400801

RECEIVED

JUL 01 2020

SITE ASSESSMENT, REMEDIATION, & REVITALIZATION

synTerra

TRANSMITTAL

SCANNED

148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601

(864) 421-9999
FAX (864) 421-9909

TO: Mr. Greg Cassidy
Brownfields Project Manager
SCDHEC
Division of Site Assessment,
Remediation, and Revitalization
Bureau of Land and Waste Mgmt.
2600 Bull Street
Columbia, SC 29201

DATE: June 26, 2020
FROM: Todd Plating
PROJECT NAME: Former Bramlette Manufactured Gas Plant
PROJECT NUMBER: 1026.801.06

Cc:

☒ **ENCLOSED** ☐ **UNDER SEPARATE COVER**

DELIVERY METHOD

☐ US MAIL ☒ OVERNIGHT ☐ COURIER ☐ OTHER (Via Email)

ITEMS

☒ ORIGINALS ☐ PRINTS ☐ SAMPLES ☐ SPECIFICATIONS

☐ VENDOR ☒ ELECTRONIC FILES ☐ OTHER ______

Item No.	Rev. No.	Copies	Description	Action*
1	0	2	Remedial Investigation Report Former Bramlette MGP Site – Report, Figures Tables	FYU
2	0	2	Remedial Investigation Report Former Bramlette MGP Site - Appendices	FYU
3	0	2	Remedial Investigation Report Former Bramlette MGP Site (Digital Copy on CD)	FYU

***ACTION SCHEDULE:**

NET NO EXCEPTIONS TAKEN
MCN MAKE CORRECTIONS NOTED
R REJECTED
FYU FOR YOUR USE

IFA ISSUED FOR APPROVAL
IFC ISSUED FOR CONSTRUCTION
IFR ISSUED FOR REVIEW
IFI ISSUED FOR INFORMATION

BY: [signature]

P:\Duke Energy Carolinas\800.Duke Remediation Group\01.Bramlette MGP\2020 RI Report\REVISION 1\Transmittal Greg Cassidy 2020_06_26.docx

76

400801

DUKE ENERGY®

PM Copy
Scanned

526 South Church Street
Mail Code EC13K
Charlotte, NC 28202

o 980 373 2663
c 704 497 3627
f 000 000 0000

Jun. 26, 2020

Mr. Greg Cassidy
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

RECEIVED
JUL 01 2020
SITE ASSESSMENT, REMEDIATION, & REVITALIZATION

Subject: Remedial Investigation Report
Former Bramlette Manufactured Gas Plant
400 East Bramlette Road, Greenville SC
VCC 16-5857-RP

Dear Cassidy:

Please find enclosed two hard copies and one electronic copy on compact disk of the referenced report. The report is being submitted in accordance with Section 3.B of the referenced voluntary clean-up contract. As previously discussed, some planned RI activities were delayed due to COV-19 and are currently on-going. The results of those activities will be submitted under separate cover.

If you have any questions, please contact me at (980) 373-2663 or at Richard.powell2@duke-energy.com.

Sincerely,

Richard E. Powell

Richard E. Powell, P.G.
Lead Environmental Specialist

cc: Kevin Boland, CSXT
Daniel Schmitt, Esq., CSXT
Ty Houck, Greenville County
William W. Brown, Legacy School Properties, LLC

76

400801

CD Scanned
PM Copy

REMEDIAL INVESTIGATION REPORT

FORMER BRAMLETTE MGP SITE

REPORT – FIGURES - TABLES

JUNE 2020

PREPARED FOR:

DUKE ENERGY CAROLINAS, LLC

PREPARED BY:

synTerra

www.synterracorp.com

76

REMEDIAL INVESTIGATION REPORT

FORMER BRAMLETTE MGP SITE

JUNE 2020

PREPARED FOR

DUKE ENERGY CAROLINAS

DUKE ENERGY CAROLINAS, LLC

SOUTH CAROLINA SynTerra Corporation No. C00623 CERTIFICATE OF AUTHORIZATION

TODD DAVID PLATING REGISTERED NO. 2620 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

Todd D. Plating, SC PG 2620
Principal Geologist/Sr. Project Manager

Michael Mastbaum
Sr. Geologist

EXECUTIVE SUMMARY

SynTerra has prepared this Remedial Investigation (RI) Report on behalf of Duke Energy Carolinas, LLC. (Duke Energy). This report pertains to the property located at 400 East Bramlette Road, Greenville, SC, [Parcel 1, location of the former Bramlette Road manufactured gas plant (MGP)] and four surrounding properties (Parcels 2 through 5). This report has been prepared in accordance with the Voluntary Cleanup Contract (VCC) between the South Carolina Department of Health and Environmental Control (SCDHEC) and Duke Energy, VCC 16-5857-RP executed on July 29, 2016.

This RI report provides a summary of investigation information collected after source removal at the MGP. The assessment information indicates additional data is needed to determine the extent of impacts remaining in sediment and soil associated with the former drainage ditches. Also, additional information is needed to determine the vertical extent of impacted groundwater. A work plan will be developed to address the identified data gaps prior to development of a Feasibility Study work plan.

Background and Site Information
Gas was manufactured at the Bramlette Road MGP (Parcel 1) from 1917 to 1952. The MGP produced mostly coal gas (approximately 5.5 billion cubic feet), in addition to some (approximately 1 percent) coal water gas (CWG) beginning in 1945. Coal tar and CWG tar (approximately 4 million gallons) were produced as a marketable byproduct from 1922 to 1952. Volatile organic compounds (VOC) and semivolatile organic compounds (SVOC) associated with coal tar and CWG tar are the subject of this RI.

Parcels 1-5 (Site) encompass approximately 30 acres. Topography at the Site is relatively flat and low-lying. The majority of the Site, including Parcels 2, 3, 4, and 5, is located within the 100-year flood plain of the Reedy River, which bounds the Site to the west. Surface water features within and adjacent to the Site include man-made drainage ditches, jurisdictional wetlands, and the Reedy River. Since most of the Site is located within a 100-year flood plain, the drainage ditches are considered an important aspect of the conceptual site model (CSM).

Potential receptors associated with the Site include groundwater use, surface water bodies (including jurisdictional wetlands), and neighboring properties such as Legacy Charter Elementary School (Legacy Elementary) and the Swamp Rabbit Trail.

RI Activities
RI investigation activities began in 1995 when assessment of the unpermitted Vaughn Landfill, located on CSX Transportation (CSXT) property, resulted in the observation of

tar-like material and constituents potentially related to MGP operations. From 1996 to 2016, Duke Energy conducted numerous investigations and an interim corrective action that removed approximately 61,000 tons of soil and debris affected by former MGP operations. After entering into the VCC in 2016, RI activities on Parcels 1 through 5, along the Swamp Rabbit Trail, and at Legacy Elementary began in June 2017. Investigation activities, which have continued into 2020, include:

- Collection and laboratory analysis of soil, groundwater, surface water, and sediment samples for VOC and SVOC
- Surface and subsurface (down-hole) geophysical surveys
- Passive soil gas surveys
- Non-aqueous phase liquid (NAPL) assessment borings
- Test pit excavations

Geology and Hydrogeology

The Site is located within the Piedmont Physiographic Province, which is generally comprised of a regolith-fractured rock system that includes regolith (unconsolidated material), a transition zone (typically consisting of saprolite and weathered rock fragments), and crystalline bedrock. Fill material is generally present to a depth of 8 feet below land surface (bls) and overlies laterally extensive alluvial deposits that have an average thickness of 11 feet. Saprolite below the alluvium is laterally extensive over the Site and ranges in thickness from approximately 1 foot to 21 feet. The transition zone tends to vary in thickness from absent (southern portion of the Site) to 30 feet.

The groundwater system is characterized as an unconfined, interconnected aquifer system indicative of the Piedmont Physiographic Province. Groundwater is recharged by drainage and rainfall infiltration in the upland areas, followed by discharge to the perennial stream system. Flow in the regolith is that of porous media, while flow in bedrock is primarily within secondary porosity features (fractures).

Groundwater flow is generally to the southwest toward the Reedy River from Parcel 1 and encountered at depths of less than 1 foot to 12.5 feet bls within alluvial and unconsolidated deposits. Calculated seepage velocities for the Site range from 13 feet per year (transition zone) to 295 feet per year (fractured bedrock). Typically constituent migration within groundwater is slower than seepage velocity due to retardation that is influenced by advection, dispersion, adsorption and absorption, and biodegradation. Based on site specific estimates of groundwater flow velocity, groundwater within the shallow and transition zone would take up to approximately 85 years to the approximate distance to the Reedy River. While the seepage velocity may be greater in the fractured bedrock flow system, the flow direction and distance are dependent upon the interconnectedness and orientation of fractures.

Risk Assessments

The baseline Human Health Risk Assessment (HHRA) evaluated the hypothetical exposure of a Site construction worker to constituents in groundwater and identified exposure that may occur through incidental ingestion, dermal contact, and inhalation of vapors. It is assumed that construction workers would use appropriate personal protective equipment - such as gloves, boots, and safety glasses - to limit exposure to environmental media, thereby limiting risks from chemical exposure.

There are no unacceptable risks to a construction worker exposed to soils remaining in the previously excavated area, Parcels 1 and 2. Cumulative cancer risk values do not exceed the Unites States Environmental Protection Agency (USEPA) risk range of $1x10^{-6}$ to $1x10^{-4}$, and non-cancer HQs do not exceed 0.1.

A screening level ecological risk assessment (SLERA) that compared maximum constituent concentrations detected in surface water, sediment and soil to ecological screening values was conducted. No evidence of risks to wildlife based on exposure to surface water was identified. On-Site and off-Site surface water analytical results for all constituents were less than screening values.

Several constituents were detected in soil and sediment samples at concentrations greater than ecological screening values. Those constituents may be evaluated further in a baseline ecological risk assessment.

Findings

The removal action at Parcel 1 successfully reduced risk to exposure to soil, for human health, to a level consistent with the current and foreseeable industrial use (and zoning classification). The modeled construction worker exposure scenario resulted in cancer risk less than $1x10^{-6}$ and a non-cancer hazard quotient less than 0.1.

The general term used for NAPL byproducts produced during the manufacture of gas and coke from MGP processes is coal tar. Forensic analysis of two NAPL samples at the Site identified an unweathered MGP tar produced by a coal carbonization process and a lightly weathered MGP tar produced by a CWG process. Benzene and naphthalene constituents commonly associated with coal tar are used to determine the extent of affected groundwater at the Site.

Constituents in groundwater at the Bramlette MGP are denser than water and therefore migrate downward into the subsurface with distance from the source area (Parcel 1). This is evident at the Site where Parcel 1 groundwater is affected only in the shallow zone. As constituents migrate through Parcels 2 and 3 towards the Reedy River groundwater is affected in the deeper flow zones. Those constituents have not been observed at concentrations greater than SCDHEC maximum contaminant levels (MCL) in monitoring wells located along the Swamp Rabbit Trail immediately upgradient of the Reedy River.

Maximum groundwater concentrations for two of the three compounds detected at concentrations greater than MCLs (benzene and naphthalene) occur in the transition zone. The extent of affected groundwater in the bedrock zone at Parcel 3 is being evaluated using five additional bedrock monitoring wells that have recently been installed.

Concentrations of VOCs and SVOCs in surface water collected from the Reedy River were less than the method detection limit (MDL). Concentrations of VOCs and SVOCs in surface water collected from areas adjacent to the Vaughn Landfill and historical drainage ditches were less than MCLs. Based on the results of surface water sampling, compounds greater than MCLs do not appear to be migrating through surface water in the historical ditch system that transects the Site.

Future Plans

During implementation of the 2019 RIWP-A, field work delays were caused by the onset of a new and highly communicable illness – COVID-19. Operations were halted to protect the health and safety of workers until appropriate protocol and procedures were developed to allow the work to safely continue. Additionally, shallow refusal at historical ditch sediment sampling locations within Parcels 4 and 5 limited the depth of the investigation. In order to complete delineation of the horizontal and vertical extent of MGP-related constituents in affected media the following activities are planned for 2020:

- Installation of 12 additional groundwater monitoring wells
- Completion of a Site-wide groundwater monitoring event (approximately 71 wells)
- Submittal of a workplan to SCDHEC that describes a ditch assessment for delineating extent of VOCs and SVOCs in historical ditches associated with the MGP

- Completion of the ditch assessment in accordance with the approved work plan and after receiving an amended Environmental Right of Entry access agreement

The results of these additional RI activities can be summarized and provided in an addendum to the RI assessment report.

TABLE OF CONTENTS

SECTION **PAGE**

EXECUTIVE SUMMARY **ES-1**
1.0 INTRODUCTION **1-1**
2.0 BACKGROUND INFORMATION **2-1**
2.1 Site Setting and Description 2-1
2.2 Vaughn Landfill 2-2
2.3 MGP Operational History 2-3
2.4 Receptors 2-5
2.5 Interim Removal Action 2-6
3.0 PREVIOUS INVESTIGATIONS **3-1**
4.0 RI ASSESSMENT ACTIVITIES **4-1**
4.1 Parcel 1 and Legacy Elementary 4-1
4.3 Parcel 2 and Swamp Rabbit Trail 4-3
4.4 Parcel 3 and Swamp Rabbit Trail 4-4
4.5 Parcel 4 4-5
4.6 Parcel 5 4-5
5.0 GEOLOGY AND HYDROGEOLOGY **5-1**
5.1 Regional Geology 5-1
5.2 Site Geology 5-1
5.3 Hydrogeology 5-2
5.3.1 Fractured Bedrock Characterization 5-3
5.4 Groundwater 5-4
6.0 REMEDIAL INVESTIGATION RESULTS **6-1**
6.1 Soil Results 6-1
6.1.1 Parcel 1 6-2
6.1.2 Parcel 2 6-2
6.1.3 Parcel 3 6-2
6.2 NAPL Assessment Results 6-3
6.2.1 Parcel 1 6-3
6.2.2 Parcel 2 6-3
6.2.3 Parcel 3 6-4
6.2.4 Parcel 4 6-4
6.2.5 Parcel 5 6-4
6.3 Groundwater Results 6-4

TABLE OF CONTENTS (CONTINUED)

SECTION **PAGE**

6.3.1 Parcel 1 and Legacy Elementary 6-6
6.3.2 Parcel 2 6-7
6.3.3 Parcel 3 6-7
6.3.4 Parcel 4 6-7
6.4 Surface Water and Sheen Results 6-7
6.4.1 Parcel 1 and Legacy Elementary 6-8
6.4.2 Parcel 2 6-8
6.4.3 Parcel 3 6-8
6.4.4 Parcel 4 6-8
6.4.5 Parcel 5 6-8
6.5 Sediment Results 6-9
6.5.1 Parcel 1 and Legacy Elementary 6-9
6.5.2 Parcel 2 6-10
6.5.3 Parcel 3 6-10
6.5.4 Parcel 4 6-10
6.5.5 Parcel 5 6-10
6.6 Investigation Derived Waste Management 6-11
7.0 BASELINE HUMAN HEALTH RISK ASSESSMENT AND SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT 7-1
7.1 Conceptual Site Models 7-1
7.2 Risk Assessment Results 7-2
8.0 FINDINGS AND RECOMMENDATION 8-1
8.1 Summary of Findings 8-1
8.2 Conceptual Site Model 8-1
8.2.1 Source 8-1
8.2.2 Migration Pathways 8-2
8.2.3 Potentially Affected Media 8-3
8.2.4 Nature and Extent 8-3
8.2.5 Risk Exposure 8-3
8.3 Recommendations 8-4
9.0 REFERENCES 9-1

LIST OF FIGURES

Figure 1-1 USGS Topographic Map
Figure 2-1 Site Layout Map
Figure 2-2 Map of Greenville Revised 1921 (Excerpt)
Figure 2-3 Parcel 1 Source Area
Figure 2-4 Half-Mile Radius Receptor Map
Figure 4-1 RIWP-A Source Area Verification Soil Sampling and Passive Gas Survey
Figure 4-2 Visually Observed NAPL in Soil
Figure 5-1 Benzene and Naphthalene Concentrations in Groundwater - Cross-Section A-A′
Figure 5-2 Benzene and Naphthalene Concentrations in Groundwater - Cross-Section B-B′
Figure 5-3 Benzene and Naphthalene Concentrations in Groundwater - Cross-Section C-C′
Figure 5-4 Benzene and Naphthalene Concentrations in Groundwater - Cross-Section D-D′
Figure 5-5 Water Level Map Shallow Flow Zone (Feb 2020)
Figure 5-6 Water Level Map Bedrock Flow Zone (Feb 2020)
Figure 5-7 MGP Source Area (Parcel 1) Hydrographs
Figure 5-8 Vaughn Landfill Area (Parcel 3) Hydrographs
Figure 5-9 Reedy River (Swamp Rabbit Trail) Hydrographs
Figure 6-1 Isoconcentration Map Benzene in Shallow Flow Zone
Figure 6-2 Isoconcentration Map Benzene in Transition Flow Zone
Figure 6-3 Isoconcentration Map Benzene in Bedrock Flow Zone
Figure 6-4 Isoconcentration Map Naphthalene in Shallow Flow Zone
Figure 6-5 Isoconcentration Map Naphthalene in Transition Flow Zone
Figure 6-6 Isoconcentration Map Naphthalene in Bedrock Flow Zone
Figure 8-1 Conceptual Site Model

LIST OF TABLES

Table 5-1	Water Level Measurements and Elevations
Table 5-2	Vertical Hydraulic Gradients
Table 5-3	Horizontal Hydraulic Gradients and Flow Velocities
Table 6-1	Analytical Results Summary – Soil
Table 6-2	NAPL Observations
Table 6-3	Materials Encountered in Test Pits
Table 6-4	Monitoring Well Construction Details
Table 6-5	Slug Test Results
Table 6-6	Analytical Results Summary – Groundwater
Table 6-7	Analytical Results Summary – Surface Water
Table 6-8	Analytical Results Summary – Sheen
Table 6-9	Analytical Results Summary – Sediment

LIST OF APPENDICES

Appendix A	Gas Manufacture at the Bramlette Rd MGP, Greenville, SC
Appendix B	Historical Aerial Photo Interpretation Report - Bramlette Road MGP (1943 - 1960)
Appendix C	Monitoring Well and Soil Boring Logs, Construction Forms, and Abandonment Forms
Appendix D	Groundwater Sampling Logs
Appendix E	GEL Borehole Geophysics Report
Appendix F	Bedrock Characterization Summary
Appendix G	Analytical Laboratory Reports
Appendix H	Geophysical Survey at the Former Bramlette Manufactured Gas Plant
Appendix I	Forensic Analysis of Non-Aqueous Phase Liquids (NAPL) Collected from the Former Bramlette Road Manufactured Gas Plant (MGP) Site
Appendix J	Mann-Kendall Analysis
Appendix K	Evaluation of Sediment Data
Appendix L	Baseline Human Health and Screening Level Ecological Risk Assessment

LIST OF ACRONYMS

µg/L	micrograms per liter
bls	below land surface
C&D	Construction and demolition
CFR	Code of Federal Regulations
COIs	constituents of interest
COPCs	constituents of potential concern
CSM	conceptual site model
CSXT	CSXT Transportation, Inc.
DNAPL	dense non-aqueous phase liquid
Duke Energy	Duke Energy Carolinas, LLC
EM	radio-frequency electromagnetic
EM61	time-domain electromagnetic
FLASH	Flow-Log Analysis of Single Holes
FS	feasibility study
GPR	ground penetrating radar
HPF	heat pulse flowmeter
IDW	investigation derived waste
MCL	maximum contaminant level
MGP	manufactured gas plant
NAPL	non-aqueous phase liquid
OLM	oil-like material
ORNL	Oak Ridge National Laboratory
PAH	polycyclic aromatic hydrocarbons
PIANO	paraffins, isoparaffin, aromatics, naphthenes, and olefins
PID	photoionization detector
RI	remedial investigation
RSLs	November 2019 USEPA Regional Screening Levels
SCDHEC	South Carolina Department of Health and Environmental Control
Site	five parcels (Parcel 1, Parcel 2, Parcel 3, Parcel 4, and Parcel 5) owned by CSXT Transportation, Inc.
SLERA	Screening Level Ecological Risk Assessment
SVOC	semivolatile organic compounds
TLM	tar-like material
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VCC	Voluntary Cleanup Contract

LIST OF ACRONYMS (CONTINUED)

VOC	volatile organic compounds
VURAM	Virginia Unified Risk Assessment Model

1.0 INTRODUCTION

SynTerra has prepared this Remedial Investigation (RI) Report on behalf of Duke Energy Carolinas, LLC. (Duke Energy). This report has been prepared in accordance with the Voluntary Cleanup Contract (VCC) between the South Carolina Department of Health and Environmental Control (SCDHEC) and Duke Energy (VCC 16-5857-RP), executed on July 29, 2016.

