



DRINKING WATER WELL AND RECEPTOR SURVEY

FOR

**ROXBORO STEAM ELECTRIC PLANT
1700 DUNNWAY ROAD
SEMORA, NORTH CAROLINA 27343
NPDES PERMIT #NC0003425**

PREPARED FOR

**DUKE ENERGY PROGRESS, INC.
RALEIGH, NORTH CAROLINA**



SUBMITTED: SEPTEMBER 2014

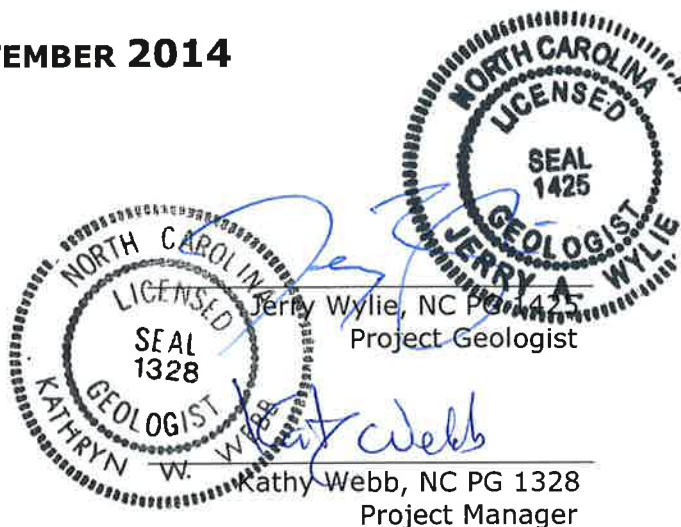


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EXECUTIVE SUMMARY

Duke Energy Progress, Inc. (Duke Energy) owns and operates the Roxboro Steam Electric Plant (Roxboro Plant) located near Semora, in Person County, North Carolina. The Plant operates four coal-fired units. Coal combustion residues (CCR) have historically been managed at the Plant's on-site ash basins: the semi-active East Ash Basin (operated from 1966 to present) and the active West Ash Basin (operated from 1973 to present). An unlined landfill was constructed on top of the East Ash Basin in 1988 for the placement of CCR. A lined landfill was constructed over the unlined landfill in 2004.

In accordance with the requirements stipulated in Coal Ash Management Act 2014 – North Carolina Senate Bill 729 (August, 2014), a survey was conducted to identify drinking water supply wells and surface water bodies located downgradient of the facility, herein referred to as the potential area of interest. In addition, to satisfy the requirements of the Notice of Regulatory Requirements (NORR) received by Duke on August 13, 2014, potential water supply wells located within 0.5 mile of the Roxboro Plant ash basins compliance boundary are also included.

Routine water level measurements and corresponding elevations from the groundwater compliance monitoring well network indicate that groundwater flows from upland areas along the south, west, and eastern boundaries of the Plant property towards Hyco Lake. Groundwater generally flows from the south to the north along the western portion of the property and from the southeast to the northwest across the remainder of the property.

No public or private drinking water wells, or wellhead protection areas, are located within the potential area of interest downgradient of the ash basins. This finding is supported by field observations and a review of public records. Based on the anticipated groundwater flow path, none of the wells identified in the water well survey are located downgradient of the ash basin. The location and relevant information pertaining to suspected water wells located upgradient of the facility, within 0.5 mile of the compliance boundary, are included in this report as required by the NORR.

1.0 INTRODUCTION

Duke Energy Progress, Inc. (Duke Energy) owns and operates the Roxboro Steam Electric Plant (Roxboro Plant) located near Semora, in Person County, North Carolina (**Figure 1**). The Plant operates four coal-fired units. Coal combustion residues (CCR) have historically been managed at the Plant's on-site ash basins: the semi-active East Ash Basin (operated from 1966 to present) and the active West Ash Basin (operated from 1973 to present; **Figure 2**). An unlined landfill was constructed on top of the East Ash Basin in 1988 for the placement of CCR. A lined landfill was constructed over the unlined landfill in 2004.

Wastewater discharges from the ash basins are permitted by the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Resources (DWR) under the National Pollution Discharge Elimination System (NPDES) Permit NC0003425.

SynTerra has conducted a survey to identify drinking water supply wells within 0.5 miles of the Roxboro Plant ash basins compliance boundary (**Figure 2**). The compliance boundary for groundwater quality in relation to the ash basins is defined in accordance with 15A NCAC 02L .0107(a) as being established at either 500 feet from the waste boundary or at the property boundary, whichever is closer to the source.

This drinking water well survey report has been prepared to meet the requirements stipulated in Coal Ash Management Act 2014 – North Carolina Senate Bill 729 (August 2014) and the Notice of Regulatory Requirements (NORR) received by Duke on August 13, 2014.

As part of the survey, a questionnaire is being sent to owners of property within the survey area as directed by DWR. The purpose of the questionnaire is to determine if additional wells may be present in the area that were not observed or have not been previously reported. The questionnaire is also designed to collect additional information, such as well use and construction details. An addendum letter and updated information summarizing the questionnaire findings will be submitted to the DWR no later than November 7, 2014. The information available to date is herein provided.

2.0 BACKGROUND

2.1 Plant and Ash Basins Description

The Roxboro Plant is a coal-fired electricity-generating located in Person County, North Carolina, near Semora, North Carolina (**Figure 1**). The Roxboro Plant started operations in 1966. The Plant is located on Dunnaway Road, approximately 10 miles northwest of the city of Roxboro, North Carolina. The Plant is situated on the south side of Hyco Lake, a lake formed from the impoundment of the Hyco River. The Plant property is roughly bounded by Hyco Lake to the north and west, NC Highway 57 (Semora Road) to the south and west, and State Highway 1336 (McGhees Mill Road) to the east. The overall topography of the Plant generally slopes toward the north (Hyco Lake).

Wet ash and run off from the East Ash Basin/lined landfill is contained in the West Ash Basin which encompasses an area of approximately 200 acres. The Roxboro Plant NPDES permit (NC0003425) authorizes two discharges to Hyco Lake. Outfall 003 includes flow from several waste streams and internal outfalls including once-through cooling water, stormwater, and ash basin effluent. Outfall 006 primarily handles runoff from coal pile and other coal handling and discharges to Hyco Lake after neutralization sedimentation, and equalization.

2.2 Description of Surrounding Properties

Properties located within a 0.5 mile radius of the Roxboro Plant compliance boundary are located in Person County, North Carolina. The property uses include primarily residential, agricultural, and undeveloped land, with limited commercial/industrial usage.

Figure 2 depicts the properties surrounding the Roxboro Plant.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Generalized Site Hydrogeologic Conceptual Model

The Roxboro Plant is situated in the eastern Piedmont Region of north-central North Carolina. The Piedmont is characterized by well-rounded hills and rolling ridges cut by small streams and drainages. Elevations in the area of the Roxboro Plant range between 410 feet above mean sea level (msl) during full pool at Hyco Lake to 570 feet msl near the Dunnaway Rd and McGhees Mill Road intersection southeast of the Plant.

Geologically, the Plant is located at the contact of two regional geologic zones: the Inner Piedmont zone and the Carolina zone. Both zones are generally comprised of igneous and metamorphosed igneous and sedimentary rocks of Paleozoic age. In general, the rocks are highly fractured and folded and have been subjected to long periods of physical and chemical weathering. The origination, genesis, and characteristics of the rocks of the region have been the focus of detailed study by researchers for many years. These investigations have resulted in a number of interpretations and periodic refinements to the overall geological model of the region.

Rocks of the region, except where exposed in road cuts, stream channels, and steep hillsides, are covered with unconsolidated material formed from the in-situ chemical and physical breakdown of the bedrock. This unconsolidated material is referred to as saprolite or residuum. Direct observations at the Roxboro Plant confirm the presence of residuum, developed above the bedrock, which is generally 10 to 30 feet thick. The residuum extends from the ground surface (soil zones) downward, transitioning through a zone comprised of unconsolidated silt and sand, downward through a transition zone of partially weathered rock in a silt/sand matrix, down to the contact with competent bedrock.

Groundwater within the area exists under unconfined, or water table, conditions within the residuum and/or saprolite zone and in fractures and joints of the underlying bedrock. The water table and bedrock aquifers are interconnected. The residuum acts as a reservoir for supplying groundwater to the fractures and joints in the bedrock.

3.2 Site Geology/Hydrogeology

The *Geologic Map of North Carolina* (1985) places the rocks of the Plant area in the Charlotte Terrane: a belt of metamorphic rock trending generally southwest to northeast characterized by strongly foliated felsic mica gneiss and schist and metamorphosed intrusive rocks. The rocks of the area near the Plant are described as biotite gneiss and schist with abundant potassic feldspar and garnet, and interlayered and gradational with calc-silicate rock, silliminite-mica schist and amphibolite. The

gneiss contains small masses of granite rock. The felsic mica gneiss of the Charlotte Terrane is described as being interlayered with biotite and hornblende schist. Later mapping generally confirms these observations and places the Roxboro Plant directly at the contact between the Inner Piedmont zone, characterized by the presence of biotite gneiss and schist, and the Charlotte Belt (or Charlotte Terrane), characterized by felsic mica gneiss (USGS, 2007).

