.40	4.35	1.82	1.80	0.40	3.34	1.44
3/27/06	1.70	0.40	1.63	8.48	2.20	0.40	1.62	0.83
4/3/06	2.00	0.40	4.05	1.65	2.10	0.40	2.37	1.08
4/10/06	0.18	0.40	2.38	1.09	1.50	0.40	2.87	1.26
4/17/06	0.90	0.30	2.69	1.11	1.50	0.60	2.44	1.02
4/24/06	1.70	0.40	2.26	9.62	1.50	0.40	1.97	0.85
5/1/06	1.60	0.40	3.07	1.41	1.10	0.30	1.56	0.82
5/8/06	1.60	0.40	4.13	1.56	1.50	0.40	4.67	1.72
5/15/06	2.10	0.40	1.88	8.87	1.80	0.40	2.04	0.92
5/22/06	1.70	0.40	3.11	1.20	1.70	0.40	2.85	1.10
5/30/06	1.20	0.20	2.73	1.06	1.60	0.30	3.17	1.21
6/5/06	4.20	1.10	3.03	1.22	1.70	0.40	3.41	1.34
6/12/06	1.50	0.40	3.51	1.29	1.60	0.40	3.23	1.18
6/19/06	1.20	0.40	2.34	0.90	1.70	0.40	2.91	1.10
6/28/06	0.70	0.20	1.59	0.44	0.90	0.30	1.49	0.76
7/5/06	2.30	0.50	3.03	1.32	10.1	1.70	1.49	0.76
7/10/06	1.00	0.40	0.45	0.45	1.30	0.50	0.41	0.41
7/17/06	1.80	0.40	2.92	1.16	1.30	0.40	1.79	0.87
7/24/06	4.90	0.30	1.84	0.85	5.0	0.30	2.27	0.98
7/31/06	4.50	0.30	2.57	1.10	4.6	0.30	2.16	0.94
8/8/06	5.30	0.30	5.93	2.17	5.10	0.30	4.05	1.50
8/14/06	3.90	0.30	3.34	1.30	4.10	0.30	4.92	1.85
8/21/06	3.90	0.30	3.85	1.54	4.90	0.30	3.48	1.85
8/28/06	4.50	0.30	3.32	1.30	3.80	0.20	2.76	1.10
9/6/06	0.90	0.10	1.02	0.67	0.90	0.10	1.24	0.73
9/11/06	6.0	0.40	5.81	2.25	5.50	0.30	6.34	2.44
9/19/06	3.20	0.20	3.07	1.24	3.00	0.20	3.55	1.40
9/25/06	4.40	0.30	2.61	1.17	4.30	0.30	4.44	1.78
10/2/06	5.10	0.30	3.74	1.45	4.80	0.30	2.83	1.12
10/9/06	3.30	0.20	3.96	1.60	3.40	0.20	4.33	1.71
10/16/06	3.70	0.20	3.40	1.38	4.00	0.30	3.70	3.70
10/24/06	1.80	0.10	3.81	1.44	1.80	0.10	4.86	1.81
10/30/06	2.50	0.20	2.87	1.30	2.90	0.20	3.00	1.33
11/6/06	3.10	0.20	4.86	1.84	2.90	0.20	3.62	1.40
11/13/06	2.30	0.30	2.88	1.19	2.10	0.20	2.21	0.95
11/20/06	2.70	0.20	4.08	1.64	2.00	0.20	3.78	1.53
11/27/06	1.60	0.20	2.48	1.02	1.10	0.20	1.87	0.80
12/4/06	1.50	0.20	1.23	0.70	1.20	0.20	2.15	0.96
12/11/06	2.00	0.20	5.42	2.00	1.90	0.20	5.40	1.99
12/18/06	0.40	0.10	2.70	1.13	0.80	0.10	2.53	1.08
12/27/06	-	-	2.03	0.94	1.00	0.10	2.35	1.05

Air Particulate - Gross Alpha, (pCi/m³)

<u>Week</u>	<u>Indicator (GE-APLV-20)^a</u>				<u>Control (GE-APLV-03)^b</u>			
	<u>All measurements x 10⁻³ pCi/m³</u>				<u>All measurements x 10⁻³ pCi/m³</u>			
	<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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								
% Diff.								

^a GE-APLV-20 is located at the South Fence of the FMO Building Air Samples are collected weekly at this site by NCDRP and GE. Filters are composited monthly by GE and quarterly by NCDRP.