The purpose of the RI is to determine the nature and extent of potential effects on the environment as a result of the former Bramlette manufactured gas plant (MGP) operations located at 400 East Bramlette Road, Greenville, SC, (Parcel 1) and four surrounding properties (Parcels 2 through 5) (**Figure 1-1**). Collectively, Parcels 1 through 5 comprise the Site.

Objectives of the RI are to:

- Determine the source, nature, and extent of affected environmental media resulting from past operation of the MGP.
- Submit a baseline risk assessment or other evaluation of human health and the environment.
- Generate data suitable for supporting an evaluation of remedial alternatives.

The following is an overview of the content in this report:

- **Section 2** describes Site location and physical setting, recounts historical MGP operations, and identifies potential receptors near the Site.
- **Section 3** presents a chronology of previous investigations, including a summary of associated reporting.
- **Section 4** chronicles RI work activities that were completed from 2017 to 2020 in order to meet the objectives of VCC 16-5857-RP. Those activities are identified by date and parcel.
- **Section 5** provides a discussion of regional and local geologic and hydrogeologic settings, including Site-specific groundwater flow characteristics.
- **Section 6** provides laboratory analytical data results pertaining to soil, occurrence of non-aqueous phase liquid (NAPL), groundwater, surface water, and sediment. Results are summarized by parcel.

- **Section 7** provides results of a baseline human health risk assessment (HHRA) and a screening level ecological risk assessment (SLERA).
- **Section 8** presents findings and recommendations, derived in part from key components of the conceptual site model (CSM), which is described. This section concludes with a schedule for completing RI activities.

2.0 BACKGROUND INFORMATION

2.1 Site Setting and Description

The Site is comprised of five parcels that cover approximately 30 acres. The Site is bounded generally by the CSX Transportation (CSXT) railroad corridor to the north, west, and south, and by West Washington Street, the Legacy Charter Elementary School (Legacy Elementary), and the City of Greenville Sanitation Department to the east. The Reedy River and Swamp Rabbit Trail define the western boundary of the Site (**Figure 2-1**).

The parcels that comprise the Site are zoned Industrial (I-1), Residential (R-6), and Service District or light industrial (S-1). The following table summarizes tax map serial number, Site parcel ID and zoning classification, and land use.

Tax Map Serial Number	Parcel ID (Zoning Classification)	Land Use
0140000300300	Parcel 1 (I-1)	Vacant lot and location of former MGP operations
0140000300200	Parcel 2 (I-1)	Active rail operations and location of a former asphalt manufacturing plant (operational in 2003, www.gcgis.org aerial photograph) and debris pile
0138000100100	Parcel 3 (I-1)	Active rail operations and location of CSX field office, unpermitted Vaughn Landfill, and numerous sewer lines and access manways
0054000300100	Parcel 4 (R-6)	Jurisdictional wetland and therefore not suitable for development; vacant lot
0054000600100	Parcel 5 (S-1)	Jurisdictional wetland; vacant lot

Topography at the Site is relatively flat and low-lying, and includes delineated wetlands. Parcels 2, 3, 4, and 5 are located within the 100-year flood plain of the Reedy River (**Figure 2-1**). Parcel 1 is relatively flat and gently sloping from the north (938 feet) to south (932 feet). The debris piles on Parcel 2 (946 feet) and the Vaughn landfill on Parcel 3 (elevation of 942 feet) are the points of highest elevation at the Site. Parcels 4 and 5 are generally flat with elevation ranging from 920 feet to 925 feet.

Surface water features within and adjacent to the Site include drainage ditches, jurisdictional wetlands, and the Reedy River to the west of the Site. The elevation of the Reedy River from north to south adjacent to the Site ranges from 920 feet to 916 feet. Extensive soil coring confirmed the presence of alluvial deposits within the bounds of the floodplain, including a laterally extensive coarse sand deposit. Since most of the Site is located within a 100-year flood plain, the man-made drainage ditches were presumably constructed to improve drainage on all the five parcels. Because these ditches were present during MGP operations, they are an important aspect of the CSM.

The Reedy River channel south of the Site was relocated in the late 1800s to early 1900s. The current configuration of the Reedy River is documented in a 1921 revised map of Greenville by W.D. Neeves, the city engineer (**Figure 2-2**). The "old bed" diverted from the current channel approximately 800 feet west of Willard St. Because the majority of MGP production took place after 1927, the "old bed" channel of the Reedy River is not considered relevant to investigations related to MGP operations.

2.2 Vaughn Landfill

An unpermitted, construction and demolition (C&D) debris landfill (Vaughn Landfill), occupies approximately seven acres on Parcel 3 (**Figure 2-1**). During the RI, C&D debris were encountered in the Vaughn Landfill from land surface to a maximum depth of approximately 10 feet bls. Based on the measured and estimated depths, an estimated 84,000 cubic yards (approximately 150,000 tons) of C&D debris is contained in the Vaughn Landfill.

Beginning in 1988, Vaughn Construction placed C&D debris (including concrete, brick, wood, plastic, roofing materials, insulation, and glass) into the unpermitted landfill. In 1993, SCDHEC advised Mr. Vaughn that the landfilling activities were improper. In 1994, the United States Army Corps of Engineers (USACE) notified CSXT, the owner of the property, that the landfill was located on a wetlands, and CSXT ordered Mr. Vaughn to cease operation of and close the unpermitted landfill. Mr. Vaughn did not remove the C&D debris or remediate any environmental impacts.

In 1995, SCDHEC directed CSXT to evaluate and mitigate damage to wetlands caused by the unpermitted landfill. NAPL was encountered during evaluation of the Vaughn Landfill, resulting in Duke Energy's involvement with the assessment and remediation of Parcels 1 through 5 comprising the Bramlette Road MGP Site.

In correspondence dated February 26, 2001, regarding the former Vaughn Landfill parcel, SCDHEC noted that removal of the landfill debris was not recommended and that the only required action was continued groundwater monitoring near the landfill. This determination was supported based on SCDHEC's evaluation of Site risk conditions and recognition of the following facts and conclusions:

- The MGP-related NAPL is viscous and relatively non-mobile

- The areal extent of constituents in groundwater were stable
- Biological assessments of the area demonstrated that the MGP-related constituents were not significantly affecting flora and fauna
- No surface water or downstream/downgradient impacts related to the MGP were observed
- No drinking water wells existed within 0.5 miles of the Site

In a February 2001 letter to the United States Army Corps of Engineers, SCDHEC recommended CSXT perform off-Site mitigation rather than on-Site mitigation to compensate for wetland impacts attributed to the unpermitted landfill. CSXT was responsible for and completed the recommended mitigation.

2.3 MGP Operational History

Southern Public Utilities built the MGP on East Bramlette Road in 1917 (**Figure 1-1**). Duke Power Co. assumed ownership and operation of the MGP in 1939 and sold the property and operations to Piedmont Natural Gas in 1951. Property transactions from 1963 to 1967 transferred ownership of the five parcels to Seaboard Coast Line Railroad Company, also known as CSX Transportation, Inc.

Gas was manufactured at the Bramlette Road MGP from 1917 to 1952. A total of 5.5 billion cubic feet of gas was produced at the Bramlette Road MGP, with 99 percent being coal gas. The coal water gas (CWG) process was used in a limited capacity beginning in 1945. Both coal tar and CWG tar were produced and sold as a marketable byproduct. A total of 4 million gallons of tar was produced from 1922 to 1952, with 99.7 percent being coal tar (0.3 percent CWG tar). Tar residuals would have been a part of MGP process effluent flow. Effluent from coal gas production was 99 percent of the total effluent during the period of 1922 to 1952. The trend follows gas production with effluent peaking at the end of the 1940s at just over 6,000 gallons per day(gpd). As a perspective, a flow rate of 6,000 gpd equates to about 4 gallons per minute (gpm), similar to the flow from two kitchen sinks. A detailed discussion of gas manufactured at the Bramlette Road MGP is included as **Appendix A**. Volatile organic compounds (VOC) and semivolatile organic compounds (SVOC) associated with coal tar and CWG tar are the subject of this investigation.

MGP-related structures that were present during operations (**Figure 2-3)** included:

Former MGP Operational Structures	Description
Retort House	Retort houses were cylindrical ovens where gas was generated. Retort houses were typically above ground. Subsurface piping may have been present to transfer oil and gas to the gas holder or other ancillary structures.
Tar chambers	Tar that was collected in the bottom of the gas holder was typically transferred to the tar tanks. Some MGP facilities used a below-grade tar separator that separated the tar from the liquid condensate. The tar tanks were typically used as a transient storage point before the tar was transferred off-site potentially for use in the manufacture of textile dyes, mosquito control, or anti-dusting agent on roadways.
Gas holder (a large gas holder, small gas holder, and relief gas holder are identified in historical records for the Bramlette MGP).	The relief holder was designed to collect tar from the gas stream as it cooled within the structure. Typically, the bottom of the gasholder was contoured to direct condensate to a sump at the bottom. The sump would have been periodically pumped out and typically run through a tar separator prior to being transferred to the tar holding tank.
Carburetted water gas plant	Carburetted water gas plants typically contained a generator, carburettor, and superheater. The CWG generator directed air and steam in alternating cycles through a bed of coke or coal to produce water gas or blue gas primarily composed of hydrogen and carbon monoxide. The coke or coal in the generator was combusted in part to produce ash and slag. The water gas travelled to a carburetor where petroleum was sprayed onto hot refractory brick and cracked into light hydrocarbons. As with coal gas manufacture, excess water produced in the process was discharged as an effluent after gravity separation of CWG tar in a tar separator.

Based on a review of historical aerial photography, a network of ditches was present on the Site during the time of MGP operations. Those ditches appear to have been associated with plant operations. The primary historical ditch related to the MGP begins at a culvert on the northern end of Parcel 1 near west Washington St (**Figure 2-1**). The ditch transects Parcel 1 to the south where wastewater effluent was likely discharged into the ditch. The primary ditch flows under East Bramlette Road to the southeast and through Parcels 3, 4, and 5 until it ultimately joins the Reedy River. Detailed analysis of the primary historical ditch, by review of multiple historical aerial images, is provided in **Appendix B.**

Key historical events related to the Bramlette Road MGP are summarized in the following table.

Year	Event
1917	A manufactured gas plant is constructed on East Bramlette Road by Southern Public Utilities.
1917	The MGP begins manufacture of gas through the coal carbonization (coal gas) process.
1939	Duke Energy assumes ownership and operations of the MGP.
1945	CWG plant begins operations.
1951	Duke Energy sells ownership and operations to Piedmont Natural Gas.
1952	Bramlette Road MGP operations cease.
1958	Bramlette Road MGP demolition mostly complete.
1963-1967	CSXT assumed ownership of the five parcels associated with the Site.
1988	An unpermitted landfill (Vaughn Landfill) is constructed on CSXT property (Parcel 3).
1995/1996	The Site Investigation Phase II Vaughn Landfill/Duke Power Sites report (AES, 1996) identifies substances consistent with the operations of an MGP in soil and groundwater beneath the Vaughn Landfill.
2001/2002	Source area removal action completed (described in more detail below).
2016	Duke Energy and SCDHEC enter into a Responsible Party Voluntary Cleanup Contract.
2016 -2020	Implementation of Remedial Investigation of the Bramlette Road MGP is conducted.

2.4 Receptors

Receptors associated with the Site include groundwater use, surface water bodies (including jurisdictional wetlands), and neighboring properties such as Legacy Elementary and the Swamp Rabbit trail. The following table provides a summary of receptors:

Receptor	Description
Groundwater	All groundwaters of the state are classified as Class GB or suitable for drinking water without treatment. Quality standards for Class GB groundwater for organic and inorganic chemicals are the maximum contaminant levels as set forth in R.61- 58, State Primary Drinking Water Regulations.
Reedy River	The Reedy River is classified as a Freshwaters (FW) stream suitable for recreation and as a source for drinking water supply after conventional treatment, suitable for fishing and supportive of aquatic life, and suitable for industrial and agricultural uses.
Tributaries to the Reedy River	Where a surface water body is tributary to waters of a higher class, the quality of the water in the tributary shall be protected to maintain the standards of the higher classified receiving water.

Receptor	Description
Water Supply Wells	No known water supply wells exist within a 0.5-mile radius of the Site An interview with a representative from Greenville Water System confirmed that public water access was provided to this neighborhood in 1943 and the area is currently supplied by public water. Results of an EDR Radius Map™ Report with GeoCheck® and publicly available SCDHEC records did not indicate the presence of water supply wells or public water supply within 0.5 mile of the Site. The records review identified five groundwater wells within 0.5 mile of the Site that were permitted and installed by the United States Geological Survey (**Figure 2-4**).
Legacy Elementary	The elementary school is located to the south and east of Parcel 1, across East Bramlett Road. Based on constituent concentrations in groundwater and surface water, a complete exposure pathway from affected media to occupants of the property is unlikely. Further evaluation of sediments could determine whether sediments within the wetland area on Legacy Elementary property pose an unacceptable risk to ecological receptors.
Swamp Rabbit Trail users	The Swamp Rabbit Trail borders the Site to the west, between the Site and the Reedy River. Based on constituent concentrations in groundwater and surface water, a complete exposure pathway from affected media to users of the trail is unlikely.

2.5 Interim Removal Action

Remedial excavation and backfilling activities began in July 2001 and extended through December 2002. Remedial excavation was performed across approximately 3.8 total acres (**Figure 2-1**). Approximately 1.4 acres of the site were excavated to depths ranging from 3 feet to less than 6 feet, while the remaining 2.4 acres of the site were excavated to depths ranging from 6 to 12 feet. Excavation depths were typically extended beyond the 3 feet target depth to remove additional and obvious source material that would serve to facilitate the future natural attenuation of affected groundwater.

Free tars were encountered and removed from both a known surface tar well, and a previously unknown subsurface tar tank. The tar well measured approximately 17 feet wide, 40 feet long, and 14 feet deep, and was constructed with several separate chambers (**Figure 2-3**). Approximately 350 cubic yards of tar mixed with bricks and other debris was removed from this structure. An additional approximately 2500 gallons of free liquid tar was encountered and removed from a previously unknown 4.5 feet diameter by 24.5 feet long underground steel tar tank located in the southern area of the site.

In total, 61,088 tons of contaminated soil and debris was excavated, screened and shipped from the Bramlette Road MGP Site. Of this material, 27,144 tons of screen rejects and other debris was shipped to the Waste Management - Palmetto Landfill Facility in Wellford, South Carolina. Approximately 33,944 tons of screened affected soil material was transported to the Southeastern Soil Recovery (SSR) Facility in Laurens County, South Carolina for thermal treatment. In total, approximately 33,926 tons of treated material from the SSR facility was returned to the Bramlette Road MGP site for use as backfill.

3.0 PREVIOUS INVESTIGATIONS

In 1995, a Phase I investigation was completed at the CSXT/Vaughn Landfill (Parcel 3). The Phase I investigation identified affected soil, sediment, and groundwater, and non-aqueous phase liquid (NAPL) at the interface between the construction and demolition (C&D) landfill material and native soils. Consequently, in 1996, a Phase II investigation was completed at the CSXT/Vaughn Landfill (Parcel 3) and former Bramlette MGP (Parcel 1) locations. The Phase II investigation confirmed the presence of affected groundwater beneath the Vaughn Landfill (Parcel 3) and MGP (Parcel 1) locations. In 1999, a Phase III investigation was completed to further evaluate the nature and extent of affected media (soil and groundwater). Based on results of the investigations, remedial actions were performed at the Site in 2001 and 2002 to address the primary areas of MGP-related source material. From 2002 through 2016, groundwater monitoring was conducted. In 2016, SCDHEC issued Responsible Party VCC 16-5857-RP to Duke Energy. From 2016 through the present, RI activities have been conducted in accordance with the VCC.

A table of previous investigations and associated reports and documents, along with a brief summary of each investigation are provided below.

Year	Author	Report	Summary
1995	Applied Engineering & Science, Inc.	Site Investigation, Soil, Sediment, and Groundwater Sampling, CSX Real Property, Greenville, SC	Tar-like material (TLM) was observed at the interface of C&D landfill materials and native soils and MGP-related constituents detected soil, groundwater, and surface water.
1996	Applied Engineering & Science, Inc.	Site Investigation, Phase II, Vaughn Landfill/Duke Power Sites, CSX Real Properties, Greenville, SC	Summarized efforts to determine the extent of NAPL, further delineate horizontal and vertical extent of affected groundwater, and assess effects of NAPL on plant species number and diversity.
1999	Applied Engineering & Science, Inc.	Wetland Delineation Report, CSX Bramlette Road Property, Greenville, SC	Performed wetland delineation survey to determine valuation of wetlands affected by Vaughn Landfill. Submitted after-the-fact permit to USACE.
2000	Site Remediation Services Group, Duke Engineering & Services, Inc.	CSX/Vaughn Landfill and Bramlette Road MGP Sites, Phase III Investigation and Site Assessment Report	Summarized Results of Phase I, II, and III investigations.

Year	Author	Report	Summary
2002	Duke Power	Suburban Propane Property and Northwest Area Investigation Report	Assessed the presence and extent of MGP-related constituents in soil at the Suburban Propane property immediately north of the MGP site (Parcel 1).
2003 2016 2017	Duke Power S&MW, Inc. S&ME, Inc.	Groundwater Monitoring Reports, December 2002 Sampling	Laboratory analytical results for groundwater samples.
2003	Site Remediation Services Group, Duke Energy, Energy Delivery Services	CSX/Vaughn Landfill and Bramlette Road, MGP Sites, Remedial Action Plan Final Report	Summary of 2001 interim removal action that excavated approximately 61,000 tons of soil and debris affected by former MGP operations.
2016	South Carolina Department of Health and Environmental Control	Responsible Party Voluntary Cleanup Contract 16-5857-RP, CSXF Bramlett Road Site, Greenville County	Responsible Party VCC entered into by SCDHEC and Duke Energy Carolinas, LLC on July 29, 2016. operations.
2016	Altamont Environmental, Inc.	Progress Report, 60-Day Report	60-day progress report required by VCC.
2016 2018 2019	Altamont Environmental, Inc. ERM SynTerra	Groundwater Remedial Investigation Work Plan for the Former Operation of the Bramlette MGP Facility, Greenville, SC	Proposed RI activities to define nature and extent of NAPL and affected soil, groundwater, sediment and surface water in accordance with the VCC.
2016-2020	Anchor QEA ERM SynTerra	Quarterly Progress Reports, 2016 through First Quarter 2020	Quarterly Progress Report required by VCC.