Other researchers have conducted detailed investigations of the area and have provided additional description of the geology in detailed tectonic, structural, and litho-stratigraphic terms (Wilkins, Shell and Hibbard, 1995; Hibbard, et. al., 2002). One of the most important interpretations concerning the geologic nature of the region is the discovery of the Hyco shear zone, a tectonic boundary comprised of a ductile shear zone that sharply separates contrasting rocks of the Charlotte (Milton) and Carolina Terranes in north-central North Carolina and southern Virginia (Hibbard, et. al., 1998). The Hyco shear zone was mapped as directly underlying Hyco Lake.

These general geologic observations are consistent with site-specific observations from well logs for the Roxboro Plant, which document the bedrock of the northwestern portion of the compliance boundary as mafic granitic gneiss and the remainder of the site as felsic gneiss and hornblende gneiss. Based on previous activities at the site, subsurface lithology beneath the Plant area is comprised of tan to olive brown sandy silt and fine to coarse sands grading into partially weathered rock and then competent bedrock. The first occurrence of groundwater tends to be within the partially weathered rock or competent bedrock at depths ranging from three to 20 feet below land surface (bls) along the downgradient compliance boundary and greater than 35 feet bls upgradient of the ash basin.

3.3 Hydrogeologic Information for Flow Direction Determination

As previously described, groundwater within the area exists under unconfined conditions within the residuum and/or saprolite zones and in the fractures and joints of the underlying bedrock. Shallow groundwater generally flows from local recharge zones in topographically high areas, such as ridges, toward groundwater discharge zones, such as stream valleys. Ridge and topographic high areas serve as groundwater recharge zones, and groundwater flow patterns in recharge areas tend to develop a somewhat radial pattern from the center of the recharge area outward toward the discharge areas and are expected to mimic surface topography. The Roxboro Plant is bordered to the west, south, and east by areas of topographic highs. The surface water flow direction in the area of the plant is toward Hyco Lake.

3.4 Groundwater Flow Direction Determination Results

Routine water level measurements and corresponding elevations from the compliance monitoring well network indicate that groundwater generally flows from upland areas along the south, west, and eastern boundaries towards Hyco Lake. Groundwater generally flows from the south to the north along the western portion of the property and from the southeast to the northwest across the remainder of the property. The approximate groundwater gradient along the western portion of the property for July 2014 data was 85.04 feet (vertical change) over 530 feet (horizontal distance) or 16 feet/100 feet as measured from upgradient background well BG-1 to downgradient well CW-2. The approximate groundwater gradient along the northern compliance boundary for July 2014 was slightly less at 76.64 feet (vertical change) over 570 feet (horizontal distance) or 13.4 feet over 100 feet as measured from well CW-1 to downgradient well CW-2. Groundwater elevation data collected from the two well pairs indicate the vertical gradient tends to be upward or neutral between the transition zone and upper bedrock.

Therefore, the area around the ash basins would be considered the potential area of interest with respect to downgradient drinking water wells as shown on **Figure 3**.

4.0 DRINKING WATER WELL SURVEY ACTIVITIES AND FINDINGS

4.1 State Records Review

SynTerra reviewed the NCDENR Department of Environmental Health (DEH) Public Water Supply Section's (PWSS) Public Water Supply Water Sources Geographic Information System (GIS) point data set (pwsws.shp) and the Water Distribution Map Service (WDMS) data set obtained from the NC OneMap GeoSpatial Portal (<http://data.nconemap.com/geoportal/catalog/main/home.page>) to identify public water supply sources and water supply lines within a 0.5 mile radius of the Roxboro Plant compliance boundary.

According to the NC OneMap website, the Public Water Supply Water Sources point data was current through November 18, 2009, and that it is the most current GIS data set of public water supply locations available from North Carolina state agencies. The GIS point data for the public water supply wells includes, but is not limited to information such as public water supply (PWS) system identification numbers, ownership information, PWS source type, well depth, and well yield. The WDMS data set contains information on municipal water lines and other appurtenances.

On September 2, 2014 SynTerra reviewed the NCDENR Division of Water Resources (DWR) Source Water Assessment Program (SWAP) online database for public water supply sources to identify wells located within a 0.5 mile radius of the compliance boundary; to confirm the location of wells included in the Public Water Supply Water Sources GIS point data set, and to identify any wellhead protection areas located within a 0.5 mile radius of the compliance boundary. The NCDENR SWAP database provides detailed assessments of all public drinking water intakes and wellhead protection areas in North Carolina. The website address is: (<http://swap.ncwater.org/website/swap/viewer.htm>).

4.2 Federal/Other Records Review

SynTerra reviewed the United States Geological Survey (USGS) National Hydrography Dataset (NHD) obtained from the USGS National Map Viewer (<http://viewer.nationalmap.gov/viewer/>) to identify surface waters within a 0.5 mile radius of the compliance boundary. Hydrography data obtained from the USGS NHD is included on **Figure 3**.

A review of public database water well information provided by Environmental Data Resources, Inc. (EDR) was also conducted. The public water well information has been incorporated in the summary table (**Table 1**) and on **Figure 3**. A copy of the EDR report is included as **Appendix A**.

4.3 County and Utility Department Records Review

The Water Distribution Map Service (WDMS) data set obtained from the NC OneMap GeoSpatial Portal did not identify municipal water supply lines located within the 0.5 mile radius of the compliance boundary. A review of information from the Person County GIS, as well as field reconnaissance observations, indicated no municipal water lines present within 0.5 miles of the compliance boundary in any direction.

4.4 Field Survey

During March 2014, SynTerra personnel conducted a vehicular survey along public roads located within 0.5 mile radius of the compliance boundary. Observations on property use, apparent proximity to available municipal water lines, and structures that may represent potential water supply wells were noted. No wells were located downgradient of the ash basin compliance boundary.

A written survey questionnaire is being mailed to the owners of properties within the survey area (**Table 2**). The questionnaire requests information regarding potential well location, well use, well depth and construction, date of completion, etc. Information reported from the questionnaire responses will be compiled and provided as an addendum to the survey on or before November 7, 2014. An example of the survey questionnaire is attached in **Appendix B**.

5.0 SUMMARY OF FINDINGS

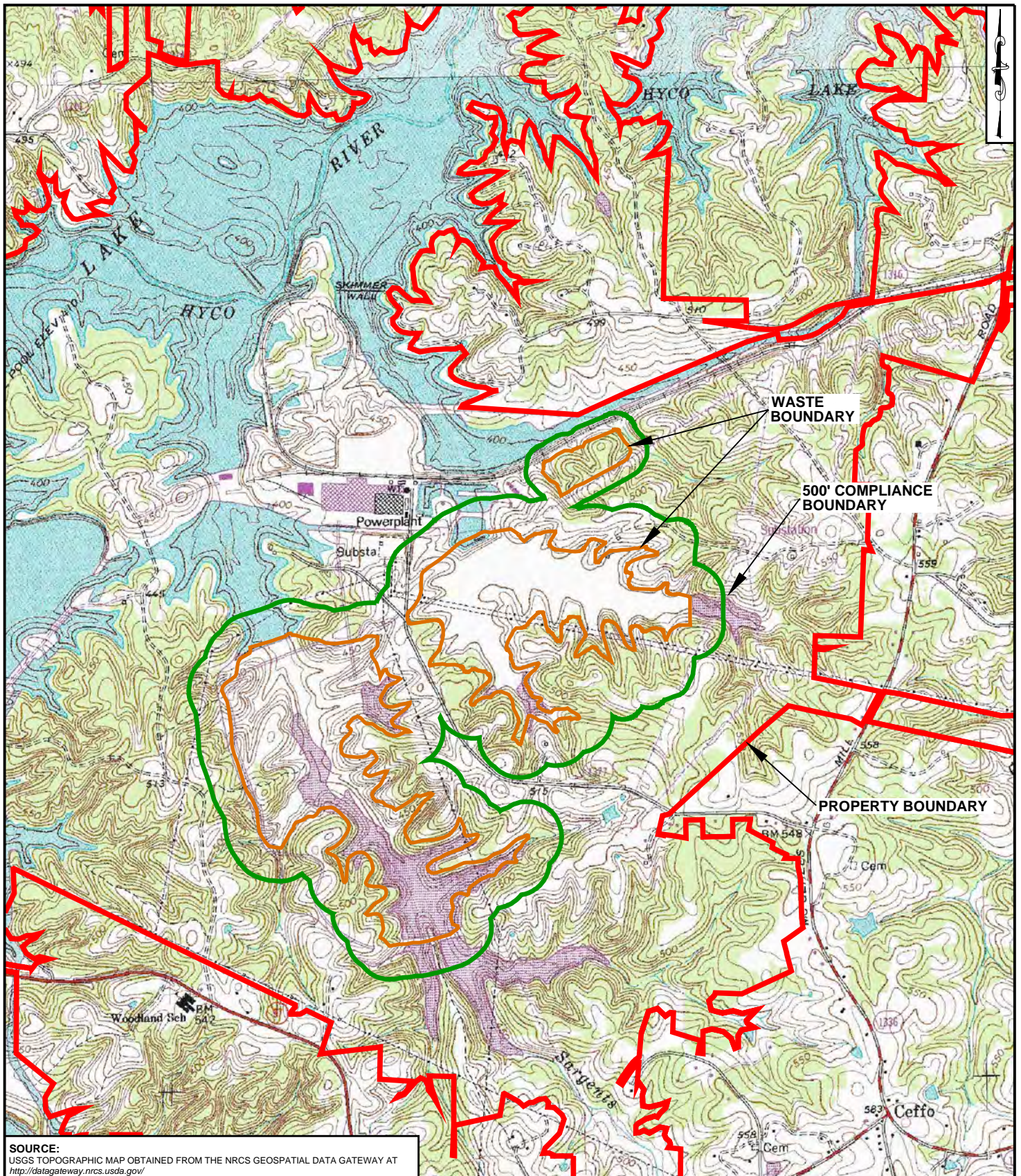
No public or private drinking water wells or wellhead protection areas are located within the potential area of interest (**Figure 3**). This finding is supported by field observations and the results of the records review as described in Section 4.0 above. Shallow groundwater flow across the Roxboro Plant is from upland areas along the south, west, and eastern boundaries of the Plant property towards Hyco Lake. Groundwater generally flows from the south to the north along the western portion of the property and from the southeast to the northwest across the remainder of the property (**Figure 3**). Based on this observation, none of the wells identified in the water well survey are located downgradient of the ash basins.