^b GE-APLV-03 is located at the GE dock downstream of the discharge canal. Air samples are collected weekly at this site by NCDRP and GE. Filters are composited monthly by GE and quarterly by NCDRP.

Air Particulate - Gross Alpha (pCi/m³)

<u>GE-APLV-11^a</u>			<u>GE-APLV-11^a</u>		
<u>All measurements x 10⁻³ pCi/m³</u>			<u>All measurements x 10⁻³ pCi/m³</u>		
<u>DRP</u>			<u>DRP</u>		
<u>Date</u>	<u>Meas.</u>	<u>Error</u>	<u>Date</u>	<u>Meas.</u>	<u>Error</u>
1/4/06	8.60	1.70	7/17/06	0.30	0.10
1/9/06	4.20	1.70	7/24/06	2.10	0.20
1/17/06	2.80	1.50	7/31/06	1.20	0.20
1/23/06	4.00	1.50			
1/30/06	2.40	1.20			
2/6/06	1.70	1.30	8/7/06	2.30	0.20
2/13/06	8.30	1.70	8/14/06	0.70	0.10
2/22/06	5.30	1.70	8/21/06	1.80	0.20
2/27/06	3.20	1.90	8/29/06	1.40	0.20
3/6/06	5.00	2.20	9/5/06	0.15	0.10
3/13/06	3.40	1.50	9/11/06	1.40	0.20
3/27/06	6.40	1.30	9/18/06	0.80	0.10
			9/25/06	0.90	0.10
4/3/06	7.60	2.50	10/2/06	2.10	0.20
4/10/06	4.20	1.60	10/9/06	1.00	0.20
4/17/06	16.90	2.10	10/16/06	0.40	0.10
4/24/06	4.00	2.00	10/24/06	0.60	0.10
5/1/06	5.70	3.30	10/30/06	0.90	0.20
5/11/06	6.00	1.40	11/8/06	2.10	0.20
5/15/06	11.10	2.70	11/13/06	0.60	0.20
5/22/06	4.10	1.60	11/20/06	0.40	0.10
5/30/06	4.50	1.70	11/27/06	1.10	0.20
6/5/06	8.30	1.80	12/4/06	0.50	0.10
6/12/06	3.30	1.70	12/11/06	1.30	0.20
6/19/06	10.60	0.80	12/18/06	0.10	0.10
6/28/06	6.20	1.60	12/22/06	1.70	0.30
			Average		
			% Diff.	-	

^a GE-APLV-11 is located at the Horticultural Crops Research Station on Hwy. 117 across from GE plant.

Waste Water-Gross Alpha, Gross Beta, and Isotopic Uranium (pCi/l)

Indicator (GE-WW-02)^a

All measurements in pCi/l

<u>Date</u>	<u>Isotope</u>	<u>DRP</u>		<u>GE</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
1/23/06	Alpha	-	-	72.0E+00	14.0E+00
	Beta	-	-	35.5E+00	5.90E+00
2/	Alpha				
	Beta				
3/6/06	Alpha	52.59E+00	3.01E+00	32.3E+00	8.29E+00
	Beta	19.26E+00	1.78E+00	19.2E+00	4.68E+00
4/10/06	Alpha	175.44E+00	5.69E+00	135.0E+00	18.4E+00
	Beta	51.06E+00	2.29E+00	37.2E+00	5.67E+00
5/1/06	Alpha	404.26E+00	10.65E+00	182.0E+00	22.7E+00
	Beta	73.2E+00	2.44E+00	60.1E+00	7.02E+00
6/12/06	Alpha	186.65E+00	7.07E+00	93.2E+00	17.93E+00
	Beta	35.15E+00	1.98E+00	35.1E+00	5.94E+00
7/117/06	Alpha	-	-	73.4E+00	16.1E+00
	Beta	-	-	32.7E+00	5.90E+00
8/31/06	Alpha	-	-	58.4E+00	12.5E+00
	Beta	-	-	27.0E+00	4.25E+00
9/5/06	Alpha	-	-	-	-
	Beta	-	-	-	-
10/2/06	Alpha	-	-	75.6E+00	12.0E+00
	Beta	-	-	39.5E+00	46.7E+00
11/6/06	Alpha	-	-	57.1E+00	10.4E+00
	Beta	-	-	25.2 E+00	3.94E+00

^a Sample of effluent is collected monthly at site dam.