4.0 RI ASSESSMENT ACTIVITIES

RI assessment activities on Parcels 1 through 5, along the Swamp Rabbit Trail, and at Legacy Elementary began in June 2017 and have continued through 2020. Work was completed in accordance with the following work plans and quality documents:

- *Groundwater Remedial Investigation Work Plan for the Former Operation of the Bramlette MGP Facility* (Altamont Environmental, Inc., November 2016)
- *Groundwater Remedial Investigation Work Plan Addendum* (ERM, April 2018)
- *Remedial Investigation Work Plan Addendum* (SynTerra, July 2019)
- *Quality Assurance Project Plan – Former Bramlette MGP Site* (SynTerra, September 2018)

Locations of monitoring wells, surface water and sediment samples, sheen samples, and surface water gauging stations are shown on **Figure 2-1**. Parcel 1 soil boring and test pit locations and the results of the passive soil gas survey are shown on **Figure 4-1**. NAPL Assessment soil borings are shown on **Figure 4-2**. Monitoring well and soil boring logs, construction forms, and abandonment forms are included as **Appendix C**. Sampling logs are included as **Appendix D**.

Work completed to date is summarized by parcel or property in the following sections.

4.1 Parcel 1 and Legacy Elementary

Date	RI Activity
2017	**Temporary Wells (Direct Push Technology):** Temporary groundwater monitoring wells (TW-1 through TW-13) were installed from June 19 through June 21. Temporary wells and associated samples were installed to assess the effectiveness of the removal action conducted in 2001 and 2002. Upon completion of groundwater sampling, the temporary monitoring wells were abandoned.
2018	**Surface Water and Sediment Sampling (Legacy Elementary):** One (1) surface water and sediment sample was collected from the ditch upgradient of Parcel 3 on Legacy Elementary property (SW-01) and analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).
2019	**Monitoring Well Installation (Rotary Sonic) and Slug Testing (Legacy Elementary):** Three (3) monitoring wells (MW-41S, MW-41TZ, and MW-41BR) were installed at Legacy Elementary.
2019	**Groundwater Monitoring:** Groundwater samples were collected from eight (8) monitoring wells on Parcel 1. Samples were analyzed for VOCs (United States Environmental Protection Agency (USEPA) Method 8260B) and SVOCs (USEPA Method 8270D).

Date	RI Activity
2019	**Surface Geophysics:** Subsurface features were located on Parcel 1 using ground-penetrating radar (GPR), radio-frequency electromagnetic (EM), and time-domain electromagnetic (EM61). Results of the survey were used to locate soil borings and monitoring wells.
2019	**Near-Surface Soil Sampling (Rotary Sonic):** An unbiased grid with approximate 60-foot spacing was established throughout the study area, and 47 borings (SA-SB-01 through SA-SB-47) were drilled to a depth of 6 feet. Two soil samples were collected from each boring (0.5 of a foot to 1-foot bls and 5.5 feet to 6 feet bls) for laboratory analyses of VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).
2019	**Passive Soil Gas Survey:** Passive soil gas samplers were placed adjacent to soil boring locations SA-SB-01 through SA-SB-47. Results from the survey were used to locate soil borings and monitoring wells. After 14 days, the samplers were retrieved and submitted for VOC analysis in accordance with USEPA Method 8260C procedures and TPH (C4–C9 and C10–C15).
2019	**NAPL Assessment Soil Borings (Rotary Sonic):** Seven (7) soil borings (RI-SB-04 through RI-SB-10) were drilled to assess the presence or absence of NAPL beneath the extent of the removal action. Borings were advanced to partially weathered rock (transition zone) or top of rock and ranged from 23 feet to 58 feet bls.
2020	**Test Pit Excavation:** Shallow test pits SA-TP-1 though SA-TP-16 were excavated to depths from 3 to 6.5 feet to verify adequate removal of near-surface soils affected by the MGP on the perimeter of the excavation conducted in 2001 and 2002.
2020	**Monitoring Well Installation (Rotary Sonic) and Slug Testing:** Nine (9) monitoring wells (MW-36S, MW-36TZ, MW-36BR, MW-37S, MW-37TZ, MW-37BR, MW-42S, MW-42TZ, MW-42BR) were installed.
2020	**Borehole Geophysics and Flowmeter Logging:** Down hole geophysical logging - including acoustic televiewer, optical televiewer, caliper, temperature, conductivity, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF) - was completed in three (3) monitoring well borings to inform well design and evaluate bedrock characteristics.
2020	**Groundwater Monitoring:** Groundwater samples were collected from 17 monitoring wells on Parcel 1. Groundwater samples were collected from four (4) monitoring wells on Legacy Elementary property. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).

4.3 Parcel 2 and Swamp Rabbit Trail

Date	RI Activity
2017	**Temporary Wells (Direct Push Technology):** Refer to description provided in Parcel 1.
2019	**NAPL Assessment Soil Borings (Rotary Sonic):** Nine (9) soil borings were drilled along three transects (T1-SB-1 through T3-SB-3) to assess the presence or absence of NAPL adjacent to historical drainage ditches on Parcel 2. Borings were advanced from 19 feet bls to 39 feet bls.
2019	**Groundwater Monitoring:** Groundwater samples were collected from two (2) monitoring wells on Parcel 2. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2019	**Sheen Sampling:** One (1) sheen sample was collected from standing water at the southern end of Parcel 2 along East Bramlette Road. The sample was analyzed for paraffins, isoparaffin, aromatics, naphthenes, and olefins (PIANO) VOCs by USEPA Method 8260 High Resolution; polycyclic aromatic hydrocarbons (PAH)s by USEPA Method 8270D; Saturated hydrocarbons by USEPA Method 8015D.
2019	**Surface Geophysics:** Subsurface features were located on the eastern portion of Parcel 2 using GPR, radio-frequency electromagnetic (EM), and time-domain electromagnetic (EM61). Results of the survey were used to locate soil borings and monitoring wells.
2019	**Near-Surface Soil Sampling:** Refer to description provided in Parcel 1.
2019/2020	**Monitoring Well Installation (Rotary Sonic) and Slug Testing:** Eight (8) monitoring wells (MW-29S, MW-29TZ, MW-29BR, MW-34S, MW-34TZ, MW-34BR, MW-35S, MW-35TZ) were installed using rotary sonic drilling methods on Parcel 2. Four (4) downgradient monitoring wells (MW-33S, MW-33TZ, MW-48S and MW-48TZ) were installed along the Swamp Rabbit Trail and adjacent to the Reedy River using hollow stem auger drilling methods.
2020	**NAPL Assessment Soil Borings (Rotary Sonic):** Two (2) soil borings (RI-SB-11 and RI-SB-12) were drilled to assess the presence or absence of NAPL adjacent to historical drainage ditches on Parcel 2. Borings were advanced to at least 15 feet into saprolite or partially weathered rock (transition zone) and ranged from 47 feet bls to 58 feet bls.
2020	**Test Pit Excavation:** Refer to description provided in Parcel 1.
2020	**Borehole Geophysics and Flowmeter Logging:** Down hole geophysical logging - including acoustic televiewer, optical televiewer, caliper, temperature, conductivity, SPR, SP, and HPF - was completed in three (3) monitoring well borings to inform well design and evaluate bedrock characteristics.
2020	**Groundwater Monitoring:** Groundwater samples were collected from eight (8) monitoring wells on Parcel 2. Groundwater samples were collected from four (4) monitoring wells along the Swamp Rabbit Trail and adjacent to the Reedy River (MW-33S, MW-33TZ, MW-48S, and MW-48TZ). Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).

4.4 Parcel 3 and Swamp Rabbit Trail

Date	RI Activity
2018	**Monitoring Well Installation (Hollow-Stem Auger) and Slug Testing:** Three (3) downgradient monitoring wells (MW-30S, MW-31S, and MW-31TZ) were installed along the Swamp Rabbit Trail and adjacent to the Reedy River.
2018	**Groundwater Monitoring:** Groundwater samples were collected from three (3) monitoring wells along the Swamp Rabbit Trail and adjacent to the Reedy River. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2019	**NAPL Assessment Soil Borings (Rotary Sonic):** 39 soil borings (T4-SB1 through T17-SB3) were drilled along 13 transects, and soil borings RI-SB-01 through RI-SB-03 were drilled to assess the presence or absence of NAPL adjacent to historical drainage ditches on Parcel 3. Borings were advanced from 19 feet bls to 39 feet bls.
2019	**Surface Water and Sediment Sampling:** Five (5) surface water and five (5) sediment samples were collected from Parcel 3 (SW-02 through SW-06). Three (3) surface water and three (3) sediment samples were collected downgradient from the Site in the Reedy River (SW-07 through SW-09). Samples were analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).
2019	**Groundwater Monitoring:** Groundwater samples were collected from five (5) monitoring wells on Parcel 3. Groundwater samples were collected from three (3) monitoring wells along the Swamp Rabbit Trail and adjacent to the Reedy River (MW-30S, MW-31S and MW-31TZ). Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2019	**Sheen Sampling:** Two (2) sheen samples were collected from a ponded area east of the Vaughn Landfill and the drainage ditch west of the Vaughn Landfill. The samples were analyzed for PIANO VOCs by USEPA Method 8260 High Resolution; PAHs by USEPA Method 8270D; and saturated hydrocarbons by USEPA Method 8015D.
2019	**Monitoring Well Abandonment:** MW-03D, MW-06A, and MW-19 were abandoned due to overlapping or insufficient depth differential in screen intervals within well clusters (respectively, with MW-03, MW-21, and MW-01).
2019	**NAPL Forensics Analysis:** Two samples were collected for forensic analysis. One sample from NAPL within MW-03 and one sample from accumulated TLM found within MW-06A at the time of abandonment.
2019/2020	**Monitoring Well Installation (Rotary Sonic) and Slug Testing:** Nine (9) monitoring wells (MW-02TZ, MW-02BR, MW-03BR, MW-03BRL, MW-21BR, MW-21BRL, MW-39S, MW-39BR, and MW-39BRL) were installed on Parcel 3 using rotary sonic methods. Three (3) downgradient monitoring wells (MW-30TZ, MW-32S, and MW-32TZ) were installed along the Swamp Rabbit Trail and adjacent to the Reedy River using hollow stem auger drilling methods.
2020	**Borehole Geophysics and Flowmeter Logging:** Down hole geophysical logging - including acoustic televiewer, optical televiewer, caliper, temperature, conductivity, SPR, SP, and HPF - was completed in three (3) monitoring well borings to inform well design and evaluate bedrock characteristics.

Date	RI Activity
2020	**Groundwater Monitoring:** Groundwater samples were collected from 12 monitoring wells on Parcel 3. Groundwater samples were collected from Six (6) well pairs (MW-30 through MW-32) along the Swamp Rabbit Trail and adjacent to the Reedy River. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2020	**Surface Water and Sediment Sampling:** One (1) surface water and five (5) sediment samples were collected from Parcel 3. Three (3) surface water samples were collected downgradient from the Site in the Reedy River (SW-07, SW-08, and SW-09). Samples were analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).

4.5 Parcel 4

Date	RI Activity
2018	**Surface Water and Sediment Sampling:** One (1) surface water sample and one (1) sediment sample were collected downgradient from the Site in the Reedy River and analyzed (SW-10) for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).
2019	**Groundwater Monitoring:** Groundwater samples were collected from two (2) monitoring wells on Parcel 4. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2020	**Monitoring Well Installation (Rotary Sonic) and Slug Testing:** One (1) monitoring well (MW-40BR) was installed using rotary sonic methods within the Transflo operational area.
2020	**Groundwater Monitoring:** Groundwater samples were collected from three (3) monitoring wells on Parcel 4. Samples were analyzed for VOCs (USEPA Method 8260B) and SVOCs (USEPA Method 8270D).
2020	**Surface Water and Sediment Sampling:** One (1) surface water sample and five (5) sediment samples were collected from Parcel 4. One (1) surface water samples was collected downgradient from the Site in the Reedy River (SW-10). Samples were analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).

4.6 Parcel 5

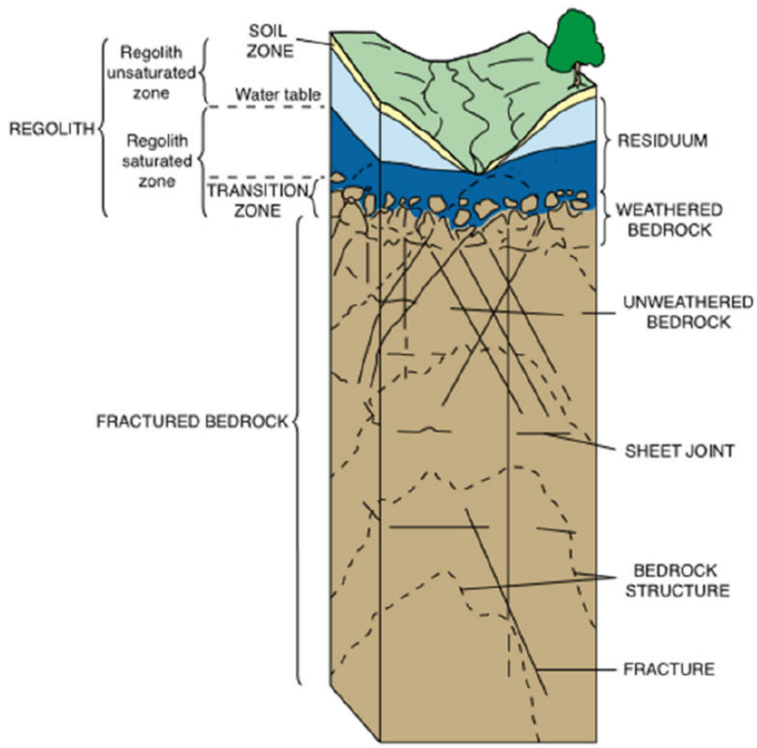
Date	RI Activity
2018	**Surface Water and Sediment Sampling:** Two (2) surface water samples and two (2) sediment samples were collected downgradient from the Site in the Reedy River (SW-11 and SW-12) and analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).
2020	**Monitoring Well Abandonment:** MW-23 and MW-24 were abandoned because the nearby MW-5 and MW-22 well pair provides delineation south of the plume, and the wells were located within a floodplain area with standing water.
2020	**Surface Water and Sediment Sampling:** Two (2) surface water samples and nine (9) sediment samples were collected from Parcel 5. Two (2) surface water samples were collected downgradient from the Site in the Reedy River (SW-11 and SW-12). Samples were analyzed for VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270).

5.0 GEOLOGY AND HYDROGEOLOGY

5.1 Regional Geology

The Site is located within the Piedmont Physiographic Province, which is bound to the west by the Blue Ridge and to the east by the Sandhills and Coastal Plain. The Site is located north of the Reedy River fault zone within the Sixmile thrust sheet (Willoughby and Nystrom, 2005). Bedrock geology at the Site consists of granite gneiss and sillimanite-mica schist (Nelson, et. al., 1998).

In general, the geology of the Piedmont is comprised of a regolith-fractured rock system including regolith, a transition zone, and bedrock (see inset figure, Harned and Daniel, 1992). The transition zone is described as a zone of weathered rock fragments, residual boulders, and lesser amounts of saprolite. This zone can serve as a preferential zone of groundwater flow due to a higher permeability than the overburden or underlying bedrock (Harned and Daniel, 1992).



5.2 Site Geology

The Site is located within the historical flood plain of the Reedy River. Stratigraphic units at the Site include fill, alluvium, saprolite, the transition zone, and bedrock. Fill is present over most of the Site and extends to a depth of approximately 8 feet bls. The fill material was placed to facilitate construction of various infrastructural components, including buildings, roads, railroads, etc. Below the fill material, alluvium is present throughout the Site, with an average thickness of approximately 11 feet (from approximately 8 feet bls to 19 feet bls). Alluvium consists of interbedded lean clays and fine to coarse sands and generally fines upward with coarser materials near the base of the alluvium deposit. Beneath the alluvium, saprolite is present throughout the Site and ranges from approximately 1 to 21 feet in thickness (from approximately 19 feet bls to 20-40 feet bls).

Although the transition zone is approximately 30 feet thick in some areas, the thickness diminishes toward the south and is absent in southern portions of the Site. Top of bedrock is encountered at approximately 30 to 50 feet bls. Bedrock under the site consists of interbedded granite gneiss and sillimanite-mica schist. While the mica schist is noticeably softer rock, there does not appear to be preferential weathering based on rock type; therefore, the extent of fracturing appears to be consistent.

5.3 Hydrogeology

The groundwater system, consistent with the regolith-fractured rock system, is characterized as an unconfined, interconnected aquifer system indicative of the Piedmont Physiographic Province. A conceptual model of groundwater flow in the Piedmont assumes a regolith and bedrock drainage basin with a perennial stream system (Harned and Daniel, 1992,). Groundwater is recharged by drainage and rainfall infiltration in the upland areas, followed by discharge to the perennial stream system. Flow in the regolith is like that of porous media, while flow in bedrock is primarily within secondary porosity features (fractures). Further discussion pertaining to the characterization of fractured bedrock is included in **Section 5.3.1**. Stratigraphic units present at the Site, associated flow zone, extent, and hydraulic conductivity are summarized in the following table.

Stratigraphic Unit		Flow zone	Extent	Hydraulic Conductivity (feet per day)
Fill		Shallow	Laterally extensive in Parcel 2 and Parcel 3 – Vaughn Landfill. Fill present from land surface to approximately 8 feet bls.	1 – 2.4 (geomean – 1.6)
Regolith	Alluvium	Shallow	Laterally extensive. Lean clay over coarse to fine sand. Alluvium present from approximately 8 feet bls to 19 feet bls.	0.7 – 35 (geomean – 5.6)
Regolith	Saprolite	Shallow	Laterally extensive. Saprolite generally present at 19 feet bls to 20–40 feet bls.	2.6 – 6.9 (geomean – 4)
Regolith	Transition Zone	Transition Zone	Transition zone present 25–50 feet bls. Diminishing thickness to absent in the southern portion of the Site.	0.06 - 100 (geomean - 0.9)
Fractured Bedrock		Bedrock	Laterally extensive. Top of bedrock encountered from 30–50 feet bls.	0.05 – 4 (geomean - 0.8)

Cross-section views of lithology and hydrostratigraphic units are presented as sections A-A′ (**Figure 5-1**), B-B′ (**Figure 5-2**), C-C′ (**Figure 5-3**), and D-D′ (**Figure 5-4**).

5.3.1 Fractured Bedrock Characterization

Deep bedrock borehole logging data were used to characterize depths of flow zones to set targets for monitoring well screen placement, hydraulic conductivity, the hydraulic apertures of fractures, and the in-situ orientations of bedrock fractures. Borehole geophysical logs are provided in **Appendix E** and detailed discussion about the methods of evaluation are provided in **Appendix F**.

Flow Properties and Characteristics

Flow-Log Analysis of Single Holes (FLASH), a computer program developed by the United States Geological Survey (USGS), uses heat pulse flowmeter (HPF) data for ambient and pumping conditions to estimate transmissivity profiles along single boreholes (Day-Lewis *et al.*, 2011). Calculated deep bedrock hydraulic conductivity values based on FLASH analysis indicate:

- Hydraulic conductivity values range from approximately 0.01 feet per day to 6 feet per day, with three observed values greater than 70 feet per day.
- Within the upper 60 feet of bedrock, little to no relationship between hydraulic conductivity and depth below top of rock was identified.
- The greatest hydraulic conductivity values are observed in the top 10 feet of bedrock.

Fracture Hydraulic Apertures

Transmissivity data generated by FLASH were also used to estimate the average hydraulic aperture (e_h) for individual bedrock intervals applying the local cubic law (Steele, 2006):

$$e_h = \sqrt[3]{\frac{12T\mu}{\rho_w g n}}$$

Based on HPF data and FLASH analysis:

- Estimated mean hydraulic apertures of bedrock fractures at the Site generally range from approximately 0.05 millimeters (mm) to 0.6 mm [50 micrometers (μm) to 600 μm].