Water wells located upgradient of the facility and within 0.5 miles of the compliance boundary are noted on **Figure 3** in accordance with the NORR. Parcel information for these upgradient water well locations is provided in **Table 1**. A questionnaire is being sent to all the owners of property within the survey area as directed by DWR. These property owners are summarized on **Table 2**. An addendum letter and updated **Figure 3** summarizing the questionnaire findings will be submitted to the DWR no later than November 7, 2014.

6.0 REFERENCES

- Brown, P.M., and Parker, J.M., III, compilers, 1985, *Geologic map of North Carolina*: North Carolina Department of Natural Resources and Community Development, Division of Land Resources, scale 1:500,000, 1 sheet.
- Hibbard, James P., Glenn S. Shell, Phillip J. Bradley, Scott D. Samson, and Greg L. Wortman, February 1998, *The Hyco shear zone in North Carolina and southern Virginia: Implications for the Piedmont Zone-Carolina Zone boundary in the southern Appalachians*. *American Journal of Science*, V. 298, p. 85 – 107.
- Hibbard, James P., Edward F. Stoddard, Donald T. Secor, and Allen J. Dennis, 2002, *The Carolina Zone: overview of Neoproterozoic to Early Paleozoic peri-Gondwanan terranes along the eastern Flank of the southern Appalachians*: *Earth Science Reviews*, v. 57.
- USGS, December 2007, *Preliminary integrated geologic map databases for the United States: Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina*. United States Geological Survey Open-File Report 2005-1323, Version 1.1.
- Wilkins, James K., Glenn S. Shell, and James P. Hibbard, 1995, *Geologic contrasts across the central Piedmont Suture in north-central North Carolina*. *South Carolina Geology*, V. 37, p. 25 – 32.

FIGURES



SOURCE:
 USGS TOPOGRAPHIC MAP OBTAINED FROM THE NRCS GEOSPATIAL DATA GATEWAY AT
<http://datagateway.nrcs.usda.gov/>



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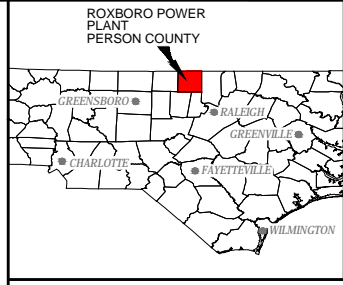


FIGURE 1
USGS TOPOGRAPHIC MAP
DUKE ENERGY PROGRESS
ROXBORO STEAM ELECTRIC PLANT
1700 DUNNWAY RD
SEMORA, NORTH CAROLINA
OLIVE HILL, NC QUADRANGLE

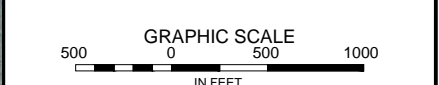
DRAWN BY: S. ARLEDGE DATE: 2014-09-26
 PROJECT MANAGER: KATHY WEBB CONTOUR INTERVAL: 10ft
 LAYOUT: FIG 1 (USGS SITE LOCATION) MAP DATE: 1994



LEGEND

- BACKGROUND MONITORING WELL (SURVEYED)
- COMPLIANCE MONITORING WELL (SURVEYED)
- DUKE ENERGY PROGRESS ROXBORO PLANT
- 500 FT COMPLIANCE BOUNDARY
- WASTE BOUNDARY

- SOURCES:**
1. 2012 AERIAL PHOTOGRAPH OF PERSON COUNTY, NORTH CAROLINA WAS OBTAINED FROM THE USGS EARTH EXPLORER WEB SITE AT <http://earthexplorer.usgs.gov/>
 2. WELL SURVEY INFORMATION, PROPERTY LINE, LANDFILL LIMITS AND BOUNDARIES ARE FROM ARCGIS FILES PROVIDED BY S&ME AND PROGRESS ENERGY.
 3. 2014 AERIAL PHOTOGRAPH WAS OBTAINED FROM WSP FLOWN ON APRIL 17, 2014.
 4. DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3200 (NAD 83).



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DRAWN BY: S. ARLEDGE	DATE: 2014-09-26
CHECKED BY: J. WYLIE	DATE: 2014-09-26
PROJECT MANAGER: K. WEBB	
LAYOUT NAME: FIG 2 (SITE LAYOUT)	

ROXBORO STEAM ELECTRIC PLANT
1700 DUNNWAY RD
SEMORA, NORTH CAROLINA

**FIGURE 2
SITE LAYOUT**



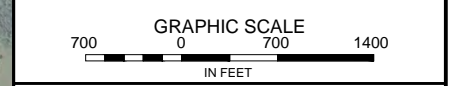
LEGEND

- BACKGROUND MONITORING WELL (SURVEYED)
- COMPLIANCE MONITORING WELL (SURVEYED)
- LANDFILL MONITORING WELL (SURVEYED)
- POSSIBLE WATER SUPPLY WELL
- REPORTED/OBSERVED WATER SUPPLY WELL
- EDR REPORTED SURFACE WATER INTAKE (APPROXIMATE)
- HALF MILE SURVEY BOUNDARY
- DUKE ENERGY PROGRESS ROXBORO PLANT
- 500 FT COMPLIANCE BOUNDARY
- WASTE BOUNDARY
- 2007 LIDAR CONTOUR MAJOR
- PARCEL LINE (PERSON CO GIS)
- FLOW DIRECTION
- POTENTIAL AREA OF INTEREST (APPROXIMATE)
- GENERALIZED GROUNDWATER FLOW DIRECTION
- SUPPORTED BY GROUNDWATER ELEVATION DATA OR TOPOGRAPHIC DATA

- SOURCES:**
- 2012 AERIAL PHOTOGRAPH OF PERSON COUNTY, NORTH CAROLINA WAS OBTAINED FROM THE USGS EARTH EXPLORER WEB SITE AT <http://earthexplorer.usgs.gov/>
 - WELL SURVEY INFORMATION, PROPERTY LINE, LANDFILL LIMITS AND BOUNDARIES ARE FROM ARCGIS FILES PROVIDED BY S&ME AND PROGRESS ENERGY.
 - PARCEL BOUNDARIES WERE OBTAINED FROM PERSON COUNTY (NC) GIS DATA AT <http://gis.personcountynet>
 - 2014 AERIAL PHOTOGRAPH WAS OBTAINED FROM WSP FLOW ON APRIL 17, 2014.
 - DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3200 (NAD 83).
 - 10ft CONTOUR INTERVALS FROM NCDOT LIDAR DATED 2007 https://connect.ncdot.gov/resources/gis/pages/cont-elev_v2.aspx

NOTE:

- CONTOUR LINES ARE USED FOR REPRESENTATIVE PURPOSES ONLY AND ARE NOT TO BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.