Surface Water – Gross Alpha, Gross Beta, and Isotopic Uranium, (pCi/l)

<u>Date</u>	<u>Isotope</u>	<u>Indicator (GE-SW-03)^a</u>				<u>Control (GE-SW-04)^b</u>			
		<u>All measurements in pCi/l</u>				<u>All measurements in pCi/l</u>			
		<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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>
4/10/06	Alpha	3.32E+00	1.60E+00	12.1E+00	12.1E+00	1.73E+00	1.08E+00	1.76E+00	1.76E+00
	Beta	32.67E+00	2.08E+00	99.7E+00	13.2E+00	3.50E+00	1.53E+00	6.85E+00	3.01 E+00
6/28/06	Alpha	2.57E+00	1.06E+00	3.02E+00	3.02E+00	0.69E+00	1.00E+00	3.12E+00	3.12E+00
	Beta	5.36E+00	1.53E+00	4.45E+00	4.45E+00	3.84E+00	1.50E+00	5.48E+00	3.19E+00
9/07/06	Alpha	-	-	2.49E+00	2.49E+00	-	-	2.52E+00	2.52E+00
	Beta	-	-	4.62E+00	2.93E+00	-	-	4.25E+00	4.25E+00
11/06/07	Alpha	-	-	5.4E+00	5.4E+00	-	-	1.3E+00	1.3E+00
	Beta	-	-	50.0E+00	7.16E+00	-	-	7.39E+00	2.11E+00

^a GE-SW-03 is located at the site dam and is sampled on a quarterly basis.

^b GE-SW-04 is located at the Cape Fear River Public Boat Doc and is sampled on a quarterly basis.

Ground Water-Gross Alpha, Gross Beta, and Uranium (pCi/l)

<u>Date</u>	<u>Isotope</u>	<u>Indicator (GE-GW-PL3A)^a</u>				<u>GE-GW-FW03A^a</u>			
		<u>All measurements in pCi/l</u>				<u>All measurements in pCi/l</u>			
		<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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>
1/30/06	Alpha	7.88E+00	1.36E+00	5.48E+00	2.81E+00				
	Beta	10.6E+00	1.61E+00	12.4E+00	3.80E+00				
2/01/06	Alpha					1.28E+00	1.03E+00	< 2.19E+00	2.19E+00
	Beta					2.92E+00	1.54E+00	<4.58E+00	4.58E+00
4/24/06	Alpha	8.79E+00	1.59E+00	< 2.50E+00	2.50E+00				
	Beta	11.03E+00	1.72E+00	10.4E+00	3.35E+00				
6/26/06	Alpha								
	Beta								
9/11/06	Alpha							< 2.69E+00	2.69E+00
	Beta							4.37E+00	4.37E+00
	Alpha								
	Beta								

Ground Water - Alpha, Beta, and Uranium, pCi/l

<u>Date</u>	<u>Isotope</u>	<u>GE-GW-WT6^a</u>				<u>All measurements in pCi/l</u>			
		<u>All measurements in pCi/l</u>				<u>All measurements in pCi/l</u>			
		<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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>
6/26/06	Alpha			4.14E+00	2.51E+00				
	Beta			< 4.35E+00	4.35E+00				
	Alpha								
	Beta								
	Alpha								
	Beta								

a. Samples were collected onsite by RTI contract services through GNF, and performed on a semi-annual basis

Terrestrial Vegetation - Gross Alpha, Gross Beta, and Isotopic Uranium, pCi/g

<u>Date</u>	<u>Isotope</u>	<u>Indicator (GE-TV-05)^a</u>				<u>Indicator (GE-TV-06)^b</u>			
		<u>DRP (pCi/g-ash)</u>		<u>GE (pCi/g-dry)</u>		<u>DRP (pCi/g-ash)</u>		<u>GE (pCi/g-dry)</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>
4/17/06	Alpha	6.92E+00	1.9E+00	2.59E-01	1.45E-01	27.35E+00	5.29E+00	1.17E-01	6.79E-02
	Beta	41.37E+00	3.33E+00	12.0E+00	3.47E-01	73.05E+00	7.91E+00	3.13E+00	1.22E-01
8/28/06	Alpha			3.63E+00	8.87E-01			1.48E+00	7.87E-01
	Beta			34.1E+00	1.11E+00			20.0E+00	1.03E+00

^a GE-TV-05 is located at Tinga Farm and is collected semi-annually.

^b GE-TV-06 is located near St. Stanislaus Church on Marathon Avenue. Samples are collected semi-annually.