- Apertures exhibit a decreasing trend with depth within approximately the top 60 feet of bedrock.
- The largest apertures occur within the top 9 feet of bedrock.

Fracture Spacing
Fracture spacing for each borehole interval was calculated by dividing the length of the interval by the number of open fractures identified in that interval.

- Televiewer logging results (discussed below) from the combined dataset indicated approximately 56 open fractures identified by GEL in 474 vertical feet of logging at the nine logged bedrock boreholes.
- The calculated average spacing between interpreted open fractures is 8.5 feet (vertical separation).

Fracture Orientation
Bedrock fracture orientations logged at each deep bedrock borehole indicate the following general consistencies from location to location:

- Fractures most frequently strike toward the west-northwest and dip moderately to the north-northeast. However, dips toward the southwest and cross-cutting fractures are also observed (as shown in the logs for MW-21BR, MW-34BR, and MW-36BR).
- The mean fracture strike direction approximately N61W.
- The mean fracture dip angle below the horizontal plane is approximately 22 degrees toward the north-northeast.

5.4 Groundwater

Groundwater flow generally follows topography to the southwest toward the Reedy River from Parcel 1 and is encountered at depths of less than 1 foot to 12.5 feet bls within alluvial and unconsolidated deposits (**Figure 5-1**). Bedrock groundwater flow mirrors the shallow zone and is generally to the southwest toward the Reedy River (**Figure 5-2**). Shallow occurrence of groundwater is encountered near the low-lying drainage that transects Parcel 1 and adjacent to wetlands environments. Deeper occurrence of groundwater is encountered where fill has been placed at the Vaughn Landfill and along the Reedy River. Water-level measurements and elevations in February 2020 are listed in **Table 5-1**.

Vertical gradients at the Site are generally neutral, with a maximum vertical gradient of -1.42 (upward direction) from the transition zone (MW-20) to the surficial zone (MW-03). Vertical gradients for well pairs at the Site are summarized in **Table 5-2**. Hydrographs confirm relatively neutral vertical gradients and are included for monitoring wells within the source area (**Figure 5-7**), the Vaughn Landfill (**Figure 5-8**), and adjacent to the Reedy River (**Figure 5-9**). Groundwater levels in all three flow zones correlate to precipitation events indicating a groundwater recharge response. The wells located along the Swamp Rabbit Trail appear to correlate to the Reedy River staff gauge indicating connectivity between the shallow flow system and the Reedy River. Seasonal high groundwater elevations occur in the spring (February and March) and seasonal low groundwater elevation occurs in the fall (October and November).

Seepage velocity calculation inputs and results are summarized in **Table 5-3.** Seepage velocities within each flow zone are summarized in the table below. Constituent transport velocities will typically be less than groundwater seepage velocities due to retardation of constituents during transport. Factors that influence retardation include advection, dispersion, adsorption and absorption, and biodegradation. The retardation factors of different constituents will vary and depend on soil/rock matrix properties (i.e. bulk density and matrix porosity) and the constituent sorption constant (K_d). Based on site specific estimates of groundwater flow velocity, groundwater within the shallow and transition zone would take up to approximately 85 years to migrate 1,100 feet, the approximate distance to the Reedy River. While the seepage velocity may be greater in the fractured bedrock flow system, the flow direction and distance are dependent upon the interconnectedness and orientation of fractures.

Flow zone	Seepage velocity (feet per day)	Seepage velocity (feet per year)
Shallow	0.15	54
Transition zone	0.04	13
Bedrock	0.8	295

6.0 REMEDIAL INVESTIGATION RESULTS

This section provides results of the remedial investigation. Remedial investigation activities occurred from July 2017 through April 2020. Laboratory analytical data reports for groundwater, soil, surface water, sediment, and sheen analysis are provided in **Appendix G**.

6.1 Soil Results

Soil samples were collected from Parcels 1, 2, and 3 for laboratory analysis of VOCs (USEPA Method 8260) and SVOCs (USEPA Method 8270). Near-surface (0.5 feet bls to 6 feet bls) and subsurface (12.5 feet bls to 22 feet bls) soil analytical results are summarized in **Table 6-1**.

The table below summarizes constituents in soil with a maximum concentration greater than a USEPA Regional Screening Level (RSL) for Residential or Industrial Soil. Maximum concentrations for five of the eight constituents identified below were detected in soil boring SA-SB-46 located adjacent to the historical drainage ditch on Parcel 2 and downslope from the source area (**Figure 4-1**).

Constituent	USEPA RSL for Residential Soil (mg/kg)	USEPA RSL for Industrial Soil (mg/kg)	Maximum Detection (mg/kg)	Location of Detection	Date of Maximum Detection	Parcel
Naphthalene	3.8	17	27.3	SA-SB-14 (5.5-6.0)	11/13/2019	1
1-Methylnaphthalene	18	73	25.9	T9-SB2 (19)	3/13/2019	3
2-Methylnaphthalene	24	3,000	39.2	T9-SB2 (19)	3/13/2019	3
Benzo(a)pyrene	0.11	2.1	**21.5**	SA-SB-46 (5.5-6.0)	11/14/2019	2
Benzo(b)fluoranthene	1.1	21	**27.2**	SA-SB-46 (5.5-6.0)	11/14/2019	2
Benzo(k)fluoranthene	11	210	12.1	SA-SB-46 (5.5-6.0)	11/14/2019	2
Dibenz(a,h)anthracene	0.11	2.1	**2.17**	SA-SB-46 (5.5-6.0)	11/14/2019	2
Indeno(1,2,3-cd)pyrene	1.1	21	11	SA-SB-46 (5.5-6.0)	11/14/2019	2

Notes:
Bold values indicate concentration greater than USEPA Industrial RLs
mg/kg – milligrams per kilogram
RSL – Regional Screening Level

Results of the soil assessment by parcel (Parcels 1 – 3) are summarized in the following sections.

6.1.1 Parcel 1

To determine the effectiveness of the interim removal action, 80 near-surface soil samples were collected from Parcel 1 from depths of 0.5 foot bls-1 foot bls to 5.5-6 feet bls.

- Only one constituent (naphthalene) was detected at one location (SA-SB-14, 5.5 feet bls – 6 feet bls) at a concentration greater than an industrial RSL.
- Benzo(a)pyrene was detected at a concentration less than the Residential RSL in SA-SB-33 (5.5-6); however, in the duplicate sample the concentration was greater than the Industrial RSL. Both RSLs for benzo(a)pyrene are very low. Based on professional experience with similar properties located in areas that have been developed for many years, the concentrations detected may reflect anthropogenic background concentrations rather than Site operations.

6.1.2 Parcel 2

Similar to activities at Parcel 1, near-surface soil samples were collected from Parcel 2 to determine the effectiveness of the interim removal action. Saturated subsurface samples can be used to identify potential preferential pathways for NAPL migration and potentially target areas for corrective action. In total, 19 soil samples were collected from Parcel 2 from depths of 0.5 foot bls to 17 feet bls.

- No constituents were detected at concentrations greater than an Industrial or Residential RSL in samples collected deeper than 6 feet bls.
- Two samples from the 5.5 feet - 6 feet bls interval resulted in detections greater than an Industrial RSL. Those detections occurred at the following locations and included the following constituents:
  - SA-SB-46 – benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene
  - SA-SB-47 – benzo(a)pyrene

6.1.3 Parcel 3

Saturated subsurface samples can be used to identify potential preferential pathways for NAPL migration and potentially target areas for corrective action. In total, 29 saturated samples were collected from Parcel 3 from depths of 10 feet bls to 22 feet bls.

- Only one constituent (benzo(a)pyrene) was detected at one location (T9-SB2 – 19 feet bls) at a concentration greater than an Industrial RSL which is likely more indicative of affected groundwater due to the saturated condition of the sample.

Near-surface soil samples are incorporated into the Risk Assessment presented in **Section 5.0** of this report.

6.2 NAPL Assessment Results

The extent of observed NAPL generally follows the path of historical drainage ditches at the Site. Shallow (high viscosity) tar-like material is generally associated with the relict/former land surface and coincident with historical drainage channels. The oil-like CWG residual (coal tar) is more commonly found in the saturated zone within alluvial coarse sand deposits atop the saprolite unit. The extent of visually observed NAPL is shown on **Figure 4-2** and summarized in **Table 6-2**. Results of the NAPL assessment by parcel (Parcels 1 through 5) are summarized in the following sections.

6.2.1 Parcel 1

NAPL was not observed in test pits excavated along the western boundary of the source area removal action in Parcel 1. NAPL was observed in Parcel 1 soil borings and cores collected during monitoring well installations. Test pit observations are summarized in **Table 6-3**. A passive soil gas survey and surface geophysics were used to strategically locate soil borings to investigate the presence of NAPL. Analytical results from the passive soil gas survey are included in **Appendix G** and the surface geophysics summary report is included in **Appendix H**. Key observations include:

- NAPL staining was noted on soils from 10 to 16 feet bls at MW-07R to a maximum observed depth of 34 feet bls at RI-SB-04.
- NAPL staining and coated soil grains were observed in the MW-36 boring from 14 feet bls to 21 feet bls.

6.2.2 Parcel 2

NAPL was not observed in test pits excavated along the western boundary of the source area removal action in Parcel 2. Test pit observations are summarized in **Table 6-3.** NAPL was observed in Parcel 2 soil borings and temporary wells. Key observations include:

- Observed NAPL is limited in areal extent to the vicinity of the historical ditch adjacent to East Bramlette Road.
- Observations of NAPL ranged from light staining to NAPL coated seams at depths between 3.5 feet bls to 12 feet bls.

6.2.3 Parcel 3

NAPL was observed beneath the Vaughn Landfill in soil borings and temporary wells at depths greater than 9 feet bls. Key observations include:

- NAPL beneath the northern portion of the Vaughn Landfill (north of the cross-cutting ditch) is observed primarily at depths of 9 feet bls to 24 feet bls.
- NAPL beneath the southern portion of the Vaugh Landfill is generally observed at depths of 7 feet bls to 12 feet bls.
- Observations of NAPL included NAPL saturation (T5-SB2 and T12-SB2), tar blebs in the northern portion of the Vaughn Landfill, and NAPL coated grains in borings in most areas where NAPL was observed.
- During abandonment of monitoring well MW-06A, approximately 3 feet of viscous NAPL was observed within the well screen. Observations from borings surrounding the location of MW-6A did not indicate similar accumulation within the soil matrix.

NAPL samples were collected from MW-03BR and MW-06A for detailed forensic analysis (**Figure 2-1**). Parameters analyzed included PIANO Volatile Organics, Alkylated Polynuclear Aromatic Hydrocarbons, and Total Petroleum Hydrocarbons (TPH). Sample MW-06A NAPL was also analyzed for viscosity and specific gravity (density).

Results of the forensic analysis indicated sample MW-06A NAPL to be an unweathered MGP tar produced by a coal carbonization process. Sample MW-3BR NAPL is a lightly weathered MGP tar produced by a CWG process. The forensics analysis and discussion are provided in **Appendix I.**

6.2.4 Parcel 4

NAPL was not observed in sediment samples SW-14 or SW-14A (0.5 foot bls to three feet bls).

6.2.5 Parcel 5

NAPL was not observed in sediment samples SW-15 through SW-17 (0.5 foot bls to three feet bls).

6.3 Groundwater Results

Groundwater monitoring at the Site began in 1996. Since 2018 approximately 52 additional monitoring wells have been installed for a total of 71 monitoring wells, increasing the size of the monitoring network by over 250 percent. Monitoring wells were placed to target groundwater immediately upgradient of the Reedy River. Bedrock monitoring wells were strategically located using information gathered from the borehole geophysical surveys. Well construction details are summarized in **Table 6-4**. Newly installed monitoring wells were slug tested. Slug test results were analyzed with AQTESOLV™ software using the Bouwer-Rice, Hvorslev, and/or Springer-Gelhar methods (as appropriate). The slug test results are summarized in **Table 6-5**.

Historical groundwater monitoring records were reviewed. The Mann-Kendall trend test was selected to evaluate trends in select wells to determine whether benzene and naphthalene concentrations in groundwater exhibit a statistically significant increasing trend, decreasing trend, or no trend (**Appendix J**). A minimum data set of four sampling events is required to provide reliable results; therefore evaluation of groundwater concentrations at recently installed monitoring well locations is not possible. Monitoring wells with an adequate data set were selected to represent the source area (MW-07/07R) and a downgradient location (MW-01).

Groundwater concentrations at both locations have had routine detections of benzene and naphthalene greater than the groundwater standard. Results of the evaluation determined:

- At source area monitoring well MW-07/07R, the benzene concentration is stable (no significant trend identified). The naphthalene concentration exhibits a statistically significant decreasing trend.
- At downgradient monitoring well MW-01, both benzene and naphthalene exhibit stable concentrations (no significant trends identified).

Two Site-wide groundwater monitoring events occurred during the RI field investigation in March 2019 and February 2020. Groundwater samples were collected from three monitoring wells directly upgradient of the Reedy River after installation of the wells in April 2020. Groundwater analytical results for these events are summarized in **Table 6-6.**

Constituents in groundwater at the Bramlette MGP are denser than water (**Appendix I**) and therefore migrate downward into the subsurface with distance from the source area (Parcel 1). This is evident at the Site where Parcel 1 groundwater is affected only in the shallow zone. As constituents migrate through Parcels 2 and 3 towards the Reedy River groundwater is affected in the deeper flow zones. Those constituents have not been observed at concentrations greater than SCDHEC maximum contaminant levels (MCL)s in monitoring wells located along the Swamp Rabbit Trail upgradient of the Reedy

River. The areal extent of detectible constituent concentration in groundwater is illustrated in isoconcentration maps for benzene (**Figure 6-1**, **Figure 6-2**, and **Figure 6-3**) and naphthalene (**Figure 6-4**, **Figure 6-5**, and **Figure 6-6**).

Benzene and naphthalene concentrations in cross-section view are included on **Figure 5-1** through **Figure 5-4**.

The table below summarizes the constituents in groundwater with a maximum concentration greater than a MCL as defined in R. 61-58. Maximum concentrations for two of the three constituents were detected in transition zone monitoring well MW-29TZ located on Parcel 2 north of East Bramlette Road and MW-02BR (**Figure 6-2** and **Figure 6-5**). Bis(2-ethylhexyl)phthalate is a common laboratory contaminant and not related to former MGP processes.

Constituent	SCDHEC MCL (µg/L)	Maximum Detection (µg/L)	Location of Maximum Detection	February 2020 Maximum (µg/L)	Location of February 2020 Maximum
Benzene	5	1,920	MW-29TZ	1,680	MW-29TZ
Naphthalene	25	4,060	MW-29TZ	3,200	MW-29TZ
bis(2-ethylhexyl)phthalate	6	81.5	MW-02BR	BDL	---

<u>**Notes:**</u>
SCDHEC MCL – SCDHEC R. 61-58 State Primary Drinking Water Standards, effective October 2014, Appendix B maximum contaminant level (MCL)
BDL – Below detection limit
µg/L – micrograms per liter

Results of the groundwater assessment by parcel (Parcels 1 – 4) are summarized in the following sections.

6.3.1 Parcel 1 and Legacy Elementary

No constituents were detected at concentrations greater than MCLs in monitoring wells located on Legacy Elementary property.

Groundwater analytical results indicate concentrations of benzene and naphthalene greater than MCLs in shallow monitoring wells MW-07R and MW-36S. MW-07R is located near the former relief gas holder, and MW-36S is located near the former tar chambers. No constituents were detected at concentrations greater than MCLs within the deeper flow zones.

6.3.2 Parcel 2

No constituents were detected greater than MCLs in downgradient monitoring wells MW-33S, MW-33TZ, MW-48S, and MW-48TZ located along the Swamp Rabbit Trail immediately upgradient of the Reedy River.

No constituents were detected at concentrations greater than MCLs in shallow monitoring wells. Groundwater analytical results for the transition and bedrock flow zones in Parcel 2 indicate:

- Benzene concentrations greater than MCLs were detected in monitoring wells MW-29TZ, MW-29BR, and MW-34BR.
- Naphthalene concentrations greater than MCLs were detected in monitoring wells MW-29TZ and MW-29BR.

6.3.3 Parcel 3

No constituents were detected at concentrations greater than MCLs in downgradient monitoring wells MW-30S, MW-30TZ, MW-31S, MW-31TZ, MW-32S, or MW-32TZ, located along the Swamp Rabbit Trail immediately upgradient of the Reedy River.

Groundwater analytical results for groundwater monitoring wells located in Parcel 3 indicate:

- Benzene concentrations greater than the MCL were detected in monitoring wells MW-01, MW-02TZ, MW-02BR, MW-03BR, and MW-03BRL.
- Naphthalene concentrations greater than the MCL were detected in monitoring wells MW-01, MW-02TZ, MW-02BR, MW-03BR, MW-03BRL, MW-21BR, and MW-21BRL.
- Bis(2-ethylhexyl)phthalate was detected at a concentration greater than the MCL in MW-02BR. Bis(2-ethylhexyl)phthalate is a common laboratory contaminant and not related to former MGP processes.
- Shallow well MW-03 and transition zone well MW-20 were not sampled due to the presence of DNAPL within the well, although not at sufficient thickness to achieve a reliable measurement (0.01 feet).

6.3.4 Parcel 4

No constituents were detected at concentrations greater than MCLs on Parcel 4.

6.4 Surface Water and Sheen Results

Surface water sample locations are shown in **Figure 2-1**. Surface water analytical results are summarized in **Table 6-7** and sheen analytical results are summarized on **Table 6-8**.

Surface water and sheen sampling results are summarized by Parcel in the following sections.

6.4.1 Parcel 1 and Legacy Elementary

No constituents were detected at concentrations greater than the method detection limit (MDL) in SW-01 located on Legacy Elementary property.

6.4.2 Parcel 2

Surface water and sheen sample analytical results collected from Parcel 2 indicate:

- No constituents were detected at concentrations greater than the MDL in Reedy River sample SW-07 adjacent to Parcel 2.
- Sheen sample SS-01 indicated the presence of petroleum-based hydrocarbons.

6.4.3 Parcel 3

Surface water and sheen sample analytical results collected from Parcel 3 indicate:

- No constituents were detected at concentrations greater than MCLs in Parcel 3 surface water.
- No constituents were detected at concentrations greater than the MDL in Reedy River samples adjacent to Parcel 3 (SW-08 and SW-09).
- Chloromethane was detected at SW-02, SW-04, and SW-06. Chloromethane is a naturally occurring compound. An estimated 99 percent of chloromethane in the environment is derived from natural sources such as rotting wood (ASTDR, 1998).
- Sheen samples SS-02 and SS-03 indicated the presence of petroleum-based hydrocarbons.

6.4.4 Parcel 4

Surface water and sheen sample analytical results collected from Parcel 4 indicate:

- No constituents were detected at concentrations greater than the MDL in Parcel 4 surface water.
- No constituents were detected at concentrations greater than the MDL in Reedy River sample SW-10 adjacent to Parcel 4.

6.4.5 Parcel 5

Surface water and sheen sample analytical results collected from Parcel 5 indicate:

- No constituents were detected at concentrations greater than the MDL in Parcel 5 surface water.
- No constituents were detected at concentrations greater than the MDL in Reedy River samples SW-11 and SW-12 adjacent to Parcel 5.

The reporting limit for benzo(a)pyrene is greater than the regulatory standard; consequently, surface water samples will be collected from selected locations during the next phase of work for analysis of low-level PAHs.