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CHECKED BY: J. WYLIE	DATE: 2014-09-26
PROJECT MANAGER: K. WEBB	
LAYOUT NAME: FIG 3 (DRINKING WATER MAP)(11X17)	

ROXBORO STEAM ELECTRIC PLANT
1700 DUNNWAY RD
SEMORA, NORTH CAROLINA

**FIGURE 3
DRINKING WATER WELL
SURVEY MAP**



TABLES

**TABLE 1
PUBLIC AND PRIVATE WATER SUPPLY WELLS
WITHIN 0.5 MILE RADIUS OF ASH BASINS COMPLIANCE BOUNDARY
ROXBORO STEAM ELECTRIC PLANT
DUKE ENERGY PROGRESS, INC., SEMORA, NORTH CAROLINA**

MAP WELL ID	PARCEL ID	WELL OWNER/USER	OWNER ADDRESS	OWNER CITY	OWNER STATE	OWNER ZIP	PARCEL ADDRESS (WELL LOCATION)	FIELD DESCRIPTION / NOTES
DW-1	9989-04-64-9710.000	CRUTCHFIELD, SARAH D & MICHAEL	4291 MCGHEES MILL RD	SEMORA	NC	27343	4291 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-2	9989-04-64-8345.000	HUGHES, DENISE D	5519 SPINDLEWOOD CT	DURHAM	NC	27703	2437 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-3	9989-04-74-0468.000	HUGHES, ANTOINETTE & J BAILEY	4268 MCGHEES MILL RD	SEMORA	NC	27343	4268 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-4	9989-04-74-0333.000	HESTER, EVA JEAN LIFE ESTATE	4236 MCGHEES MILL RD	SEMORA	NC	27343	4236 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-5	9989-04-63-6998.000	HUGHES, PHILLIP	4165 MCGHEES MILL RD	SEMORA	NC	27343	4165 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-6	9989-04-74-0104.000	ZIMMERMAN, CARROLL MERRITT L/ES	4180 MCGHEES MILL RD	SEMORA	NC	27343	4180 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-7	9989-04-63-9887.000	HUGHES, LEX LEWIS & RACHEL	4164 MCGHEES MILL RD	SEMORA	NC	27343	4164 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-8	9989-04-73-0609.000	CRAWLEY, MAE CHAMBERS LIFE EST	4114 MCGHEES MILL RD	SEMORA	NC	27343	4114 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-9	9989-04-73-0508.000	CRAWLEY, CHRISTOPHER L	4094 MCGHEES MILL RD	SEMORA	NC	27343	4094 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-10	9989-04-63-9590.000	MAJORS, SANDRA C	4072 MCGHEES MILL RD	SEMORA	NC	27343	4072 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-11	9989-04-82-4547.000	5G LLC	2309 EASY HORSE TRL	WAKE FOREST	NC	27587	4034 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-12	9989-04-63-9166.000	5G LLC	2309 EASY HORSE TRL	WAKE FOREST	NC	27587	4014 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-13	9989-04-62-9926.000	POWELL, JOHN L & GLADYS	9215 NC HIGHWAY 49	ROXBORO	NC	27574	3962 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-14	9989-04-62-9806.000	JACKSON, ANNIE M & OTHERS	1801 ARAGONA BLVD	FORT WASHINGTON	MD	20744	MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-15	9989-04-62-8666.000	FAULKNER, ELIJAH	3924 MCGHEES MILL RD	SEMORA	NC	27343	3924 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-16	9989-04-62-5459.000	DEAL OF PERSON LLC	34 LOCHRIDGE DR	ROXBORO	NC	27573	3893 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-17	9989-04-62-8437.000	POOLE, LLOYD JR	284 TANGLEWOOD CIR	ROXBORO	NC	27573	3892 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-18	9989-04-62-5218.000	DAVIS, LUCY B	3853 MCGHEES MILL RD	SEMORA	NC	27343	3853 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-19	9989-04-62-7287.000	RUSSELL, NOEL R	3854 MCGHEES MILL RD	SEMORA	NC	27343	3854 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-20	9989-04-62-7168.000	MCDANIEL, PEGGY D & DONALD W JR	1790 MCGHEES MILL RD	ROXBORO	NC	27574	3830 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-21	9989-04-52-9154.000	BENTLEY, PHILLIP ANDREW	3781 MCGHEES MILL RD	SEMORA	NC	27343	3781 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-22	9989-04-61-6844.000	CRAWLEY, MICKEY RAYE	3770 MCGHEES MILL RD	SEMORA	NC	27343	3770 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-23	9989-04-61-3835.000	JOHNSON, BETTY SUSIE	3749 MCGHEES MILL RD	SEMORA	NC	27343	3749 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-24	9989-04-61-1903.000	CHANDLER, WALLACE	65 THE JOHNSON LN	SEMORA	NC	27343	65 THE JOHNSON LN	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-25	9989-04-51-8907.000	CARTER, ANGIE	135 THE JOHNSON LN	SEMORA	NC	27343	135 THE JOHNSON LN	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-26	9989-04-52-5074.000	CUNNINGHAM, GLADYS W	156 THE JOHNSON LN	SEMORA	NC	27343	156 THE JOHNSON LN	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-27	9989-04-61-0224.000	KELLY, EARL CLYDE	PO BOX 84	SEMORA	NC	27343	3617 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-28	9989-04-51-9175.000	FIFE, SUE H	3599 MCGHEES MILL RD	SEMORA	NC	27343	3599 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-29	9989-04-61-3029.000	GARLAND, LORRAINE	315 NICHOLS AVE	ROXBORO	NC	27573	MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-30	9989-04-51-8091.000	WILLIAMS, BARRY	3579 MCGHEES MILL RD	SEMORA	NC	27343	3579 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-31	9989-04-60-1882.000	TUCK, MATT L	3558 MCGHEES MILL RD	SEMORA	NC	27343	3558 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA

**TABLE 1
PUBLIC AND PRIVATE WATER SUPPLY WELLS
WITHIN 0.5 MILE RADIUS OF ASH BASINS COMPLIANCE BOUNDARY
ROXBORO STEAM ELECTRIC PLANT
DUKE ENERGY PROGRESS, INC., SEMORA, NORTH CAROLINA**