Soil, Alpha, Beta, and Isotopic Uranium, (pCi/gm-dry)

Date	Isotope	Indicator (GE-SS-05)^a				(GE-SS-06)^b			
		All measurements in pCi/g				All measurements in pCi/g			
		DRP		GE		DRP		GE	
		Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
4/18/06	Alpha	5.21E+01	2.65E+00	<2.30E+00	2.30E+00	1.78E+00	3.11E+00	<2.36E+00	2.36E+00
	Beta	7.02E+01	1.65E+01	8.06E+00	1.67E+00	1.36E+00	3.42E+00	3.16E+00	1.33E+00
8/28/06	Alpha			< 2.88E+00	2.88E+00			5.39E+00	2.95E+00
	Beta			10.7E+00	1.76E+00			4.36E+00	1.34E+00

^a GE-SS-05 is located in neighborhood across from Tinga Farm.

^b GE-SS-06 is located at Saint Stanislaus Catholic Church on Marathon Avenue. Samples are collected semi-annually.

Sediment-Gross Alpha, Gross Beta and Isotopic Uranium (pCi/g-dry)

<u>Date</u>	<u>Isotope</u>	<u>Indicator (GE-SD-02D)^a</u>				<u>Control(GE-SD-03)^b</u>			
		<u>All measurements in pCi/g</u>				<u>All measurements in pCi/g</u>			
		<u>DRP</u>		<u>GE</u>		<u>DRP</u>		<u>GE</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>
4/10/06	Alpha	46.02E+00	4.41E+00	48.3E+00	9.91E+00	2.48E+00	2.56E+00	<3.96E+00	3.96E+00
	Beta	13.59E+00	1.41E+00	41.8E+00	3.36E+00	5.73E+00	1.31E+00	3.26E+00	1.41E+00
6/28/06	Alpha			216.0+00	21.6E+00			<2.39E+00	2.39E+00
	Beta			284.0E+00	7.67E+00			4.82E+00	1.35E+00

Sediment-Gross Alpha, Gross Beta, and Isotopic Uranium(pCi/g-dry)

<u>Date</u>	<u>Isotope</u>	<u>Indicator (GE-SD-04)^c</u>			
		<u>All measurements in pCi/g</u>			
		<u>DRP</u>		<u>GE</u>	
		<u>Meas.</u>	<u>Error</u>	<u>Meas.</u>	<u>Error</u>
4/10/06	Alpha	3.73E+00	2.73E+00	<4.98E+00	4.98E+00
	Beta	2.37E+00	2.02E+00	5.52E+00	1.72E+00
6/28/06	Alpha			< 2.59E+00	2.59E+00
	Beta			5.51E+00	1.41E+00

^a GE-SD-02D is collected below the process lagoon discharge pipe outfall near the dam site.

^b GE-SD-03 is located at the site dock.

^c GE-SD-04 is located at the Castle Hayne Boat Landing.

TLD

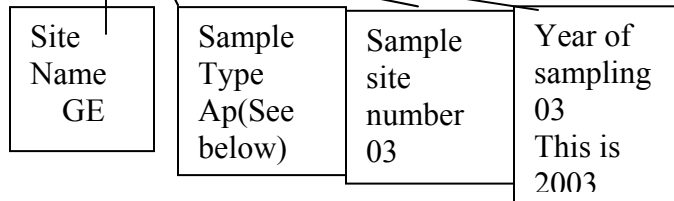
<u>Loc #</u>	<u>Location</u>	<u>All readings in mR/year.</u>							
		<u>1st Qtr</u>		<u>2nd Qtr</u>		<u>3rd Qtr</u>		<u>4th Qtr</u>	
		<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>	<u>Meas</u>	<u>Error</u>
1	Lagoon	44.2	3.0	38.2	0.6	43.3	3.8	37.6	1.6
2	Site Dam	41.2	2.4	39.0	2.1	49.8	4.7	39.9	1.9
3	Site Dock	25.7	0.7	31.7	1.3	35.4	3.6	32.6	2.4
4	Public Dock	39.3	2.2	43.5	1.9	NA		37.3	1.9
5	Tinga Farm	46.2	2.3	44.6	2.0	60.3	5.3	39.4	2.2
	Quarterly Average, All Sites	39.3		39.4		47.2		37.4	
	Yearly Average, All Sites	40.8							

NA=Missing

Key to Standard Designations for GNF samples

1. Sample data is in several forms, ie. Word documents and text documents.
2. Sample data titles are in several forms. Word documents may have an actual title such as “GE-Data Template-2002.
3. Sample data in other formats (such as text files with the .txt suffix) have a title made of identifiers of facility name, sample type, and year as shown below:

Example:geap0303.txt



Sample Type Abbreviations

1. Air sample-AP or APLV
2. Surface water-SW
3. Ground water-GW
4. Sediment-SD
5. Soil-SS
6. Waste Water-WW(from outfall lagoon)
7. TV terrestrial vegetation

Examples:

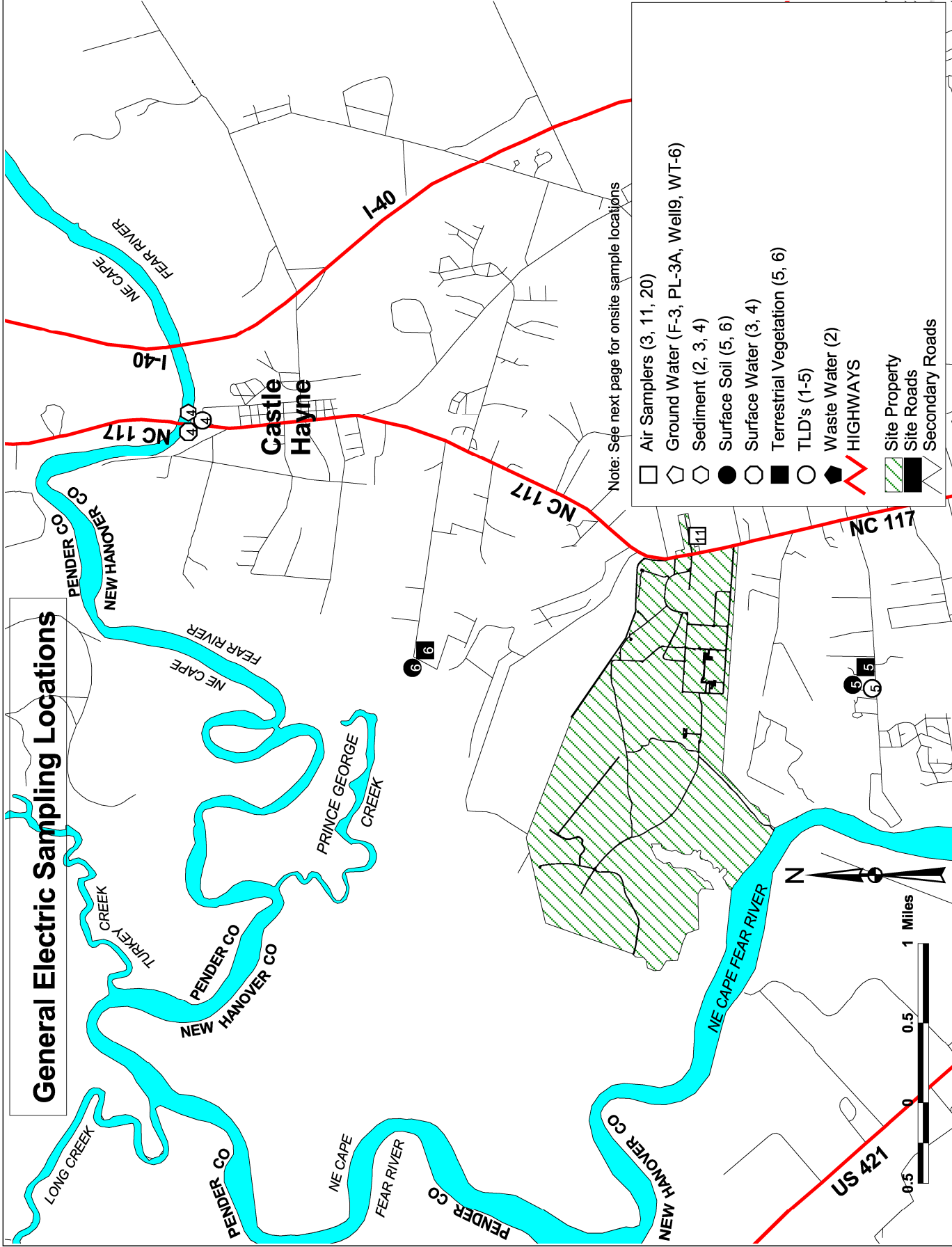
Getv0504-

Facility GE

Sample type:TV –Terrestrial vegetation

05-Sample location number 05

04-Collection year 2004



General Electric Sample Locations (Site Map)