6.5 Sediment Results

Sediment sample locations are shown on **Figure 2-1**. Analytical results are summarized in **Table 6-9**. Results are summarized in the following paragraphs.

The table below lists constituents in sediment with a maximum concentration greater than a RSL for Residential or Industrial Soil. Maximum concentrations for four of the eight constituents identified below were detected in sediment sample SW-14A (0-0.5) located within the historical drainage ditch on Parcel 4 (**Figure 2-1**).

Constituent	USEPA RSL for Residential Soil (mg/kg)	USEPA RSL for Industrial Soil (mg/kg)	Maximum Detection (mg/kg)	Location of Detection	Date of Maximum Detection	Parcel
Benzo(a)anthracene	1.1	21	**22.8**	SW-14A (0-0.5)	3/02/2020	4
Benzo(a)pyrene	0.11	2.1	**20.8**	SW-14A (0-0.5)	3/02/2020	4
Benzo(b)fluoranthene	1.1	21	**23.2**	SW-14A (0-0.5)	3/02/2020	4
Dibenz(a,h)anthracene	0.11	2.1	0.256	SW-06-SED	3/19/2019	3
Indeno(1,2,3-cd)pyrene	1.1	21	10.4	SW-14A (0-0.5)	3/02/2020	4

Notes:
Bold values indicate concentration greater than USEPA Industrial RSLs
mg/kg – milligrams per kilogram
RSL – Regional Screening Level

Results of the sediment assessment by Parcel (Parcels 1 through 5) are summarized in the following sections.

6.5.1 Parcel 1 and Legacy Elementary

No constituents were detected at concentrations greater than an Industrial RSLs at sediment sample location SW-01-SED located on Legacy Elementary property.

6.5.2 Parcel 2

No constituents were detected at concentrations greater than an Industrial or Residential RSL at Reedy River sediment sample location SW-07-SED located adjacent to Parcel 2.

6.5.3 Parcel 3

Sediment sample analytical results collected from Parcel 3 indicate:

- No constituents were detected at concentrations greater than an Industrial RSL at sediment sample locations on Parcel 3.
- No constituents were detected greater at concentrations greater than MDLs in Reedy River sediment samples SW-08-SED or SW-09-SED located adjacent to Parcel 3.

6.5.4 Parcel 4

Sediment sample analytical results collected from Parcel 4 indicate:

- No constituents were detected at concentrations greater than MDLs in Reedy River sediment samples SW-10-SED located adjacent to Parcel 4.
- Benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene were detected at SW-14A (0-0.5) at concentrations greater than their respective Industrial RSLs.
- **Appendix K** provides evaluation of sediment samples collected from Parcels 4 and 5 and concludes that results of PAH analysis detected in these sediment samples are inconsistent with the NAPL signature of TLM collected at MW-06A. Those samples may either be heavily weathered or influenced by sources other than an MGP source.

6.5.5 Parcel 5

Sediment sample analytical results collected from Parcel 5 indicate:

- No constituents were detected at concentrations greater than Industrial RSLs in Reedy River sediment samples SW-11-SED or SW-12 -SED located adjacent to Parcel 5.
- Benzo(a)pyrene was detected at SW-15 (0.5-1) and SW-16 (0-0.5) at concentrations greater than the Industrial RSL.
- **Appendix K** provides evaluation of sediment samples collected from Parcels 4 and 5 and concludes that results of PAH analysis detected in these sediment samples are inconsistent with the NAPL signature of TLM collected at MW-06A.

The Parcel 4 and 5 samples may be either heavily weathered or influenced by sources other than an MGP source.

6.6 Investigation Derived Waste Management

Investigation Derived Waste (IDW) generated during collection of soil cores, monitoring well installation, and environmental media sampling were contained for off-Site disposal as described below:

- Solids were temporarily contained in 55-gallon drums and transported to VLS in Mauldin, South Carolina, for proper disposal.
- Solids containing NAPL were segregated, placed in 55-gallon drums, and transported to Waste Management, Richland County Landfill in Elgin, South Carolina, for proper disposal as a special waste.
- Liquids, including decontamination fluids, drilling fluids, development water, and purge water, were contained in 55-gallon drums or 275-gallon totes and transported to VLS for proper disposal.

IDW generated during the investigation meets the requirements of 40 Code of Federal Regulations (CFR) 261.24(a) – Manufactured Gas Plant Wastes TCLP Exemption.

7.0 BASELINE HUMAN HEALTH RISK ASSESSMENT AND SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

A human health and ecological risk assessment was performed and is included as **Appendix L**. The HHRA consisted of a screening level approach to assess potential risks from exposure to surface water and soil/sediment and a baseline assessment using historical and new groundwater data. In addition, surface and sub-surface soil samples collected in the previously excavated area, Parcels 1 and 2, were evaluated to determine whether additional remediation is warranted. A SLERA was performed to assess potential effects on wildlife. The complete data evaluation, data screening, and risk characterization is provided in **Appendix L**. The human health and ecological CSM and risk assessment results are summarized below.

7.1 Conceptual Site Models

Conceptual site models were developed to guide identification of exposure pathways, exposure routes, and potential receptors for evaluation. The CSM describes the sources and potential pathways through which constituents migrate to other environmental media and, in turn, to potential human and ecological receptors. For an exposure pathway to be complete, the following conditions must exist (USEPA, 1989):

1. A source and mechanism of chemical release to the environment
2. An environmental transport medium (*e.g.*, air, water, soil)
3. A point of potential contact with the receiving medium by a receptor
4. A receptor exposure route at the point of contact (*e.g.*, inhalation, ingestion, dermal contact)

The CSM is meant to be a "living" model that can be updated and modified as additional data and information become available.

The human health CSM is presented in **Figure 2** of **Appendix L**. Potentially exposed populations include:

Current Land Use

- CSX Site workers
- Trespassers/recreators (Adolescent receptors represent the most sensitive age group of this population)

Future Land Use

- Construction/utility workers,
- Site workers
- Trespassers/recreators (Adolescent receptors represent the most sensitive age group of this population)

For each of these potentially exposed populations, potential exposure pathways include:

Construction/Utility Worker Scenario
Construction/utility workers may contact affected media while conducting construction/utility maintenance activities, specifically those requiring subsurface disturbance. Construction/utility workers may contact shallow groundwater while conducting subsurface activities (*i.e.*, excavation/trenching activities) via incidental ingestion, dermal contact, and inhalation of vapors.

Site Worker Scenario
Workers could also be exposed to constituents in surface water and sediment via incidental ingestion, dermal contact, and inhalation of vapors and released particulates while conducting maintenance activities. In addition, Site workers may inhale vapors intruding from subsurface soil and/or groundwater into the railroad field office.

Trespasser/Recreator Scenario
Trespassers/recreators could be exposed to constituents via incidental ingestion, dermal contact, and inhalation of vapors and particulates released from surface water and sediment. Recreators using the Swamp Rabbit Trail could trespass onto the adjacent Site and contact surface water and sediment in the floodplain area.

The ecological CSM is provided in **Figure 4** of **Appendix L**. Potential receiving media for wildlife at the Site include soil, sediment, and surface water.

7.2 Risk Assessment Results

Human Health Screening Assessment
Surface soil, sub-surface soil, sediment, surface water, and groundwater analytical data were compared with USEPA-recommended screening levels. A total of 33 constituents were evaluated. On-Site and off-Site surface water analytical results showed that constituent concentrations were less than screening values. Several maximum constituent concentrations detected in groundwater, soil, and sediment were greater that screening values and identified as constituents of potential concern (COPCs).

Baseline Human Health Risk Assessment
The baseline HHRA evaluated the hypothetical exposure of a Site construction worker to constituents in groundwater. Exposure may occur through incidental ingestion, dermal contact, and inhalation of vapors. It is assumed that construction workers would use appropriate personal protective equipment - such as gloves, boots, and safety glasses - to limit exposure to environmental media, thereby limiting risks from chemical exposure.

Appendix L provides details on the results of the development of exposure point concentrations, exposure quantification, toxicity assessment and risk characterization. Potential cancer risks are indicated by values greater than 1×10^{-4}. Potential non-cancer risks are indicated by hazard quotients (HQs) greater than 1.0.

- Risks, associated with incidental ingestion exposure, were not identified.
- Non-carcinogenic risks, associated with dermal exposure, were not identified. Dermal cancer risks (4.54×10^{-6}) were identified.
- Inhalation cancer risks (1.87×10^{-4}) and non-cancer risks (HQ = 121) were identified.
- Cumulative risks to a construction worker associated with incidental ingestion, dermal contact, and inhalation of vapors from groundwater exposure are indicated by a cancer risk value of 1.92×10^{-4} and a non-cancer hazard index of 121.

Exposure to Soils in Parcels 1 and 2
Surface and sub-surface soil samples collected in the previously excavated area, Parcels 1 and 2, were evaluated to determine whether additional source abatement is warranted. Analytes detected in soil samples were compared with USEPA RSLs per the methods outlined in this human health risk assessment. Analytes greater than the screening values were retained for a baseline assessment for construction worker and potential residential exposure scenarios. Output from the risk model was used to calculate Site Specific Remediation Goals (SSRGs).

Parcels 1 and 2 are zoned I-1 for industrial or commercial use. There is no evidence of risks to a construction worker exposed to soils remaining in the previously excavated area, Parcels 1 and 2. Cumulative cancer risk values do not exceed 1×10^{-6}, and non-cancer HQs do not exceed 0.1. For the residential scenario pertaining to surface soils, the cumulative cancer risk is 8.7×10^{-6}, indicating a potential cancer risk in excess of the

ELCR. There is no indication of non-cancer risk for the residential exposure scenario (HQ = $4.3x10^{-2}$).

Screening Level Ecological Risk Assessment
A screening level ecological risk assessment was conducted that compared maximum constituent concentrations detected in surface water, sediment and soil to ecological screening values (**Appendix L**). No evidence of risks to wildlife was identified based on exposure to surface water. On-Site and off-Site surface water analytical results showed that constituent concentrations were less than screening values.

Several constituents were detected in soil and sediment samples at concentrations greater than ecological screening values. Results are summarized below and detailed in **Appendix L**.

- **Surface soil.** Sixty-four (64) percent of constituents evaluated had concentrations less than corresponding ecological screening values, with 11 constituents identified as COPCs.
- **Sub-surface soil.** Forty-nine (49) percent of constituents evaluated had concentrations less than corresponding ecological screening values, with 16 constituents identified as COPCs.
- **Sediment.** Twenty-six (26) percent of constituents analyzed in on-Site sediments had concentrations less than corresponding screening levels, with 20 identified as COPCs. Of the 12 constituents evaluated in off-Site sediments, 10 constituents were identified as COPCs.

In accordance with the typical risk assessment framework, a scientific/management decision is warranted. Next steps generally include a baseline ecological risk assessment to evaluate potential risks of COPCs in soil and sediment to determine whether risk management or remedial measures are needed.

8.0 FINDINGS AND RECOMMENDATION

8.1 Summary of Findings

The Bramlette Road MGP operated from 1917 through 1952. Coal gas tar and CWG tar were generated as a byproduct during the manufacture of gas. VOCs and SVOCs commonly associated with these tars are present at the Site and are the subject of the RI assessment.

In accordance with VCC 16-5857-RP, RI activities to delineate the source, nature, and extent of potential impacts resulting from the operations of the MGP began in 2017. Groundwater, soil, surface water, and sediment analytical results for VOCs and SVOCs and visual observation of core samples have been used to delineate the extent of affected media.

Site characteristics consistent with Piedmont geology include regolith, a transition zone, and bedrock. Topography at the Site is relatively flat and low-lying. Since the Site is located mostly within the 100-year floodplain of the Reedy River, alluvial deposits are found across most of the Site, include a laterally extensive coarse sand deposit that directly overlies saprolite. Surface water features within and adjacent to the Site include man-made drainage ditches, jurisdictional wetlands, and the Reedy River. The drainage ditches are considered an important aspect of the conceptual site model as discussed in **Section 8.2**. Groundwater flow is generally to the southwest toward the Reedy River from Parcel 1. Groundwater is encountered at depths of less than 1 foot to 12.5 feet bls within alluvial and unconsolidated deposits. Vertical gradients at the Site are generally neutral, with a maximum vertical gradient of -1.42 (upward direction) from the transition zone (MW-20) to the surficial zone (MW-03) in Parcel 3. Groundwater velocity at the Site ranges from 13 feet per year to 294 feet per year as discussed in **Section 5.3**.

8.2 Conceptual Site Model

Aspects of the CSM are described below. A plan view representation of the CSM, including the extent of visually observed NAPL and affected groundwater, is shown on **Figure 8-1**.

8.2.1 Source

The primary source of environmental effects at the Site are the historical operations of the Bramlette Road MGP (described in further detail in **Appendix A**). Forensic analysis of two NAPL samples determined the presence of unweathered tar from a coal carbonization process and a lightly weathered tar from a CWG process within Parcel 3, which is downgradient from the former MGP on Parcel 1. Both processes were used to manufacture gas at the Bramlette Road MGP. Source control measures include the cessation of MGP operations nearly 70 years ago and removal of more than 61,000 tons of affected soil and debris on Parcel 1 in 2001-2002.

8.2.2 Migration Pathways

Historical drainage ditches between the source area (Parcel 1) and Parcels 4 and 5 are visible in historical imagery taken during MGP operations (**Appendix B**). Observed TLM consistent with the location of these ditches indicates a likely migration pathway for overland flow resulting from MGP operations.

NAPL at the Site has a propensity to sink below the water table because it is denser than water (**Appendix I**). The dense non-aqueous phase liquid (DNAPL) will migrate vertically through the unsaturated zone until it encounters the water table. Once NAPL has accumulated enough mass for gravitational pressure to overcome the entry pressure of the underlying capillary fringe, migration vertically through the water column will continue until an impermeable or less permeable matrix is encountered. This is evident with observed OLM within the coarse sand atop saprolite and the distribution of dissolved constituents within groundwater. Coarse sand deposits provide relatively porous matrix for the accumulation of residual NAPL while the less permeable saprolite inhibits additional downward migration.

Overall, the bedrock hydraulic conductivity across the Site shows a decreasing trend with increasing depth below the top of rock down to approximately 60 feet below the top of rock. This finding is consistent with the literature. Gale (1982) showed that bedrock well yield and fracture permeability decrease systematically as a function of depth. Neretnieks (1985) also showed a systematic decline in bulk bedrock hydraulic conductivity with increasing depth.

The calculated fracture apertures in bedrock across the Site decrease with depth below the top of bedrock. This finding is also consistent with information reported in the literature. Snow (1968) published fracture aperture as a function of depth for several rock types, including crystalline rocks such as granite, gneiss, and schist, and concluded that fracture apertures generally decrease with increasing depth. With increasing depth, the weight of the overlying rock increases. This increases the effective stress and causes the fracture walls to deform and flatten, reducing fracture apertures with increasing depth.

Groundwater discharge to surface water is a potential migration pathway. Downgradient monitoring wells located along the Swamp Rabbit Trail and adjacent to the Reedy River have not contained concentrations of VOCs or SVOCs greater than MCLs. Surface water samples collected from the Reedy River did not contain VOCs or SVOCs greater than MDLs.

8.2.3 Potentially Affected Media

Surface soil, subsurface soil, groundwater, surface water, and sediment were evaluated to determine the nature and extent of effects from historical MGP operations at the Site.

8.2.4 Nature and Extent

Based on results of near-surface soil sampling and risk assessment calculations, the source area removal action at Parcel 1 was effective in reducing human health risk to acceptable levels for the intended property use (industrial/commercial). Visual observations of NAPL have identified TLM associated with clay deposits near historical ditches and OLM associated with sand deposits that overlie saprolite on Parcels 1, 2, and 3. NAPL was notably absent within saprolite and transition zone cores. NAPL has not been observed in on-Site sediments or Reedy River sediments.

Multiple rounds of groundwater sampling during the RI have delineated the extent of affected shallow groundwater to Parcels 1, 2, and 3 and the extent of affected transition zone groundwater to Parcels 2 and 3. DNAPL has been observed in shallow well MW-03 and transition zone well MW-20 in the central portion of Parcel 3. Additional bedrock wells recently have been installed to further delineate the horizontal and vertical extent of affected groundwater within the bedrock flow zone.

Concentrations of VOCs and SVOCs in surface water were less than the MDL in the Reedy River and less than MCLs in on-Site surface water.

Additional assessment of ditch sediments and underlying soil are planned to further identify the extent of SVOC concentrations.

8.2.5 Risk Exposure

The baseline HHRA identified risk to a construction worker who might be exposed to affected groundwater through incidental ingestion, dermal contact, and inhalation of vapors. It is assumed that construction workers would use appropriate personal protective equipment - such as gloves, boots, and safety glasses - to limit exposure to environmental media, thereby limiting risks from chemical exposure.

Based on soil sampling results and risk assessment calculations, there is no evidence of unacceptable risks to a construction worker exposed to soils remaining in the previously excavated area within Parcels 1 and 2.

On-Site and off-Site surface water analytical results showed that constituent concentrations were less than ecological screening values. Several maximum constituent concentrations detected in soil and sediment samples were greater than screening values and were retained as COPCs, which may be evaluated further in a baseline ecological risk assessment.

8.3 Recommendations

The following activities to complete delineation of the horizontal and vertical extent of MGP-related constituents in affected media are planned for 2020:

- Installation of 12 additional groundwater monitoring wells
- Completion of a Site-wide groundwater monitoring event (approximately 71 wells)
- Submittal of a workplan to SCDHEC that describes a ditch assessment for delineating extent of VOCs and SVOCs in historical ditches associated with the MGP
- Completion of the ditch assessment in accordance with the approved work plan and after receiving an amended Environmental Right of Entry access agreement

The results of these additional RI activities can be summarized and provided in an RI assessment report addendum.

9.0 REFERENCES

Agency for Toxic Substances and Disease Registry (ASTDR) U.S. Department of Health and Human Services. "Toxicological Profile for Chloromethane." December 1998. 288 p.

ASTM International. "Standard Practice for Passive Soil Gas Sampling in the Vadose Zone for Source Identification, Spatial Variability Assessment, Monitoring, and Vapor Intrusion Evaluations."

Duke Energy Site Remediation Services Group. 2000. "Phase III Investigation and Site Assessment Report: CSXT/Vaughn Landfill and Bramlette Road MGP Sites."

Duke Energy Site Remediation Services Group. 2003. "Remedial Action Plan Final Report: CSXT/Vaughn Landfill and Bramlette Road MGP Sites."

ITRC (Interstate Technology & Regulatory Council). 2017. Characterization and Remediation of Fractured Rock. FracRx-1. Washington, D.C.: Interstate Technology & Regulatory Council, Fractured Rock Team. www.itrcweb.org.

ERM NC, Inc. 2018. "Groundwater Remedial Investigation Work Plan Addendum: Bramlette MGP Site."

Gale, J.E. 1982. Assessing the permeability characteristics of fractured rock. Geological Society of America Special paper 189.

Harned, D.A., and Daniel C.C, III, 1992, The transition zone between bedrock and saprolite—Conduit for contamination?, in Daniel, C.C., III, White, R.K., and Stone, P.A., eds., Ground water in the Piedmont—Proceedings of a conference on ground water in the Piedmont of the eastern United States: Clemson, S.C., Clemson University, p. 336–348.

Keller, A., 1998. High-resolution, non-destructive measurement and characterization of fracture apertures. Int. J. Rock Mech. Min. Sci., 35(8), pp. 1037-1050.

Morin, R.H., G.B. Carleton, and S. Poirier. (1997). Fractured-Aquifer Hydrogeology from Geophysical Logs; The Passaic Formation, New Jersey. *Ground Water*, 35(2), 328-338.