MAP WELL ID	PARCEL ID	WELL OWNER/USER	OWNER ADDRESS	OWNER CITY	OWNER STATE	OWNER ZIP	PARCEL ADDRESS (WELL LOCATION)	FIELD DESCRIPTION / NOTES
DW-32	9989-04-50-7893.000	MCCAIN, JOHN N	3535 MCGHEES MILL RD	SEMORA	NC	27343	MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-33	9988-01-39-1733.000	WINSTEAD, WILLIE ESTATE	4037 MORTON PULLIAM RD	ROXBORO	NC	27574	399 DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-34	9988-01-39-2741.000	WINSTEAD, WAYNE B	381 DUNNAWAY RD	SEMORA	NC	27343	381 DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-35	9988-01-39-8619.000	JEFFERS, HOWARD JR	285 DUNNAWAY RD	SEMORA	NC	27343	285 DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-36	9989-03-40-0170.000	PURYEAR, KEVIN PROPERTIES LLC	PO BOX 1117	ROXBORO	NC	27573	DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-37	9988-01-49-1710.000	JEFFERS, DENNIS W & SHONDA BUMP	156 MAGGIE LN	ROXBORO	NC	27573	225 DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-38	9988-01-49-8582.000	CURRIE, MAGGIE J	67 DUNNAWAY RD	SEMORA	NC	27343	67 DUNNAWAY RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-39	9988-02-59-1781.000	ESTES, LARRY THOMAS & FAYE	3291 MCGHEES MILL RD	SEMORA	NC	27343	3291 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-40	9988-02-59-8579.000	GRAY, BOBBY R LIFE ESTATE	3276 MCGHEES MILL RD	SEMORA	NC	27343	3773 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-41	9988-02-59-8579.000	GRAY, BOBBY R LIFE ESTATE	3276 MCGHEES MILL RD	SEMORA	NC	27343	3773 MCGHEES MILL RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-42	9988-01-36-0728.000	CLAYTON, RANDY WILKINS	1027 COUNTRY CLUB RD	ROXBORO	NC	27574	520 ARCHIE CLAYTON RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-43	9988-01-36-5373.000	BARTS, EUGENE	462 ARCHIE CLAYTON RD	ROXBORO	NC	27574	462 ARCHIE CLAYTON RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-44	9988-01-36-7254.000	LEWIS, LARRY M & JOAN T	395 ARCHIE CLAYTON RD	ROXBORO	NC	27574	430 ARCHIE CLAYTON RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-45	9988-01-35-1957.000	WOOD, LEE JR & GAIL	507 ARCHIE CLAYTON RD	ROXBORO	NC	27574	507 ARCHIE CLAYTON RD	WELL STRUCTURE OBSERVED IN YARD; NO MUNICIPAL WATER LINES IN AREA
DW-46	9978-02-56-5922.000	PERSON COUNTY NORTH CAROLINA	304 S MORGAN ST RM 219	ROXBORO	NC	27573	7391 SEMORA RD	WATER SUPPLY WELL WITH WATER TOWER; WELL REPORTED TO BE 280 FEET DEEP BY EDR REPORT
DW-47	9978-02-66-1992.000	TBS REALTY INC	3808 BURLINGTON RD	ROXBORO	NC	27574	7275 SEMORA RD	WELL STRUCTURE OBSERVED BEHIND BUILDING; NO MUNICIPAL WATER LINES IN AREA
DW-48	9989-01-16-5827.000	CERTAINTED GYPSUM NC INC	921 A SHORE RD	SEMORA	NC	27343	921A SHORE RD	OCCUPIED/OPERATIONAL INDUSTRIAL FACILITY; REPORTED TO HAVE WATER SUPPLY WELL; NO MUNICIPAL WATER LINES IN AREA
PRW-1	9989-01-08-7367.000	LANGLEY, MARY & MCKINNEY DEBRA	137 COW PASTURE LN	SEMORA	NC	27343	137 COW PASTURE LN	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-2	9989-01-07-2923.000	ROYSTER, MARTHA ESTATE	1665 MONROE AVE APT 1B	BRONX	NY	10457	224 MARTHA ROYSTER RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-3	9989-04-74-1639.000	CHAMBERS, DONALD L & DELLA M	4300 MCGHEES MILL RD	SEMORA	NC	27343	4300 MCGHEES MILL RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-4	9989-04-50-4836.000	WALKER, WILLIAM & WENDY	3469 MCGHEES MILL RD	SEMORA	NC	27343	3469 MCGHEES MILL RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-5	9988-01-49-7632.000	FARMAN, DAVID & JANIE	101 DUNNAWAY RD	SEMORA	NC	27343	101 DUNNAWAY RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-6	9988-01-35-4849.000	MARTIN, HOWARD T & MARY O	461 ARCHIE CLAYTON RD	ROXBORO	NC	27574	461 ARCHIE CLAYTON RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-7	9988-01-36-6080.000	LEWIS L MICHAEL	395 ARCHIE CLAYTON RD	ROXBORO	NC	27574	ARCHIE CLAYTON RD 395	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-9	9988-01-05-4153.000	ROLISON, ROBERT SCOTT	571 DAISY THOMPSON RD	ROXBORO	NC	27574	571 DAISY THOMPSON RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA
PRW-10	9988-00-14-0931.000	SANFORD, CHAD L	556 DAISY THOMPSON RD	ROXBORO	NC	27574	556 DAISY THOMPSON RD	OCCUPIED RESIDENCE; NO WELL STRUCTURE OBSERVED; NO MUNICIPAL WATER LINES IN AREA

Notes: Map Well ID # refers to well number shown on the Water Well Survey Map. Parcel ID, owner, and address information were obtained from the Person County, North Carolina website (<http://www.personcounty.net/index.aspx?page=138>).
 - Possible water well. Water line not available. No well observed.
 - Observed water well.

**TABLE 2
PARCEL OWNERSHIP INFORMATION WITHIN SURVEY RADIUS
ROXBORO STEAM ELECTRIC PLANT
DUKE ENERGY PROGRESS, INC., SEMORA, NORTH CAROLINA**

PARCEL ID NUMBER	PROPERTY OWNER	PROPERTY ADDRESS	OWNER ADDRESS
9989-01-16-5827.000	CERTAINTeed GYPSUM NC INC	921 A SHORE RD	921 A SHORE RD, SEMORA NC 27343
9989-01-07-2923.000	ROYSTER MARTHA ESTATE	224 MARTHA ROYSTER RD	1665 MONROE AVE APT 1B, BRONX NY 10457
9989-01-07-3790.000	LONG SALLIE DELORIS	MARTHA ROYSTER RD	1665 MONROE AVE APT 1B, BRONX NY 10457
9989-01-28-0462.000	R&S CARVER PROP & CLAYTON JANI	SHORE ACRES DR	1220 MORTON PULLIAM RD, ROXBORO NC 27574
9989-01-18-0104.000	CLAYTON JANIE C & OTHERS	COW PASTURE LN	424 ROY CARVER RD, SEMORA NC 27343
9989-01-08-8291.000	TAVA INC	COW PASTURE LN	1990 LONGS STORE RD, ROXBORO NC 27574
9989-04-64-3857.000	HUGHES PHILLIP	MCGHEES MILL RD	4165 MCGHEES MILL RD, SEMORA NC 27343
9989-04-63-4241.000	HINTON ADA E & FREDERICK H	MCGHEES MILL RD	255 OAK GROVE MOUNT ZION RD, ROXBORO NC 27574
9989-04-64-6308.000	HUGHES DENISE D	MCGHEES MILL RD	5519 SPINDLEWOOD CT, DURHAM NC 27703
9989-04-63-6998.000	HUGHES PHILLIP	MCGHEES MILL RD 4165	4165 MCGHEES MILL RD,SEMORA NC27343
9989-04-62-0379.000	BENTLEY PHILLIP ANDREW	MCGHEES MILL RD	3781 MCGHEES MILL RD, SEMORA NC 27343
9989-04-62-5459.000	DEAL OF PERSON LLC	3893 MCGHEES MILL RD	34 LOCHRIDGE DR, ROXBORO NC 27573
9989-04-62-5218.000	DAVIS LUCY B	3853 MCGHEES MILL RD	3853 MCGHEES MILL RD, SEMORA NC 27343
9989-04-52-9154.000	BENTLEY PHILLIP ANDREW	3781 MCGHEES MILL RD	3781 MCGHEES MILL RD, SEMORA NC 27343
9989-04-52-5074.000	CUNNINGHAM GLADYS W	156 THE JOHNSON LN	156 THE JOHNSON LN, SEMORA NC 27343
9989-04-51-8907.000	CARTER ANGIE	135 THE JOHNSON LN	135 THE JOHNSON LN, SEMORA NC 27343
9989-04-61-0818.000	CUNNINGHAM GLADYS W	156 THE JOHNSON LN	156 THE JOHNSON LN, SEMORA NC 27343
9989-04-61-1903.000	CHANDLER WALLACE	65 THE JOHNSON LN	65 THE JOHNSON LN, SEMORA NC 27343
9989-04-61-3835.000	JOHNSON BETTY SUSIE	3749 MCGHEES MILL RD	3749 MCGHEES MILL RD, SEMORA NC 27343
9989-04-61-0224.000	KELLY EARL CLYDE	MCGHEES MILL RD 3617	PO BOX 84,SEMORA NC27343
9989-04-60-9846.000	MCCAIN MILLIE EST	MCGHEES MILL RD	6080 LEASBURG RD,ROXBORO NC27574
9989-04-61-3029.000	GARLAND LORRAINE	MCGHEES MILL RD	315 NICHOLS AVE,ROXBORO NC27573
9989-04-60-1882.000	TUCK MATT L	MCGHEES MILL RD 3558	3558 MCGHEES MILL RD,SEMORA NC27343
9989-04-51-9175.000	FIFE SUE H	3599 MCGHEES MILL RD	3599 MCGHEES MILL RD, SEMORA NC 27343
9989-04-51-8091.000	WILLIAMS BARRY	3579 MCGHEES MILL RD	3579 MCGHEES MILL RD, SEMORA NC 27343
9989-04-50-7893.000	MCCAIN JOHN N	MCGHEES MILL RD	3535 MCGHEES MILL RD,SEMORA NC27343

**TABLE 2
PARCEL OWNERSHIP INFORMATION WITHIN SURVEY RADIUS
ROXBORO STEAM ELECTRIC PLANT
DUKE ENERGY PROGRESS, INC., SEMORA, NORTH CAROLINA**

PARCEL ID NUMBER	PROPERTY OWNER	PROPERTY ADDRESS	OWNER ADDRESS
9989-04-50-2109.000	PURYEAR KEVIN PROPERTIES LLC	DUNNAWAY RD	PO BOX 1117, ROXBORO, NC 27573
9988-02-59-1781.000	ESTES LARRY THOMAS & FAYE	3291 MCGHEES MILL RD	3291 MCGHEES MILL RD, SEMORA NC 27343
9989-04-50-4836.000	WALKER WILLIAM & WENDY	MCGHEES MILL RD 3469	3469 MCGHEES MILL RD, SEMORA NC 27343
9989-03-40-0170.000	PURYEAR KEVIN PROPERTIES LLC	DUNNAWAY RD	PO BOX 1117, ROXBORO, NC 27573
9989-03-40-3472.000	PURYEAR KEVIN PROPERTIES LLC	241 DUNNAWAY RD	PO BOX 1117, ROXBORO, NC 27573
9988-01-39-1733.000	WINSTEAD WILLIE ESTATE	399 DUNNAWAY RD	4037 MORTON PULLIAM RD, ROXBORO NC 27574
9988-01-39-2741.000	WINSTEAD WAYNE B	381 DUNNAWAY RD	381 DUNNAWAY RD, SEMORA, NC 27343
9988-01-39-4609.000	JORDAN FRANK & BETTIE	DUNNAWAY RD	714 LONGS STORE RD, ROXBORO, NC 27574
9988-01-39-8619.000	JEFFERS HOWARD JR	285 DUNNAWAY RD	285 DUNNAWAY RD, SEMORA NC 27343
9988-01-39-9669.000	JEFFERS HOWARD JR & OLLIE	DUNNAWAY RD	285 DUNNAWAY RD, SEMORA NC 27343
9988-01-49-1710.000	JEFFERS DENNIS W & SHONDA BUMP	225 DUNNAWAY RD	156 MAGGIE LN, ROXBORO, NC 27573
9988-01-49-5741.000	WELBORNE ENIDA P & ANTHONY M	DUNNAWAY RD	5139 RANDLEMAN RD, GREENSBORO NC 27406
9988-01-49-7632.000	FARMAN DAVID & JANIE	101 DUNNAWAY RD	101 DUNNAWAY RD, SEMORA NC 27343
9988-01-49-8582.000	CURRIE MAGGIE J	67 DUNNAWAY RD	67 DUNNAWAY RD, SEMORA NC 27343
9988-01-15-2315.000	THOMPSON SIDNEY JACOB	DAISY THOMPSON RD	1431 BARKER RD, MILTON NC 27305
9988-01-05-4153.000	ROLISON ROBERT SCOTT	571 DAISY THOMPSON RD	571 DAISY THOMPSON RD, ROXBORO, NC 27574
9978-04-91-8682.000	WAGSTAFF FARMS LLC	5310 SEMORA RD	31 REAMS AVE, ROXBORO NC 27573
9978-02-75-6424.000	RUDDER JEFFERSON	SEMORA RD	126 NORTHMONT CT, DANVILLE VA 24540
9978-02-66-1992.000	TBS REALTY INC	SEMORA RD 7275	3808 BURLINGTON RD, ROXBORO NC 27574
9978-02-56-5922.000	PERSON COUNTY NORTH CAROLINA	SEMORA RD 7391	304 S MORGAN ST RM 219, ROXBORO NC 27573
9989-04-64-9710.000	CRUTCHFIELD, SARAH D & MICHAEL	4291 MCGHEES MILL RD	4291 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-64-8345.000	HUGHES, DENISE D	2437 MCGHEES MILL RD	5519 SPINDLEWOOD CT, DURHAM, NC 27703
9989-04-74-0468.000	HUGHES, ANTOINETTE & J BAILEY	4268 MCGHEES MILL RD	4268 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-74-0333.000	HESTER, EVA JEAN LIFE ESTATE	4236 MCGHEES MILL RD	4236 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-74-0104.000	ZIMMERMAN, CARROLL MERRITT L/ES	4180 MCGHEES MILL RD	4180 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-63-9887.000	HUGHES, LEX LEWIS & RACHEL	4164 MCGHEES MILL RD	4164 MCGHEES MILL RD, SEMORA, NC 27343

**TABLE 2
PARCEL OWNERSHIP INFORMATION WITHIN SURVEY RADIUS
ROXBORO STEAM ELECTRIC PLANT
DUKE ENERGY PROGRESS, INC., SEMORA, NORTH CAROLINA**

PARCEL ID NUMBER	PROPERTY OWNER	PROPERTY ADDRESS	OWNER ADDRESS
9989-04-73-0609.000	CRAWLEY, MAE CHAMBERS LIFE EST	4114 MCGHEES MILL RD	4114 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-73-0508.000	CRAWLEY, CHRISTOPHER L	4094 MCGHEES MILL RD	4094 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-63-9590.000	MAJORS, SANDRA C	4072 MCGHEES MILL RD	4072 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-82-4547.000	5G LLC	4034 MCGHEES MILL RD	2309 EASY HORSE TRL, WAKE FOREST, NC 27587
9989-04-63-9166.000	5G LLC	4014 MCGHEES MILL RD	2309 EASY HORSE TRL, WAKE FOREST, NC 27587
9989-04-62-9926.000	POWELL, JOHN L & GLADYS	3962 MCGHEES MILL RD	9215 NC HIGHWAY 49, ROXBORO, NC 27574
9989-04-62-9806.000	JACKSON, ANNIE M & OTHERS	MCGHEES MILL RD	1801 ARAGONA BLVD, FORT WASHINGTON, MD 20744
9989-04-62-8666.000	FAULKNER, ELIJAH	3924 MCGHEES MILL RD	3924 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-62-8437.000	POOLE, LLOYD JR	3892 MCGHEES MILL RD	284 TANGLEWOOD CIR, ROXBORO, NC 27573
9989-04-62-7287.000	RUSSELL, NOEL R	3854 MCGHEES MILL RD	3854 MCGHEES MILL RD, SEMORA, NC 27343
9989-04-62-7168.000	MCDANIEL, PEGGY D & DONALD W JR	3830 MCGHEES MILL RD	1790 MCGHEES MILL RD, ROXBORO, NC 27574
9989-04-61-6844.000	CRAWLEY, MICKEY RAYE	3770 MCGHEES MILL RD	3770 MCGHEES MILL RD, SEMORA, NC 27343
9988-02-59-8579.000	GRAY, BOBBY R LIFE ESTATE	3773 MCGHEES MILL RD	3276 MCGHEES MILL RD, SEMORA, NC 27343
9988-01-36-0728.000	CLAYTON, RANDY WILKINS	520 ARCHIE CLAYTON RD	1027 COUNTRY CLUB RD, ROXBORO, NC 27574
9988-01-36-5373.000	BARTS, EUGENE	462 ARCHIE CLAYTON RD	462 ARCHIE CLAYTON RD, ROXBORO, NC 27574
9988-01-36-7254.000	LEWIS, LARRY M & JOAN T	430 ARCHIE CLAYTON RD	395 ARCHIE CLAYTON RD, ROXBORO, NC 27574
9988-01-35-1957.000	WOOD, LEE JR & GAIL	507 ARCHIE CLAYTON RD	507 ARCHIE CLAYTON RD, ROXBORO, NC 27574
9989-01-08-7367.000	LANGLEY, MARY & MCKINNEY DEBRA	137 COW PASTURE LN	137 COW PASTURE LN, SEMORA, NC 27343
9989-04-74-1639.000	CHAMBERS, DONALD L & DELLA M	4300 MCGHEES MILL RD	4300 MCGHEES MILL RD, SEMORA, NC 27343
9988-01-35-4849.000	MARTIN, HOWARD T & MARY O	461 ARCHIE CLAYTON RD	461 ARCHIE CLAYTON RD, ROXBORO, NC 27574
9988-01-36-6080.000	LEWIS L MICHAEL	ARCHIE CLAYTON RD 395	395 ARCHIE CLAYTON RD, ROXBORO, NC 27574
9988-00-14-0931.000	SANFORD, CHAD L	556 DAISY THOMPSON RD	556 DAISY THOMPSON RD, ROXBORO, NC 27574

Notes:

Parcel ID, owner and address information were obtained from Person County, North Carolina website (<http://www.personcounty.net/index.aspx?page=138>).

Prepared by: RBI Checked by: TDP

APPENDIX A

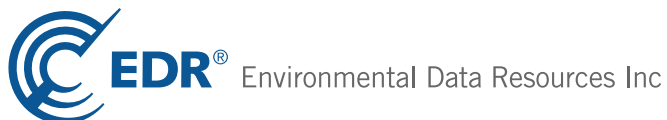
EDR REPORT

Duke Energy - Roxboro

1700 Dunnaway Rd.
Roxboro, NC 27574

Inquiry Number: 3887591.1s
March 21, 2014

The EDR GeoCheck® Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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with any questions or comments.