Nelson, Arthur E., Horton, Jr. J. Wright, Clarke, James W. 1998. Geologic Map of the Greenville 1° x 2° Quadrangle, South Carolina, Georgia, and North Carolina. Miscellaneous Investigation Series. US Geological Survey. Map I-2175 (Sheet 1 of 2).

Neretnieks, I. 1985. Transport in fractured rocks. Hydrology of Rocks of Low Permeability. Memoirs. International Association of Hydrogeologists, v. XVII, part 1 of 2, pp. 301-318.

Snow, D.T. 1968. Rock fracture spacings, openings, and porosities." J. Soil Mech. Found. Div., Proc. Amer. Soc. Civil Engrs., v. 94, pp. 73-91.

Steele, A., D.A. Reynolds, B.H. Kueper, and D.N. Lerner. "Field determination of mechanical aperture, entry pressure and relative permeability of fractures using NAPL injection." *Géotechnique* 56, no. 1 (2006): 27-38.

South Carolina Department of Health and Environmental Control. 2016. "Regulation 61-71 Well Standards."

South Carolina Department of Health and Environmental Control. 2016. "Voluntary Cleanup Contract in the Matter of CSXTF Bramlette Road Site, Greenville County and Duke Energy Carolinas, LLC."

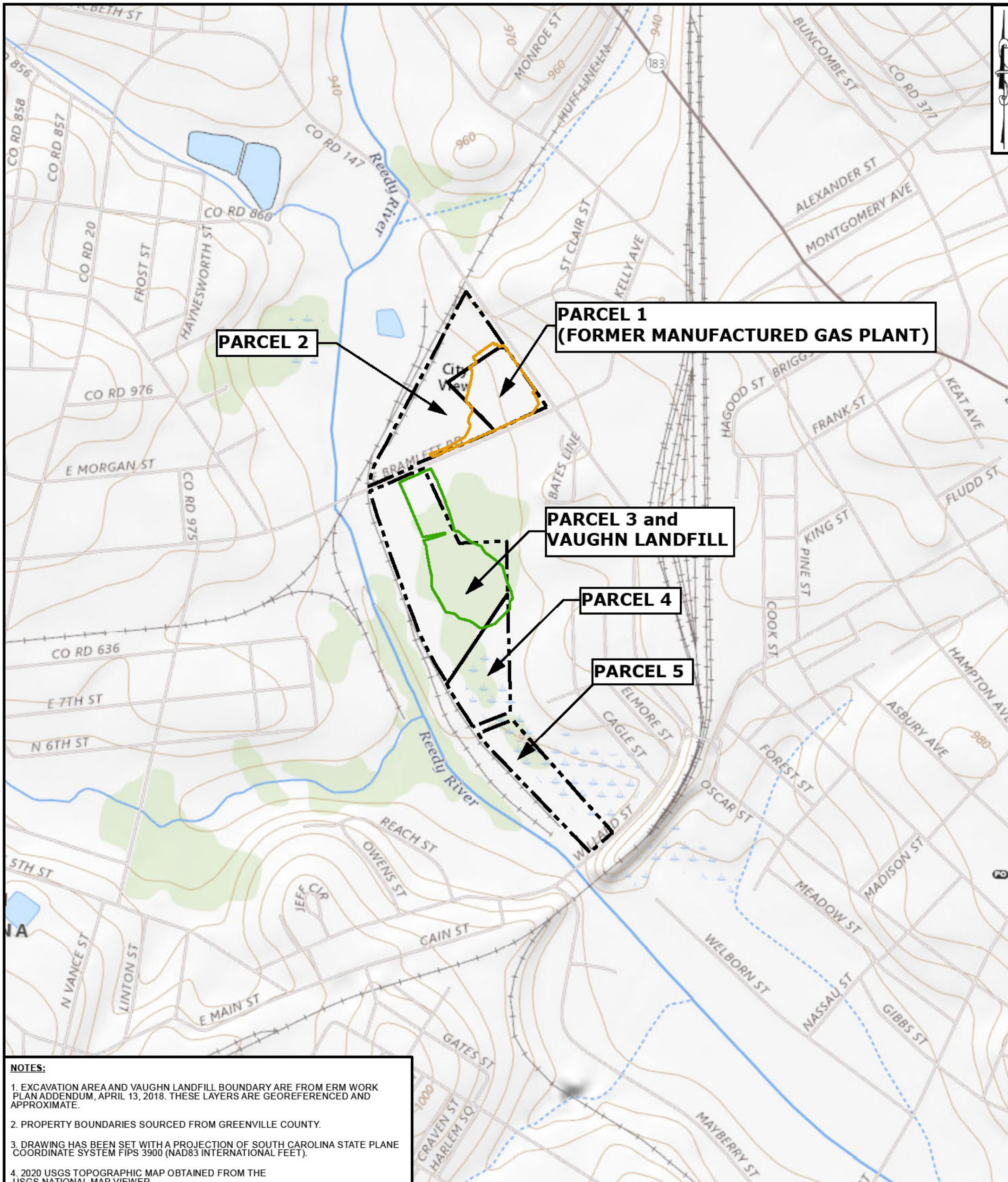
SynTerra Corporation. 2018. "Quality Assurance Project Plan (QAPP): Former Bramlette MGP Site."

Thiem, G. 1906. Hydrologische methoden. Leipzig: Gebhardt, 56 pages.

Willoughby, Howard, and Nystrom. 2005. Generalized Geologic Map of South Carolina. South Carolina Department of Natural Resources, Geological Survey. GGMW-1.

US EPA. 2014. "Passive Samplers for Investigations of Air Quality: Method Description, Implementation, and Comparison to Alternative Sampling Methods."

FIGURES



NOTES:

1. EXCAVATION AREA AND VAUGHN LANDFILL BOUNDARY ARE FROM ERM WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.

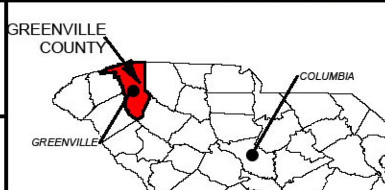
2. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

3. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

4. 2020 USGS TOPOGRAPHIC MAP OBTAINED FROM THE USGS NATIONAL MAP VIEWER.

DUKE ENERGY CAROLINAS

synTerra



www.synterracorp.com

FIGURE 1-1
USGS TOPOGRAPHIC MAP
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

DRAWN BY: C. DAVIS	DATE: 05/02/2019
REVISED BY: C. DAVIS	DATE: 06/17/2020
CHECKED BY: T. PLATING	DATE: 06/17/2020
APPROVED BY: T. PLATING	DATE: 06/17/2020
PROJECT MANAGER: T. PLATING	

GRAPHIC SCALE
400 0 400 800
(IN FEET)

NOTES:

1. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).

2. EXISTING SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.

3. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

4. SURFACE WATER/ SEDIMENT AND SHEEN SAMPLING LOCATIONS WERE RECORDED USING A HANDHELD GPS DEVICE AND ARE APPROXIMATE.

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

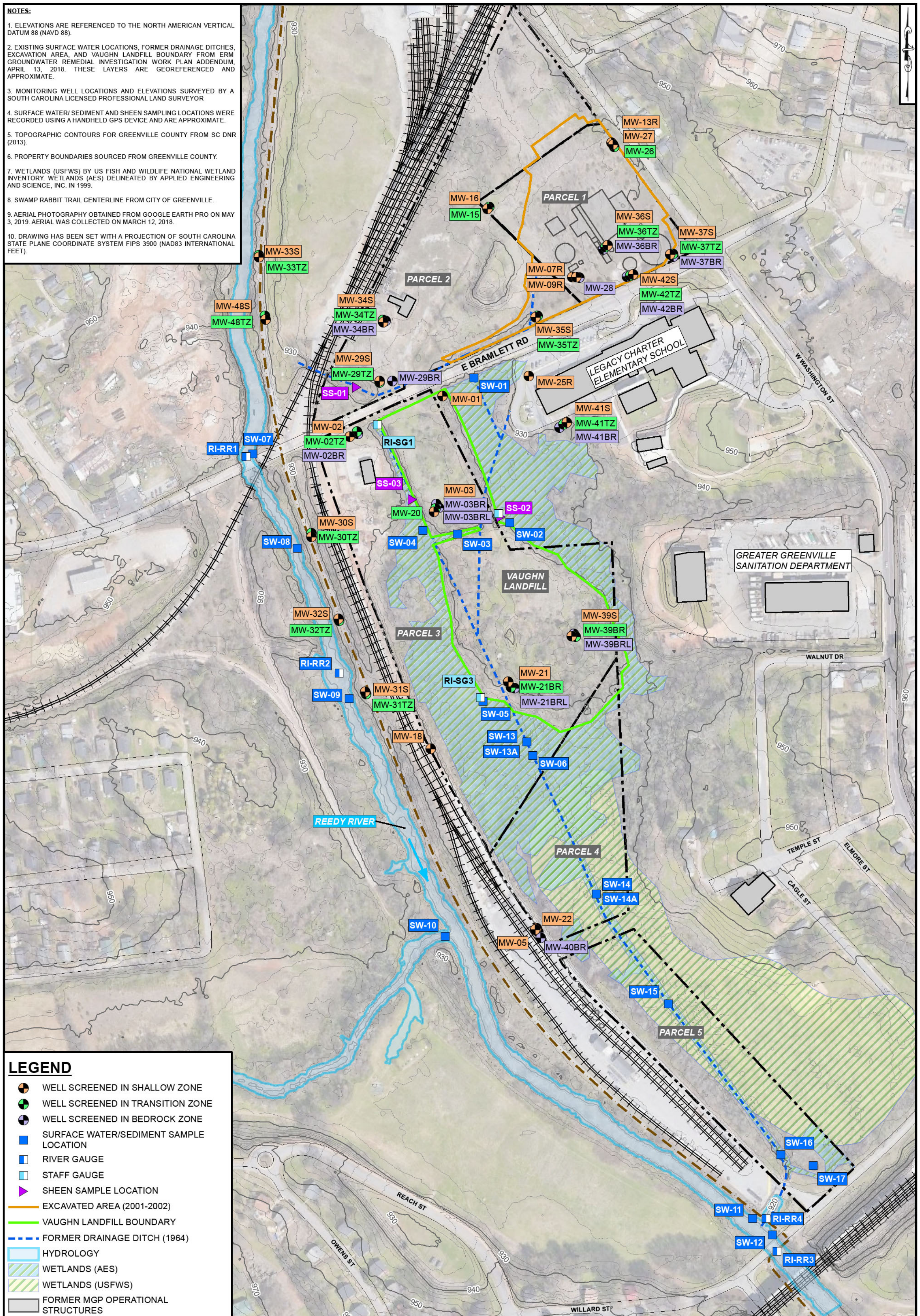
6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

7. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

8. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

9. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

10. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).



LEGEND

- WELL SCREENED IN SHALLOW ZONE
- WELL SCREENED IN TRANSITION ZONE
- WELL SCREENED IN BEDROCK ZONE
- SURFACE WATER/SEDIMENT SAMPLE LOCATION
- RIVER GAUGE
- STAFF GAUGE
- SHEEN SAMPLE LOCATION
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

DUKE ENERGY CAROLINAS

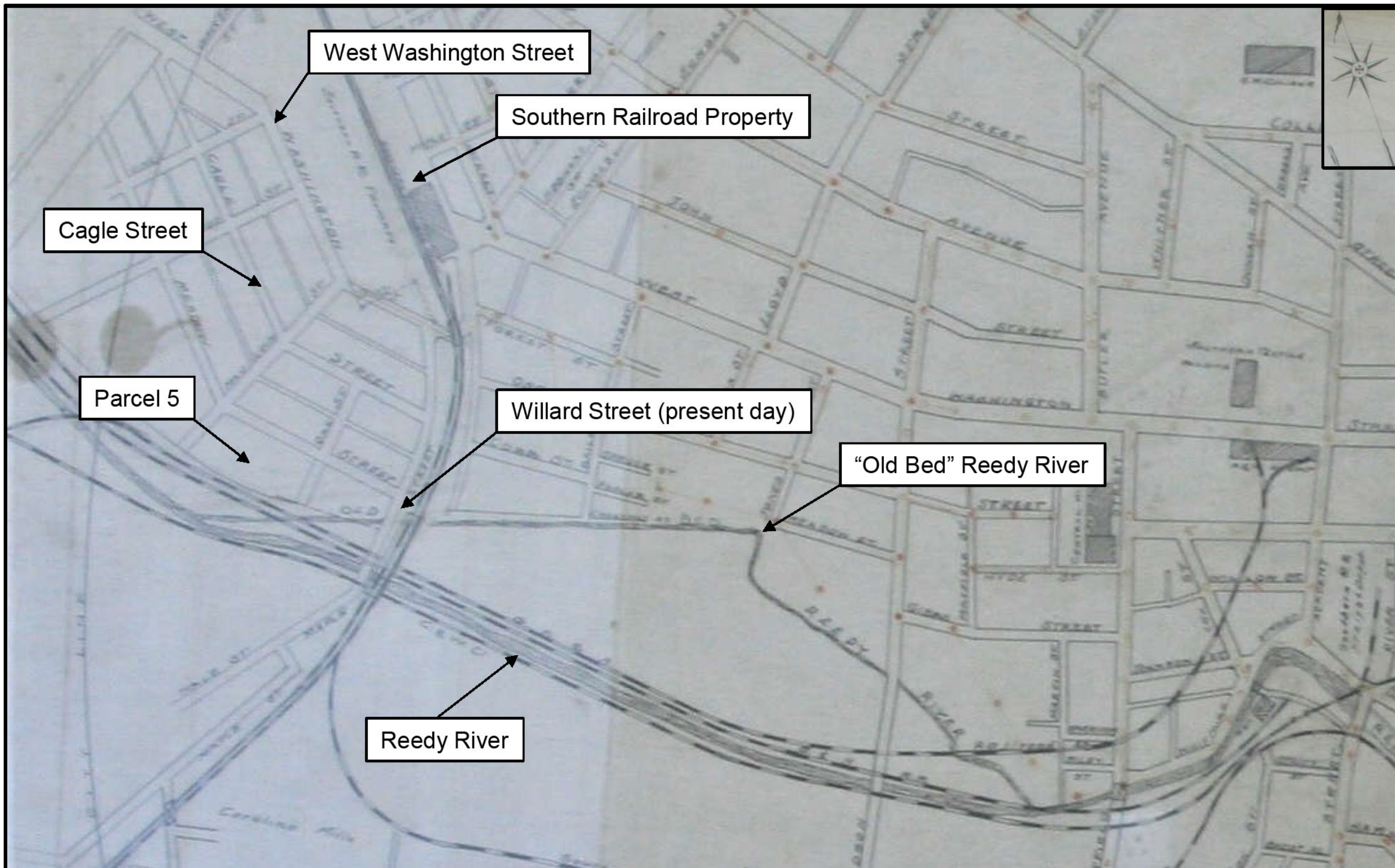
synTerra

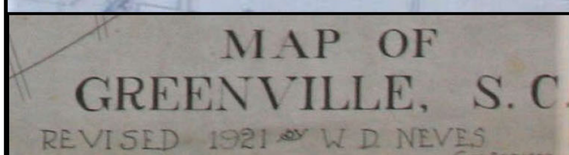
GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 05/21/2019
REVISED BY: C. DAVIS DATE: 06/23/2020
CHECKED BY: M. MASTBAUM
APPROVED BY: T. PLATING
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 2-1
SITE LAYOUT MAP
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA





Revised Sewer and Street Map 1921, Office of City Engineer (Greenville, SC)

DUKE ENERGY CAROLINAS

synTerra

DRAWN BY: T. PLATING
DATE: 06/19/2020
REVISED BY:
CHECKED BY: M. MASTBAUM
APPROVED BY: T. PLATING
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 2-2
MAP OF GREENVILLE
REVISED 1921 (EXCERPT)
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

LEGEND

- EXCAVATED AREA (2001-2002)
- FORMER AND/OR CURRENT DRAINAGE DITCH
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- ROAD
- RAILROAD

NOTES:

1. FORMER MGP OPERATIONAL STRUCTURES ARE VERIFIED PRESENT FOR THE DATES LISTED BASED ON REVIEW OF HISTORICAL AERIAL IMAGERY (YEARS: 1943, 1948, 1955, 1957, 1959 AND 1960)

2. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

3. AERIAL PHOTOGRAPHY SHOT BY A SYNTERRA LICENSED UAS PILOT ON FEBRUARY 21, 2020.

4. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

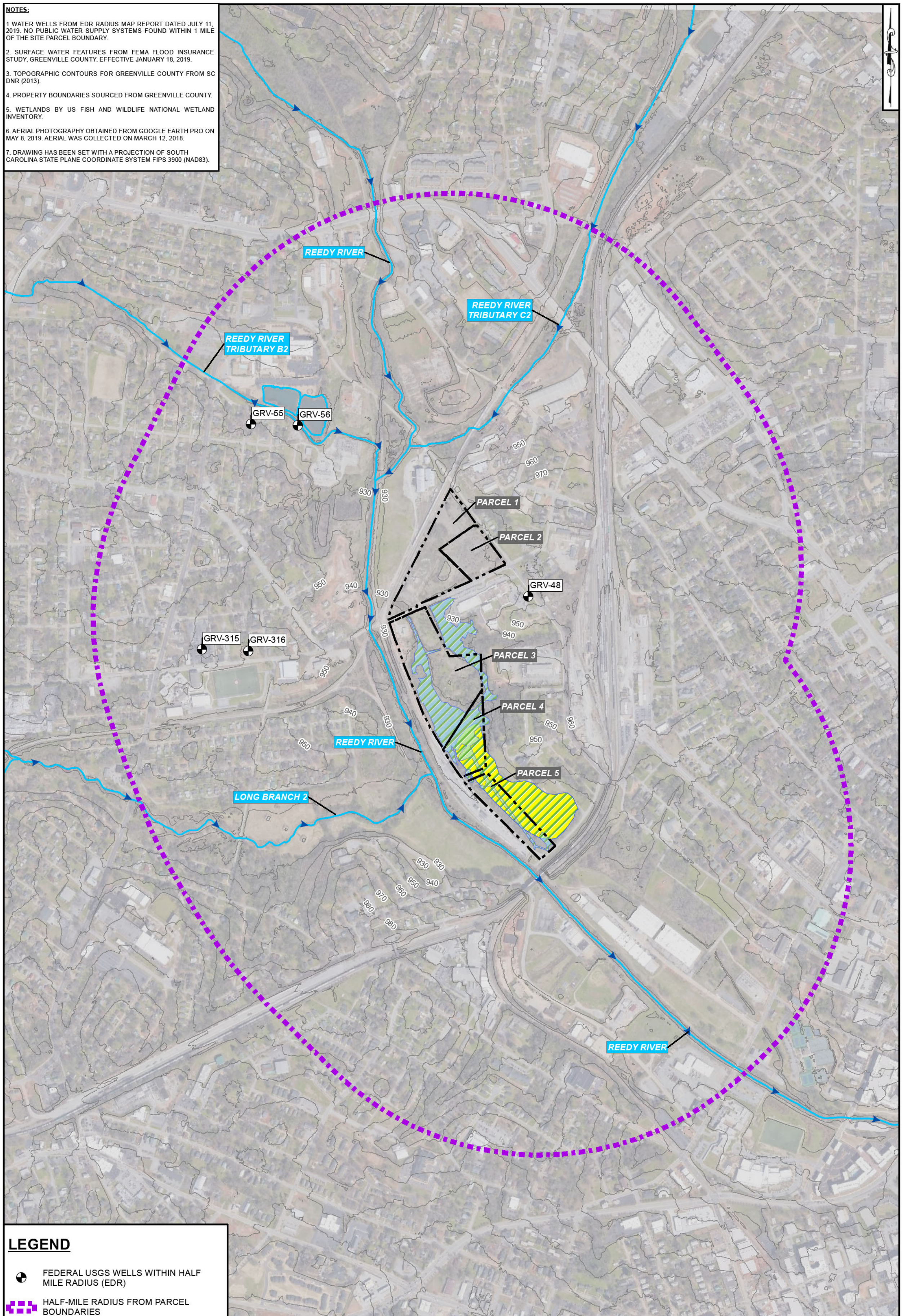
synTerra

GRAPHIC SCALE
30 0 30 60
(IN FEET)

DRAWN BY: C. ALMOND	DATE: 05/21/2019
REVISED BY: C. DAVIS	DATE: 06/20/2020
CHECKED BY: M. MASTBAUM	DATE: 06/20/2020
APPROVED BY: T. PLATING	DATE: 06/20/2020
PROJECT MANAGER: T. PLATING	

www.synterracorp.com

FIGURE 2-3
PARCEL 1 SOURCE AREA
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

1 WATER WELLS FROM EDR RADIUS MAP REPORT DATED JULY 11, 2019. NO PUBLIC WATER SUPPLY SYSTEMS FOUND WITHIN 1 MILE OF THE SITE PARCEL BOUNDARY.