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GEOCHECK® - PHYSICAL SETTING SOURCE REPORT

TARGET PROPERTY ADDRESS

DUKE ENERGY - ROXBORO
1700 DUNNAWAY RD.
ROXBORO, NC 27574

TARGET PROPERTY COORDINATES

Latitude (North):	36.4689 - 36° 28' 8.04"
Longitude (West):	79.0743 - 79° 4' 27.48"
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	672539.2
UTM Y (Meters):	4037480.5
Elevation:	503 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	36079-D1 OLIVE HILL, NC
Most Recent Revision:	1994

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

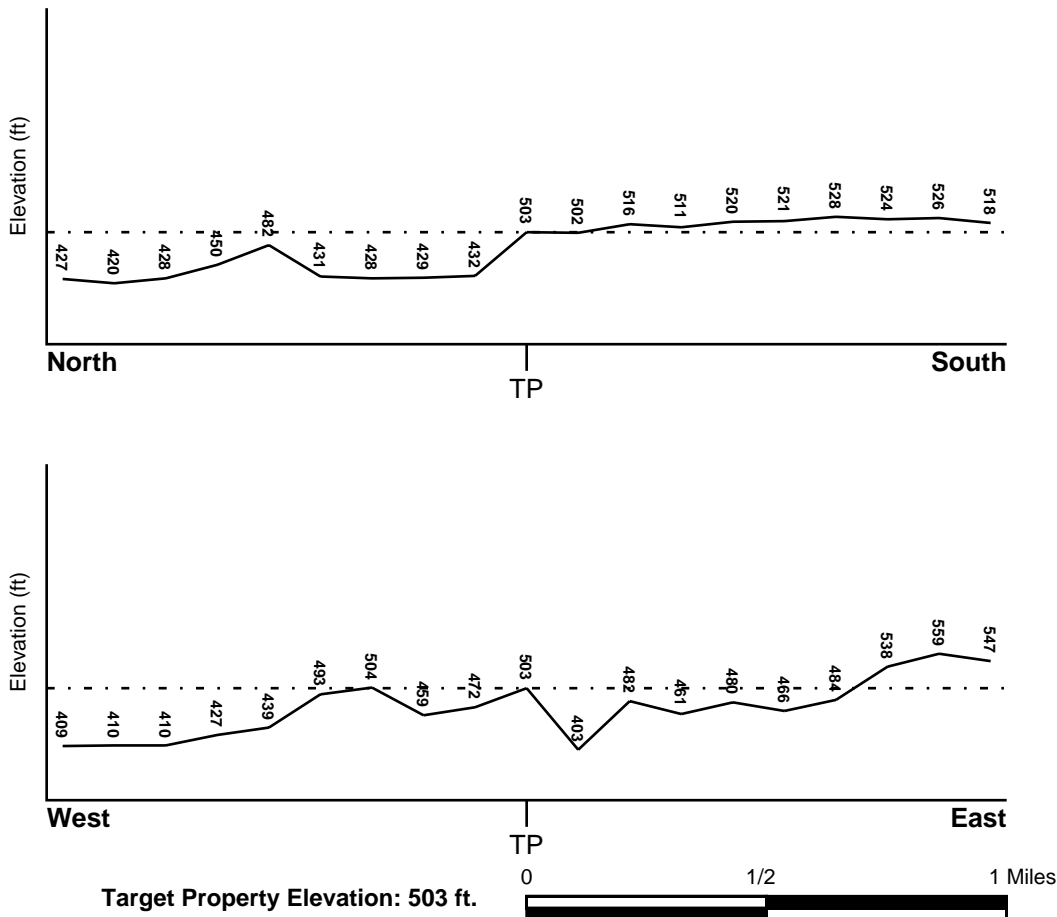
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> PERSON, NC	<u>FEMA Flood Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	37145C - FEMA DFIRM Flood data
Additional Panels in search area:	Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> OLIVE HILL	<u>NWI Electronic Data Coverage</u> YES - refer to the Overview Map and Detail Map
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HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Paleozoic
System: Pennsylvanian
Series: Felsic paragneiss and schist
Code: mm1 (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Metamorphic Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: WILKES
Soil Surface Texture: fine sandy loam
Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.
Hydric Status: Soil does not meet the requirements for a hydric soil.
Corrosion Potential - Uncoated Steel: MODERATE
Depth to Bedrock Min: > 10 inches
Depth to Bedrock Max: > 20 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	6 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 6.00 Min: 2.00	Max: 6.50 Min: 5.10
2	6 inches	13 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.80 Min: 6.10
3	13 inches	48 inches	weathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: sandy loam
loam
loamy sand
clay loam

Surficial Soil Types: sandy loam
loam
loamy sand
clay loam

Shallow Soil Types: clay loam
clay
loam
silt loam
sandy clay loam

Deeper Soil Types: sandy loam
sandy clay loam
fine sandy loam

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	1.000
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	NC0273409	1/2 - 1 Mile NNE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	NC2000000009826	1/2 - 1 Mile SW

OTHER STATE DATABASE INFORMATION

NORTH CAROLINA NATURAL HERITAGE ELEMENT OCCURRENCES

<u>ID</u>	<u>Class</u>
NC50011604	Plants

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION GAME LANDS DATABASE

Site Name
NC30000019
NC30000021
NC30000022
NC30000024

PHYSICAL SETTING SOURCE MAP - 3887591.1s



- | | | |
|--|--|---------------------------|
| County Boundary | Groundwater Flow Direction | Wildlife Areas |
| Major Roads | Indeterminate Groundwater Flow at Location | Natural Areas |
| Contour Lines | Groundwater Flow Varies at Location | Rare & Endangered Species |
| Power transmission lines | 100-year flood zone | |
| Earthquake epicenter, Richter 5 or greater | 500-year flood zone | |
| Water Wells | National Wetland Inventory | |
| Public Water Supply Wells | | |
| Cluster of Multiple Icons | | |

SITE NAME: Duke Energy - Roxboro
 ADDRESS: 1700 Dunnaway Rd.
 Roxboro NC 27574
 LAT/LONG: 36.4689 / 79.0743

CLIENT: SynTerra
 CONTACT: Richard Jacobs
 INQUIRY #: 3887591.1s
 DATE: March 21, 2014 11:22 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1
SW **NC WELLS** **NC2000000009826**
1/2 - 1 Mile
Higher

Pwsidentif: NC0273431
 System nam: WOODLAND ELEM SCHOOL
 Pws type: NTNC
 County: PERSON
 City: ROXBORO
 Primary so: GW
 Water type: GW
 Facility n: WELL #3
 Facility a: S03
 Latitude m: 36.462214
 Longitude : -79.082685
 Availavili: A
 Well depth: 280
 Well dep 1: FT
 Owner name: PERSON COUNTY SCHOOLS_0273407
 Site id: NC2000000009826

2
NNE **FRDS PWS** **NC0273409**
1/2 - 1 Mile
Lower

Pwsid: NC0273409 Epa region: 04
 State: NC County: Person
 Pws name: ROXBORO STEAM PLANT
 Population Served: 500 Pwssvconn: 7
 PWS Source: Surface_water
 Pws type: NTNCWS
 Status: Active Owner type: Private
 Facility id: 5652
 Facility name: TREATMENT_PLT_ROXBORO STM WTP
 Facility type: Treatment_plant Treatment process: sedimentation
 Treatment objective: iron removal
 Contact name: ROWLAND, CECIL E
 Original name: ROWLAND, CECIL E
 Contact phone: 336-599-1174 Contact address1: 1700 DUNNAWAY RD
 Contact address2: Not Reported
 Contact city: SEMORA
 Contact zip: 27343

Facility id: 1176
 Facility name: STORAGE_GROUND_1
 Facility type: Storage Treatment process: sludge treatment
 Treatment objective: iron removal

Facility id: 50722
 Facility name: DISTRIBUTION SYSTEM
 Facility type: Distribution_system_zone Treatment process: ph adjustment, pre
 Treatment objective: iron removal

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	ph adjustment, pre
Treatment objective:	iron removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	coagulation
Treatment objective:	inorganics removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	coagulation
Treatment objective:	inorganics removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	coagulation
Treatment objective:	inorganics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	coagulation
Treatment objective:	inorganics removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	coagulation
Treatment objective:	inorganics removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	filtration, pressure sand
Treatment objective:	inorganics removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	filtration, pressure sand
Treatment objective:	inorganics removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	filtration, pressure sand
Treatment objective:	inorganics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	filtration, pressure sand
Treatment objective:	inorganics removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	filtration, pressure sand
Treatment objective:	inorganics removal		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	flocculation
Treatment objective:	inorganics removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	flocculation
Treatment objective:	inorganics removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	flocculation
Treatment objective:	inorganics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	flocculation
Treatment objective:	inorganics removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	flocculation
Treatment objective:	inorganics removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	sedimentation
Treatment objective:	inorganics removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	sedimentation
Treatment objective:	inorganics removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	sedimentation
Treatment objective:	inorganics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	sedimentation
Treatment objective:	inorganics removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	sedimentation
Treatment objective:	inorganics removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	sludge treatment
Treatment objective:	inorganics removal		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	sludge treatment
Treatment objective:	inorganics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	sedimentation
Treatment objective:	manganese removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	sedimentation
Treatment objective:	manganese removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	sludge treatment
Treatment objective:	manganese removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	sludge treatment
Treatment objective:	manganese removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	sludge treatment
Treatment objective:	manganese removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	sludge treatment
Treatment objective:	manganese removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	sludge treatment
Treatment objective:	manganese removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	flocculation
Treatment objective:	disinfection by-products control		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	flocculation
Treatment objective:	disinfection by-products control		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	flocculation
Treatment objective:	disinfection by-products control		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	flocculation
Treatment objective:	disinfection by-products control		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	flocculation
Treatment objective:	disinfection by-products control		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	sedimentation
Treatment objective:	disinfection by-products control		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	sedimentation
Treatment objective:	disinfection by-products control		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	sedimentation
Treatment objective:	organics removal		
Facility id:	5652		
Facility name:	TREATMENT_PLT_ROXBORO STM WTP		
Facility type:	Treatment_plant	Treatment process:	sedimentation
Treatment objective:	organics removal		
Facility id:	1176		
Facility name:	STORAGE_GROUND_1		
Facility type:	Storage	Treatment process:	ph adjustment, pre
Treatment objective:	organics removal		
Facility id:	3117		
Facility name:	STORAGE_HYDRO_1		
Facility type:	Storage	Treatment process:	ph adjustment, pre
Treatment objective:	organics removal		
Facility id:	39228		
Facility name:	HYCO LAKE		
Facility type:	Intake	Treatment process:	ph adjustment, pre
Treatment objective:	organics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	ph adjustment, pre
Treatment objective:	organics removal		
Facility id:	50722		
Facility name:	DISTRIBUTION SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	ph adjustment
Treatment objective:	corrosion control		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Facility id: 5652
 Facility name: TREATMENT_PLT_ROXBORO STM WTP
 Facility type: Treatment_plant Treatment process: ph adjustment
 Treatment objective: corrosion control

Facility id: 1176
 Facility name: STORAGE_GROUND_1
 Facility type: Storage Treatment process: ph adjustment, post
 Treatment objective: corrosion control

Facility id: 3117
 Facility name: STORAGE_HYDRO_1
 Facility type: Storage Treatment process: ph adjustment, post
 Treatment objective: corrosion control

PWS ID: NC0273409
 Date Initiated: 6405 Date Deactivated: Not Reported
 PWS Name: ROXBORO STEAM PLANT
 ROXBORO, NC 27573

Addressee / Facility: System Owner/Responsible Party
 DR G J OLIVER OR MANAGER NOW
 PO BOX 1551--CPB 3A2
 RALEIGH, NC 27602

Addressee / Facility: System Owner/Responsible Party
 CAROLINA POWER & LIGHT CO
 PO BOX 1551--CPB 3A2
 RALEIGH, NC 27602

Facility Latitude: 36 28 50 Facility Longitude: 079 04 10
 Facility Latitude: 36 23 36 Facility Longitude: 078 58 59
 City Served: ROXBORO
 Treatment Class: Treated Population: 00000250

Violations information not reported.

ENFORCEMENT INFORMATION:

System Name: ROXBORO STEAM PLANT
 Violation Type: MCL, Average
 Contaminant: DI (2-ETHYLHEXYL) ADIPATE
 Compliance Period: 1995-01-01 - 1995-03-31
 Violation ID: 9541524
 Enforcement Date: 1995-03-27 Enf. Action: State Formal NOV Issued

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

			NC_WILD	NC30000019
Site Name:	Hyco			
Owner:	Carolina Power & Light			
Site Type:	Archery Zone	Acres:	758.943176269531	
Status:	PRV	County:	PERSON	

			NC_WILD	NC30000021
Site Name:	Hyco			
Owner:	Carolina Power & Light			
Site Type:	Archery Zone	Acres:	310.483093261719	
Status:	PRV	County:	PERSON	

			NC_WILD	NC30000022
Site Name:	Hyco			
Owner:	Carolina Power & Light			
Site Type:	Restricted Firearms Zone	Acres:	183.970397949219	
Status:	PRV	County:	PERSON	

			NC_WILD	NC30000024
Site Name:	Hyco			
Owner:	Carolina Power & Light			
Site Type:	Game Land	Acres:	558.192077636719	
Status:	PRV	County:	PERSON	

			NC_NHEO	NC50011604
GIS ID:	113466			
Classification by Type:	Plants			
Occurrence Status:	X			

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: NC Radon

Radon Test Results

Num Results	Avg pCi/L	Min pCi/L	Max pCi/L
2	0.95	0.8	1.1

Federal EPA Radon Zone for PERSON County: 3

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for PERSON COUNTY, NC

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Department of Environment & Natural Resources

Telephone: 919-733-2090

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

North Carolina Public Water Supply Wells

Source: Department of Environmental Health

Telephone: 919-715-3243

OTHER STATE DATABASE INFORMATION

NC Natural Areas: Significant Natural Heritage Areas

Source: Center for Geographic Information and Analysis

Telephone: 919-733-2090

A polygon coverage identifying sites (terrestrial or aquatic that have particular biodiversity significance.

A site's significance may be due to the presence of rare species, rare or high quality natural communities, or other important ecological features.

NC Game Lands: Wildlife Resources Commission Game Lands

Source: Center for Geographic Information and Analysis

Telephone: 919-733-2090

All publicly owned game lands managed by the North Carolina Wildlife Resources Commission and as listed in Hunting and Fishing Maps.

NC Natural Heritage Sites: Natural Heritage Element Occurrence Sites

Source: Center for Geographic Information and Analysis

Telephone: 919-733-2090

A point coverage identifying locations of rare and endangered species, occurrences of exemplary or unique natural ecosystems (terrestrial or aquatic), and special animal habitats (e.g., colonial waterbird nesting sites).

RADON

State Database: NC Radon

Source: Department of Environment & Natural Resources

Telephone: 919-733-4984

Radon Statistical and Non Statistical Data

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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APPENDIX B
EXAMPLE SURVEY QUESTIONNAIRE



Harry K. Sideris
Senior Vice-President
Environment, Health & Safety
526 South Church Street:
Mail Code EC13WS
Charlotte, North Carolina 28202

October 3, 2014

Recipient's Full Name
Recipient's Company Name
Street Address
City, State ZIP

Subject: Drinking Water Supply Survey within Half-Mile Radius of [Plant Name]

Dear Mr. / Ms. / Mrs. / Dr. Name:

Duke Energy is conducting comprehensive site assessments at operating and retired coal-fired power plants across the state, as required by the Coal Ash Management Act of 2014 recently passed by the North Carolina legislature. One aspect of these assessments seeks to identify private water supply wells within a half-mile radius of the [Plant name].

You are receiving this letter because county real estate records indicate that you own property within this half-mile radius; however, it does not mean that your property is at an environmental risk. We need your assistance to provide information about your property for the purpose of completing the comprehensive site assessment.

Duke Energy has contracted with HDR Engineering, Inc. (HDR) to assist in collecting this site information. We ask that you complete the enclosed survey and return in the enclosed, pre-paid envelope by **October 20, 2014**.

As part of Duke Energy's commitment to protecting the environment, the company regularly monitors the groundwater around the plant and submits all results to the North Carolina Department of Environment and Natural Resources (NCDENR), the state agency responsible for groundwater quality. The information you provide in response to this well survey will be compiled with information from other neighbors and forwarded to NCDENR. NCDENR will use these survey responses along with technical information about local geology and groundwater to develop future groundwater monitoring requirements.

Thank you for your assistance. If you have any questions, please contact Rhonda Isham, Public Involvement Coordinator for SynTerra, at 864-527-4657.

Sincerely,

Harry Sideris
Environmental, Health, and Safety

Enclosures

WATER SUPPLY WELL INFORMATION

Please provide the following information (to the best of your knowledge)

Return the survey via the enclosed stamped envelope by **October 20, 2014**

Questions please contact Rhonda Isham, SynTerra
(864) 527-4657

Name and telephone number of the person completing the survey:

Name: _____

Telephone number (optional): _____

Address(es) of properties in the area that you own:

What is the source of your drinking water (check all that apply)?

County Water Well Other (explain below)

Is there a well(s) on this property(s)? YES NO

If the answer is 'NO', please disregard the remaining questions, and return the survey in the enclosed stamped envelope.

If the answer is "YES" to the above question, please proceed to the back page of this survey.

Address of property with well:

What is the well(s) used for? (check all that apply)

- Drinking Irrigation Swimming Pool Water Livestock
- Well Not In Use Other (specify: _____)

How many residences are connected to the well(s) – List address(es) below:

Please provide any of the following information which is readily available. (The information may be documented on a tag on your well.)

Well depth(s): _____ Date well(s) installed: _____

Casing depth of the well(s): _____ Screen interval of the well(s): _____

Additional well information: _____

In the space below, describe or draw the location of the water supply well on your property. (i.e., near mailbox, front yard)

Please return this survey in the enclosed envelope by **October 20, 2014**. Thank you.

Questions – contact Rhonda Isham, SynTerra, at (864) 527-4657.