2. SURFACE WATER FEATURES FROM FEMA FLOOD INSURANCE STUDY, GREENVILLE COUNTY. EFFECTIVE JANUARY 18, 2019.

3. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

4. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

5. WETLANDS BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY.

6. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 8, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

7. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83).

LEGEND

- FEDERAL USGS WELLS WITHIN HALF MILE RADIUS (EDR)
- HALF-MILE RADIUS FROM PARCEL BOUNDARIES
- STREAM (FEMA)
- WETLANDS (AES)
- WETLANDS (USFWS)
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)

DUKE ENERGY CAROLINAS

synTerra

GRAPHIC SCALE
400 0 400 800
(IN FEET)

DRAWN BY: C. ALMOND DATE: 05/21/2019
REVISED BY: C. CURRIER DATE: 06/26/2020
CHECKED BY: T. PLATING DATE: 06/26/2020
APPROVED BY: T. PLATING DATE: 06/26/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 2-4
HALF-MILE RADIUS RECEPTOR MAP
FORMER BRAMLETTE MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. SOIL BORING AND TEST PIT LOCATIONS ARE BASED ON GPS COORDINATES AND ARE APPROXIMATE.

2. PASSIVE SOIL GAS SURVEY LOCATIONS ARE LOCATED WITHIN 7 FEET OF NEAR SURFACE SOIL BORINGS.

3. ng - NANOGRAMS

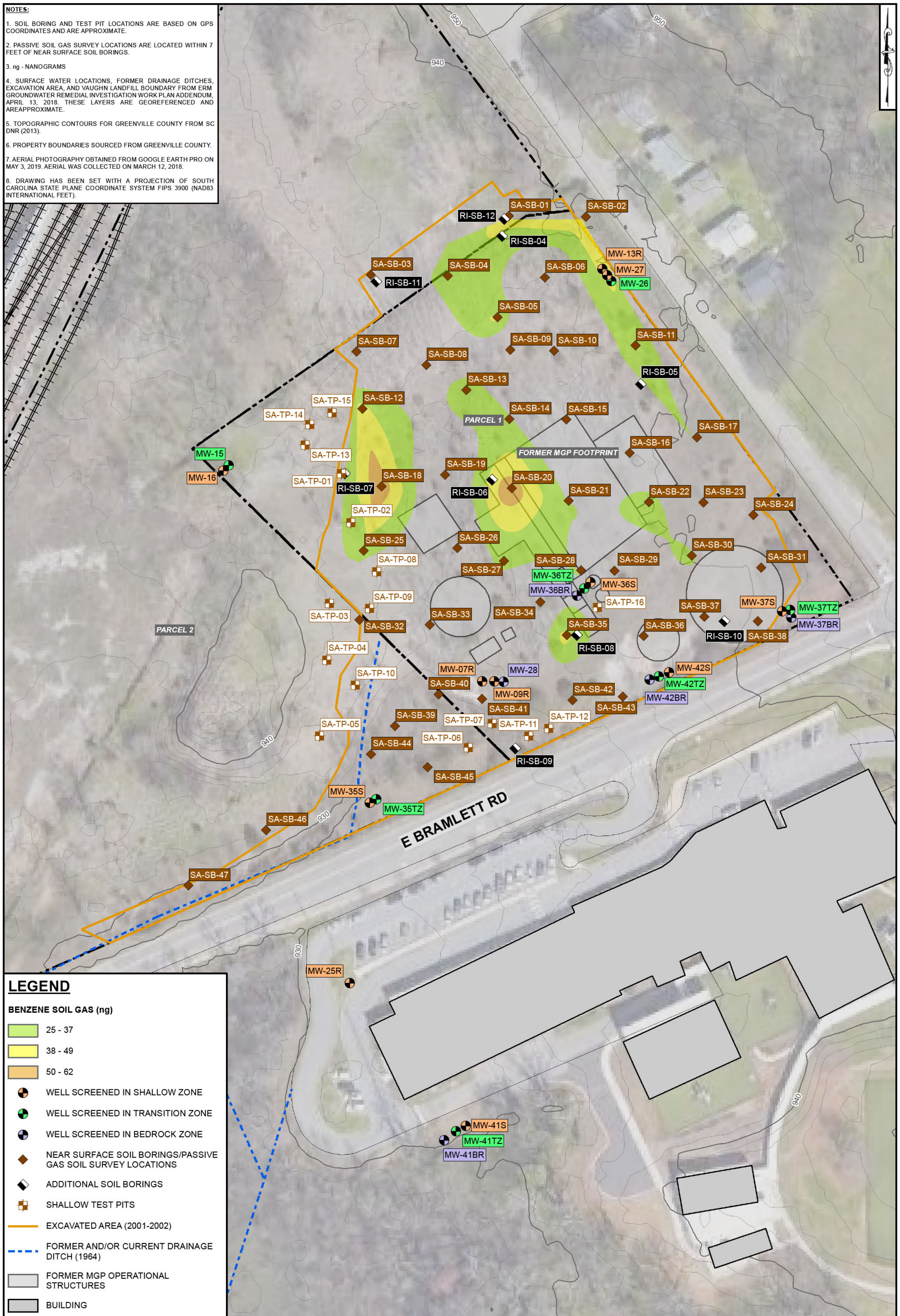
4. SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND AREAPPROXIMATE.

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

7. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

8. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).



LEGEND

BENZENE SOIL GAS (ng)

- 25 - 37
- 38 - 49
- 50 - 62
- WELL SCREENED IN SHALLOW ZONE
- WELL SCREENED IN TRANSITION ZONE
- WELL SCREENED IN BEDROCK ZONE
- NEAR SURFACE SOIL BORINGS/PASSIVE GAS SOIL SURVEY LOCATIONS
- ADDITIONAL SOIL BORINGS
- SHALLOW TEST PITS
- EXCAVATED AREA (2001-2002)
- FORMER AND/OR CURRENT DRAINAGE DITCH (1964)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- ROAD
- RAILROAD

DUKE ENERGY CAROLINAS

synTerra

GRAPHIC SCALE
40 0 40 80
(IN FEET)

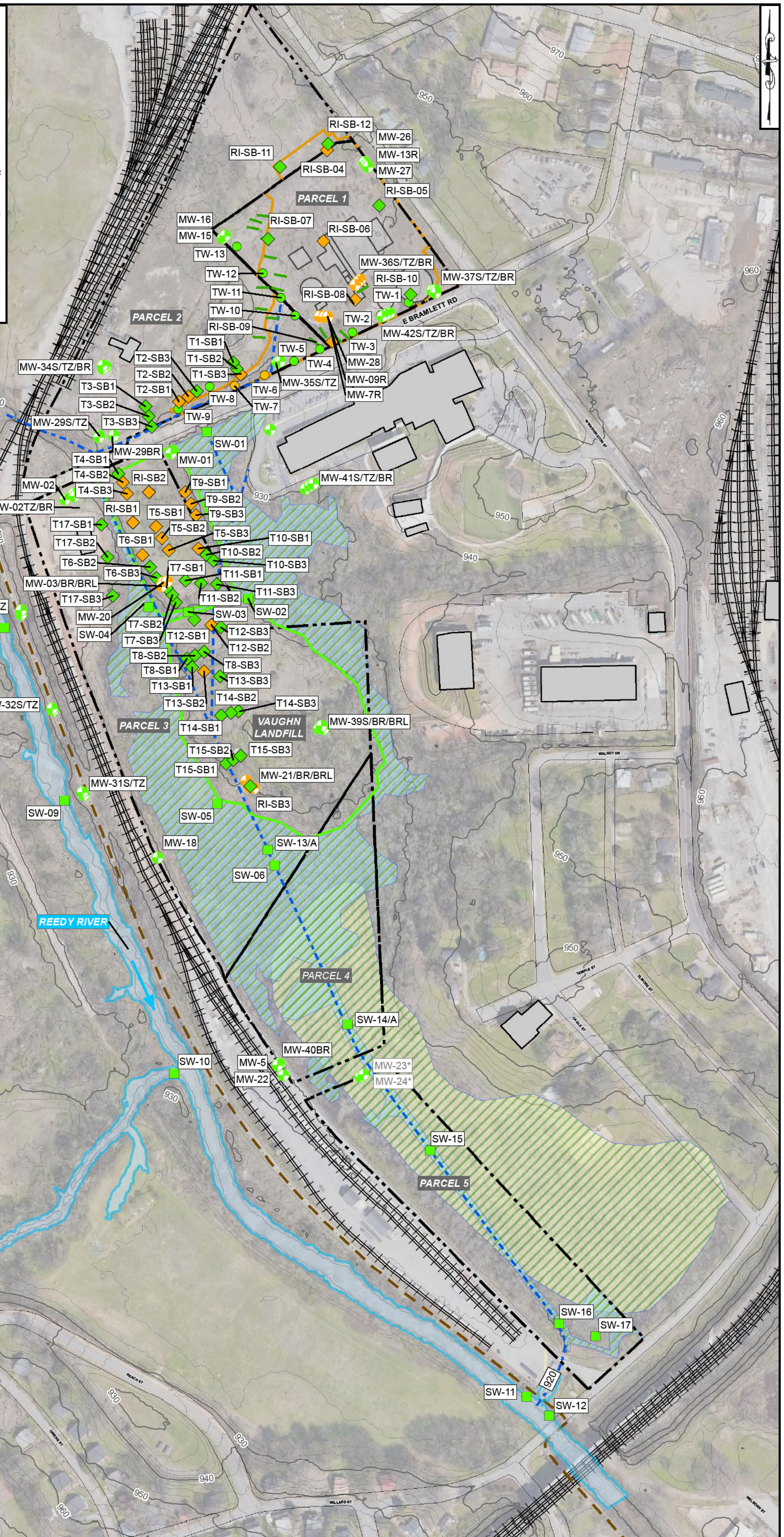
DRAWN BY: C. DAVIS DATE: 05/21/2019
REVISED BY: C. DAVIS DATE: 06/21/2020
CHECKED BY: M. MASTBAUM DATE: 06/21/2020
APPROVED BY: T. PLATING DATE: 06/21/2020
PROJECT MANAGER: P. WALDREP

www.synterracorp.com

FIGURE 4-1
RIWP-A SOURCE AREA VERIFICATION SOIL SAMPLING AND PASSIVE GAS SURVEY
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. * - WELL ABANDONED
2. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).
3. EXISTING SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR
5. SURFACE WATER/ SEDIMENT AND SHEEN SAMPLING LOCATIONS WERE RECORDED USING A HANDHELD GPS DEVICE AND ARE APPROXIMATE.
6. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).
7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
8. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.
9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.
11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).



LEGEND

- MONITORING WELL - NO VISUAL NAPL
- MONITORING WELL - VISUAL NAPL
- SOIL BORING - NO VISUAL NAPL
- SOIL BORING - VISUAL NAPL
- SURFACE WATER/ SEDIMENT SAMPLE LOCATION - NO VISUAL NAPL
- TEMPORARY MONITORING WELL - VISUAL NAPL
- TEMPORARY MONITORING WELL - NO VISUAL NAPL
- TEST PIT LINE- NO VISUAL NAPL
- VAUGHN LANDFILL BOUNDARY
- EXCAVATED AREA (2001-2002)
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

DUKE ENERGY CAROLINAS

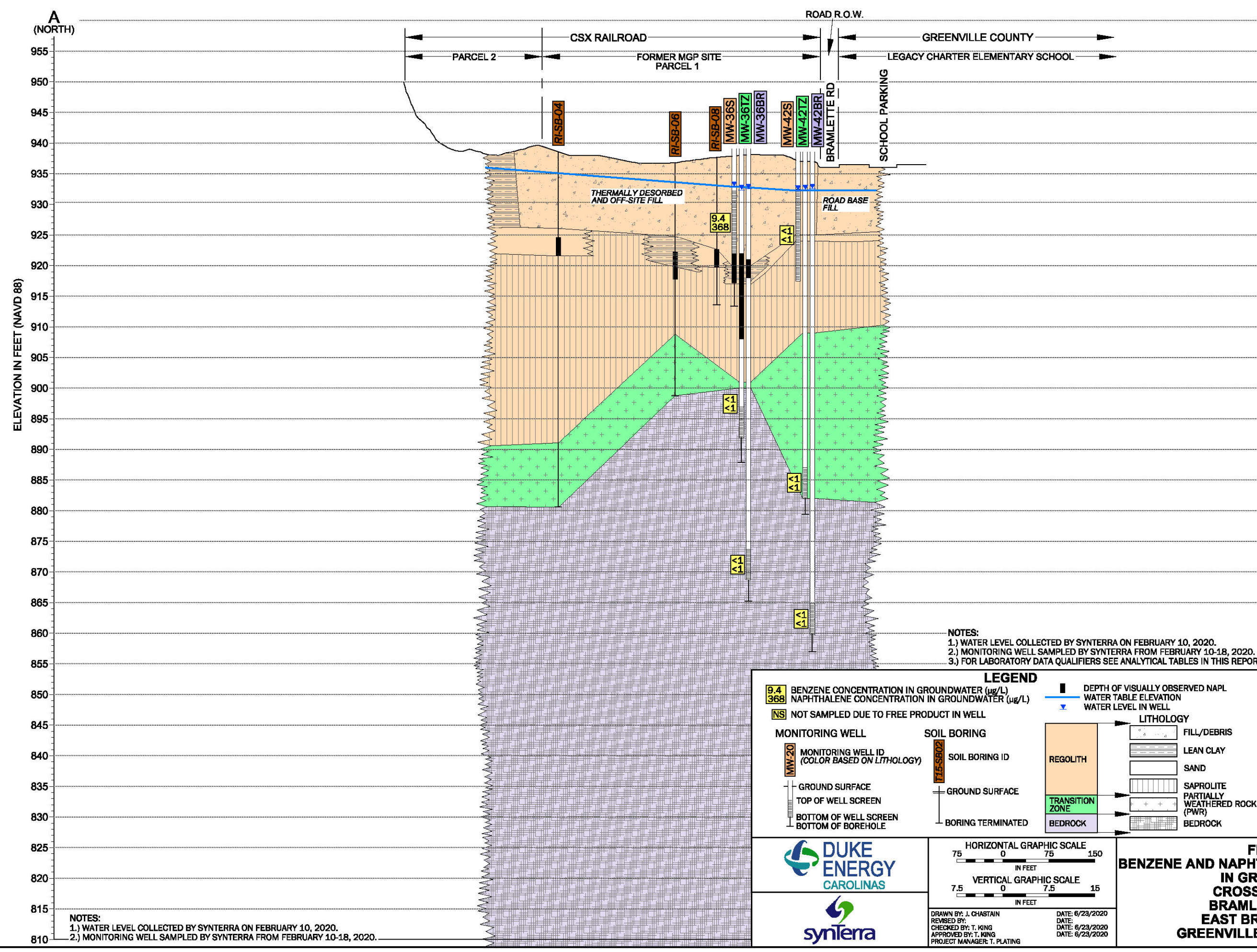
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. ALMOND	DATE: 04/28/2020
REVISED BY: C. DAVIS	DATE: 06/21/2020
CHECKED BY: M. MASTBAUM	DATE: 06/21/2020
APPROVED BY: T. PLATING	DATE: 06/21/2020
PROJECT MANAGER: T. PLATING	

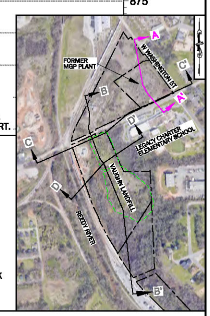
www.synterracorp.com

FIGURE 4-2
VISUALLY OBSERVED NAPL IN SOIL
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:
1.) WATER LEVEL COLLECTED BY SYNTERRA ON FEBRUARY 10, 2020.
2.) MONITORING WELL SAMPLED BY SYNTERRA FROM FEBRUARY 10-18, 2020.

NOTES:
1.) WATER LEVEL COLLECTED BY SYNTERRA ON FEBRUARY 10, 2020.
2.) MONITORING WELL SAMPLED BY SYNTERRA FROM FEBRUARY 10-18, 2020.
3.) FOR LABORATORY DATA QUALIFIERS SEE ANALYTICAL TABLES IN THIS REPORT.



LEGEND

9.4 BENZENE CONCENTRATION IN GROUNDWATER (µg/L)
368 NAPHTHALENE CONCENTRATION IN GROUNDWATER (µg/L)
NS NOT SAMPLED DUE TO FREE PRODUCT IN WELL

DEPTH OF VISUALLY OBSERVED NAPL
WATER TABLE ELEVATION
WATER LEVEL IN WELL

MONITORING WELL
MW-20 MONITORING WELL ID *(COLOR BASED ON LITHOLOGY)*
GROUND SURFACE
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
BOTTOM OF BOREHOLE

SOIL BORING
T15-SB02 SOIL BORING ID
GROUND SURFACE
BORING TERMINATED

REGOLITH
TRANSITION ZONE
BEDROCK

LITHOLOGY
FILL/DEBRIS
LEAN CLAY
SAND
SAPROLITE
PARTIALLY WEATHERED ROCK (PWR)
BEDROCK

DUKE ENERGY CAROLINAS

synTerra

HORIZONTAL GRAPHIC SCALE
75 0 75 150
IN FEET

VERTICAL GRAPHIC SCALE
7.5 0 7.5 15
IN FEET

DRAWN BY: J. CHASTAIN DATE: 6/23/2020
REVISED BY: DATE:
CHECKED BY: T. KING DATE: 6/23/2020
APPROVED BY: T. KING DATE: 6/23/2020
PROJECT MANAGER: T. PLATING

FIGURE 5-1
BENZENE AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER
CROSS-SECTION A-A'
BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

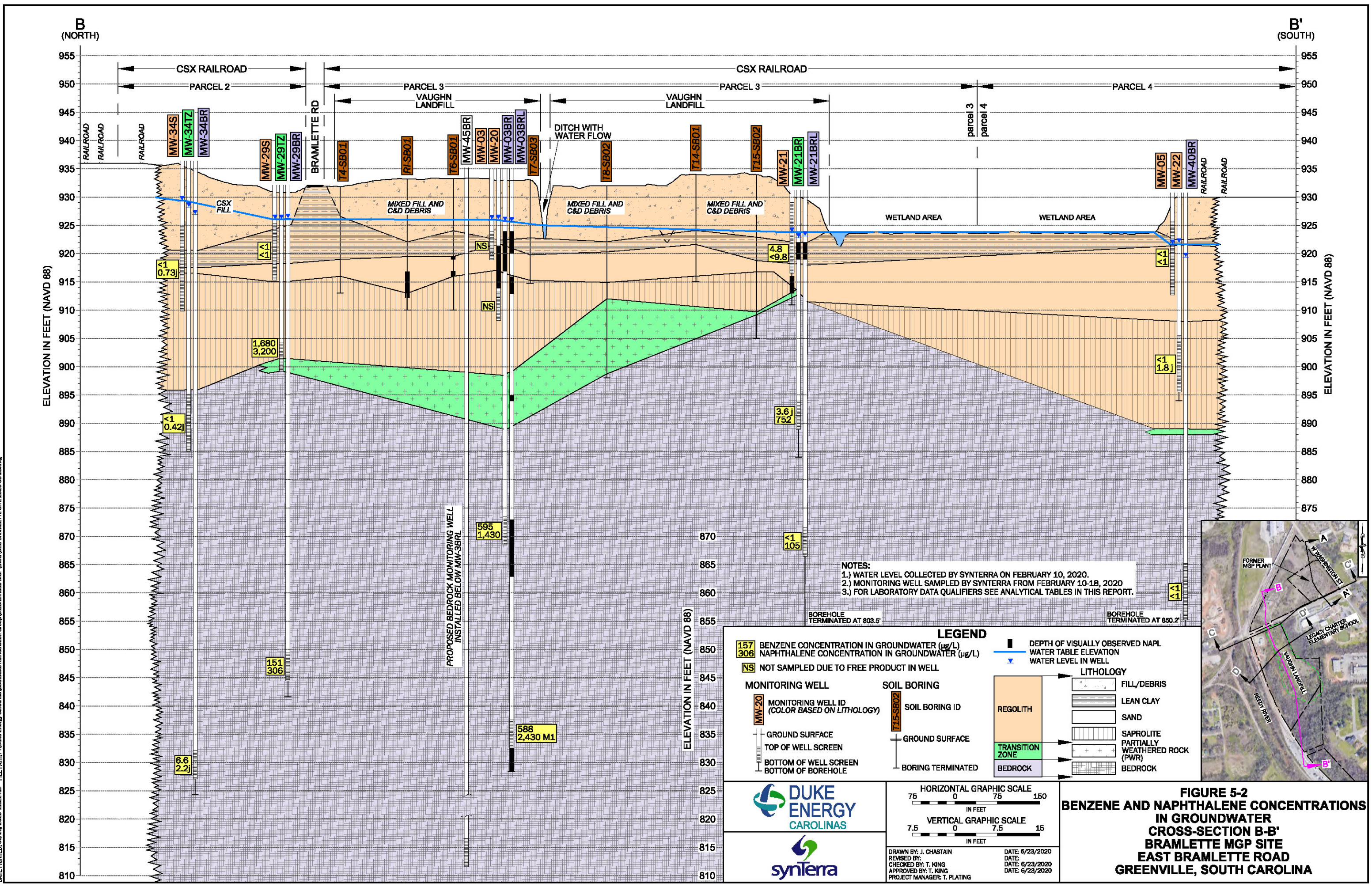


FIGURE 5-2
BENZENE AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER CROSS-SECTION B-B'
BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

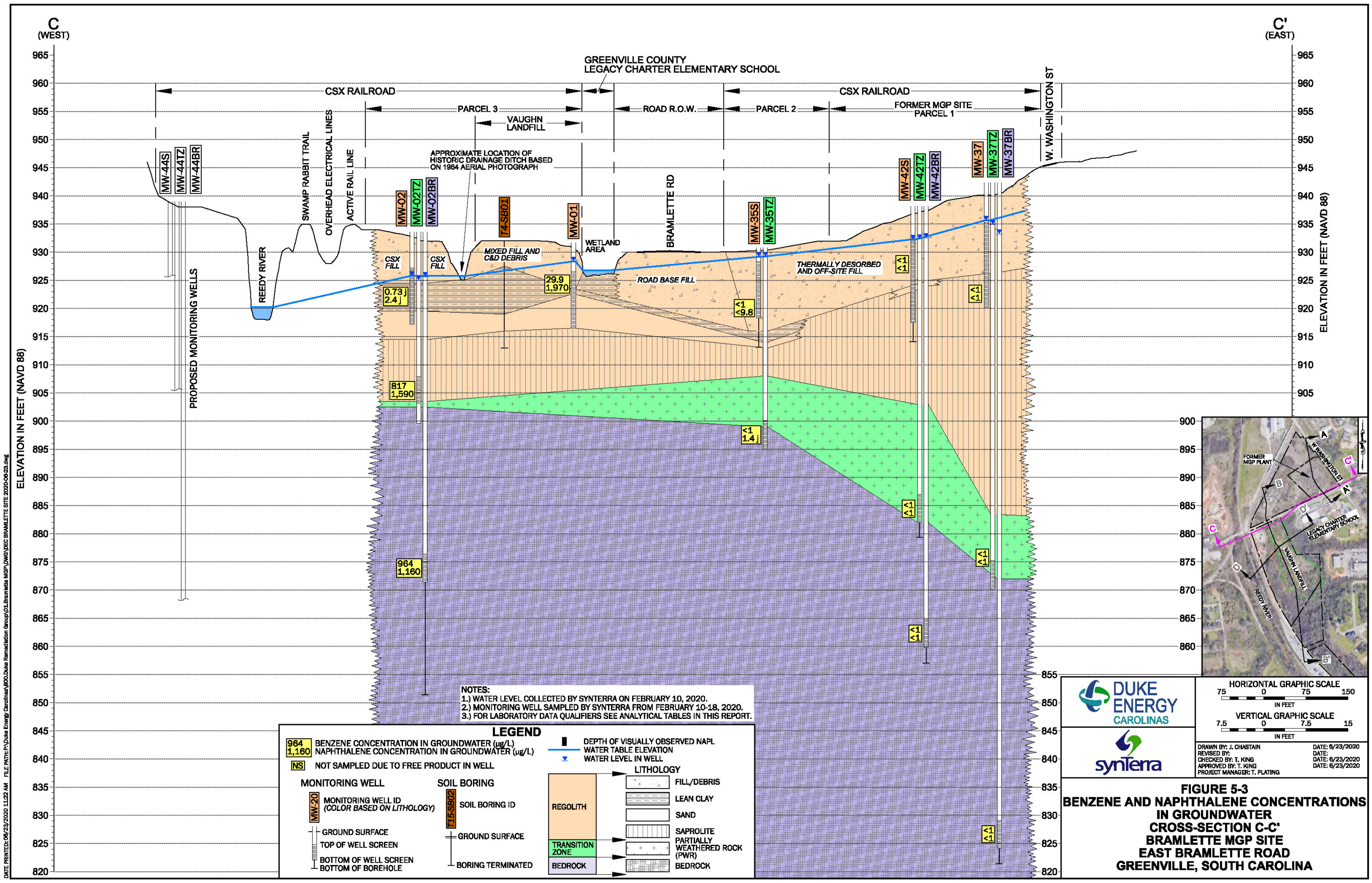


FIGURE 5-3
BENZENE AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER
CROSS-SECTION C-C'
BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

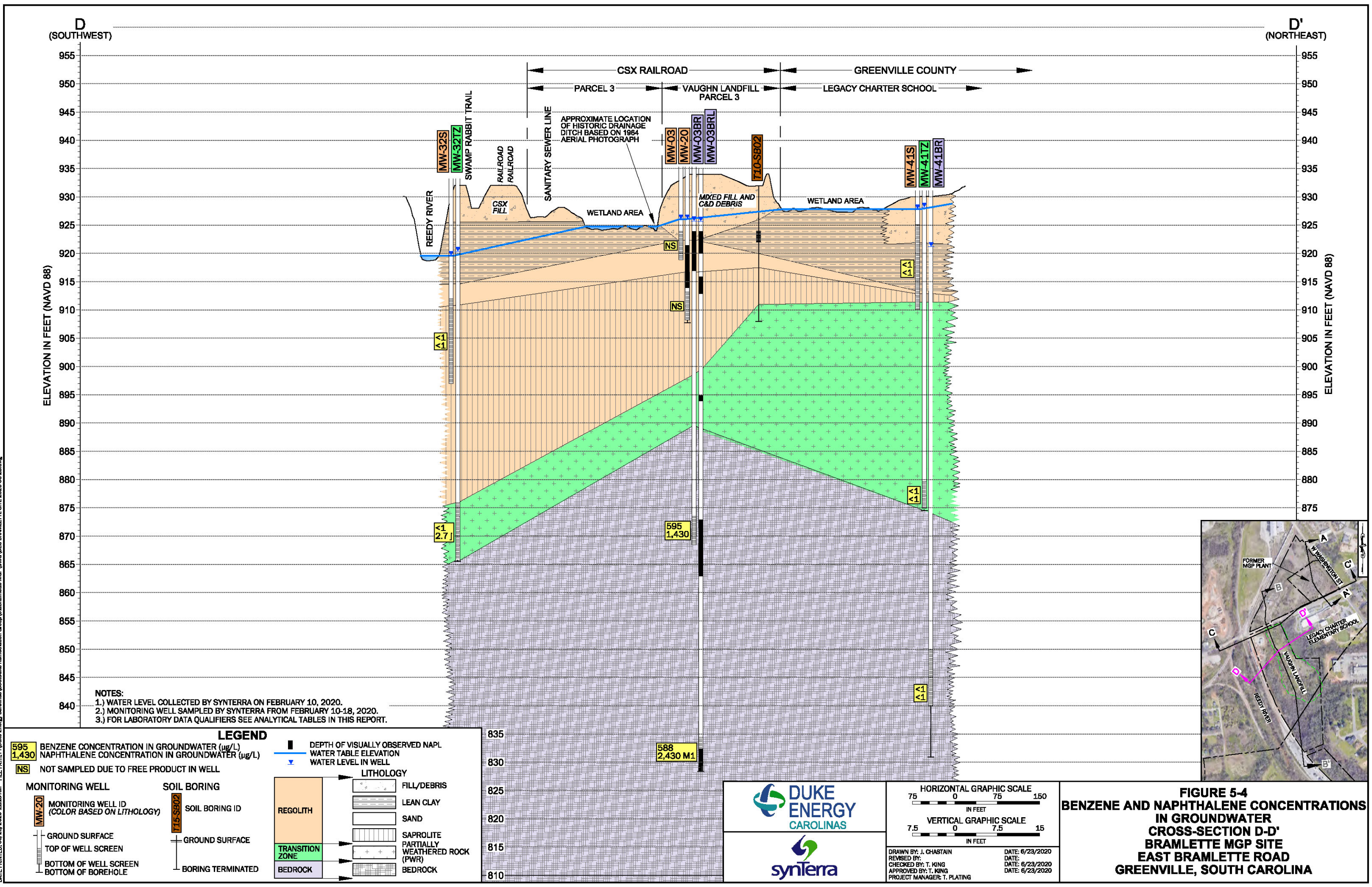
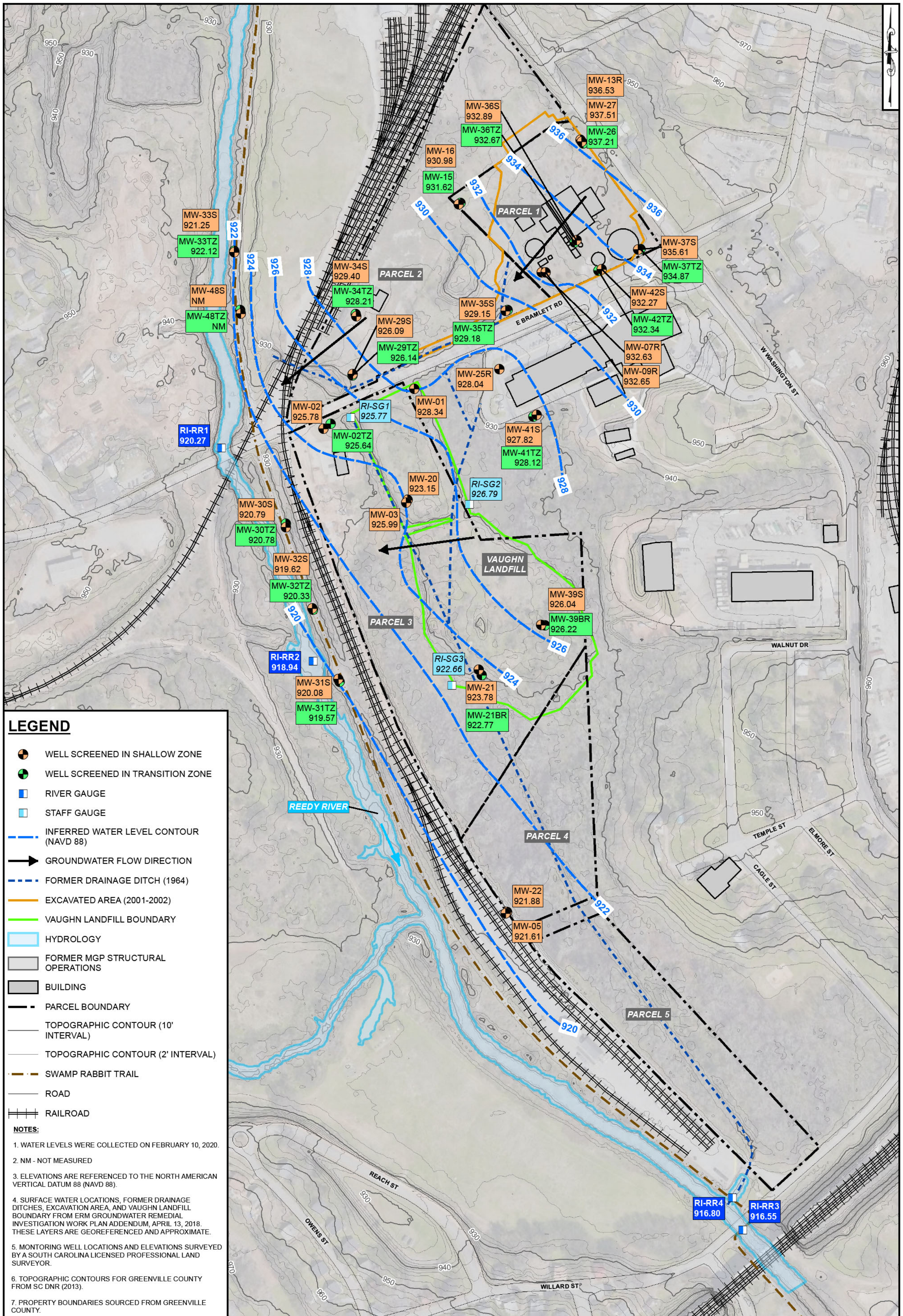


FIGURE 5-4
BENZENE AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER
CROSS-SECTION D-D'
BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

- WELL SCREENED IN SHALLOW ZONE
- WELL SCREENED IN TRANSITION ZONE
- RIVER GAUGE
- STAFF GAUGE
- INFERRED WATER LEVEL CONTOUR (NAVD 88)
- GROUNDWATER FLOW DIRECTION
- FORMER DRAINAGE DITCH (1964)
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- HYDROLOGY
- FORMER MGP STRUCTURAL OPERATIONS
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

NOTES:

1. WATER LEVELS WERE COLLECTED ON FEBRUARY 10, 2020.
2. NM - NOT MEASURED
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).
4. SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
5. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR.
6. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).
7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
8. WETLANDS BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY.
9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.
11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

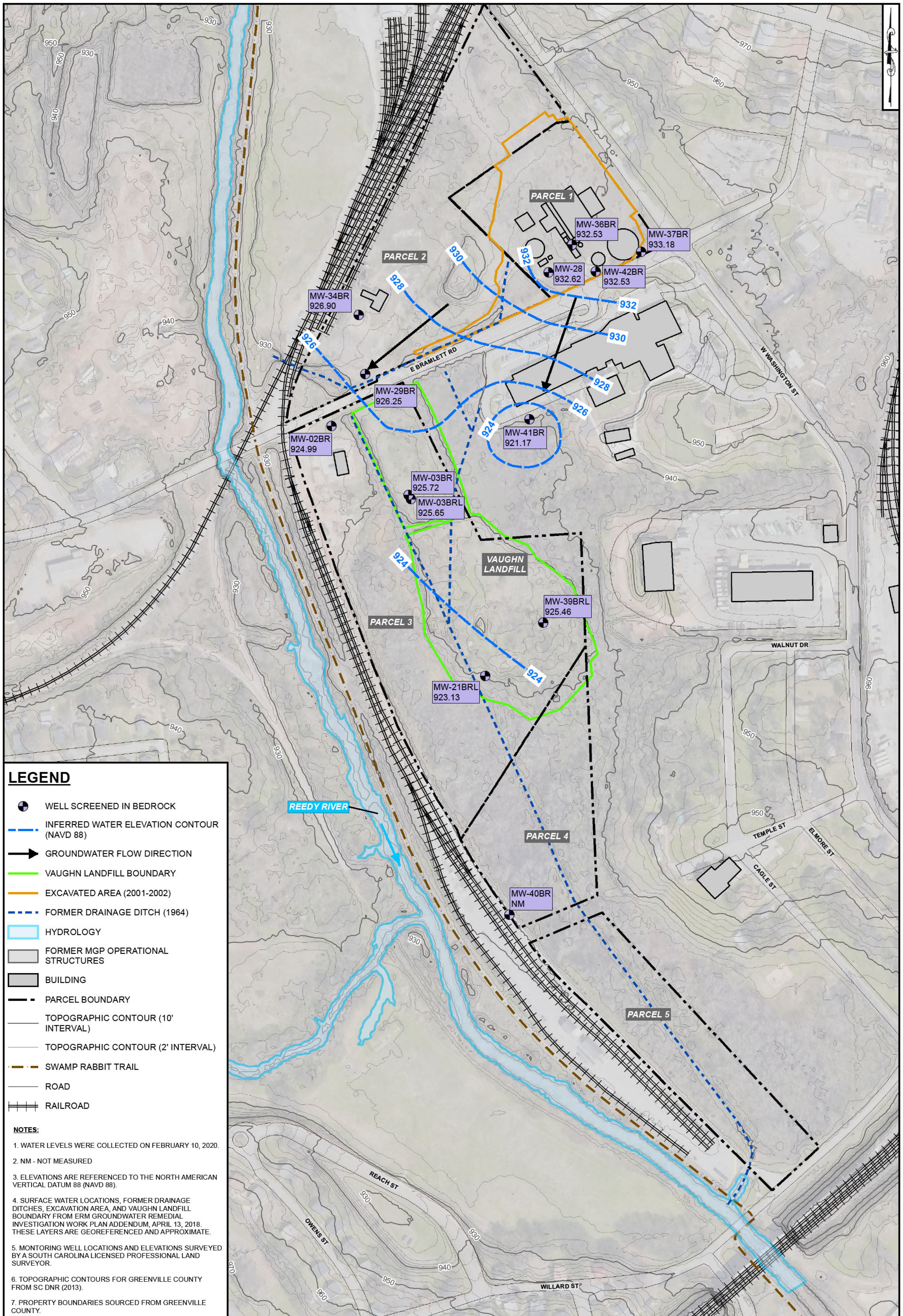
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS	DATE: 04/20/2020
REVISED BY: C. DAVIS	DATE: 06/20/2020
CHECKED BY: M. MASTBAUM	DATE: 06/20/2020
APPROVED BY: T. PLATING	DATE: 06/20/2020
PROJECT MANAGER: T. PLATING	

www.synterracorp.com

FIGURE 5-5
WATER LEVEL MAP - SHALLOW FLOW ZONE (FEB 2020)
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

1. WATER LEVELS WERE COLLECTED ON FEBRUARY 10, 2020.
2. NM - NOT MEASURED
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).
4. SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
5. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR.
6. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).
7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
8. WETLANDS BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY.
9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.
11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

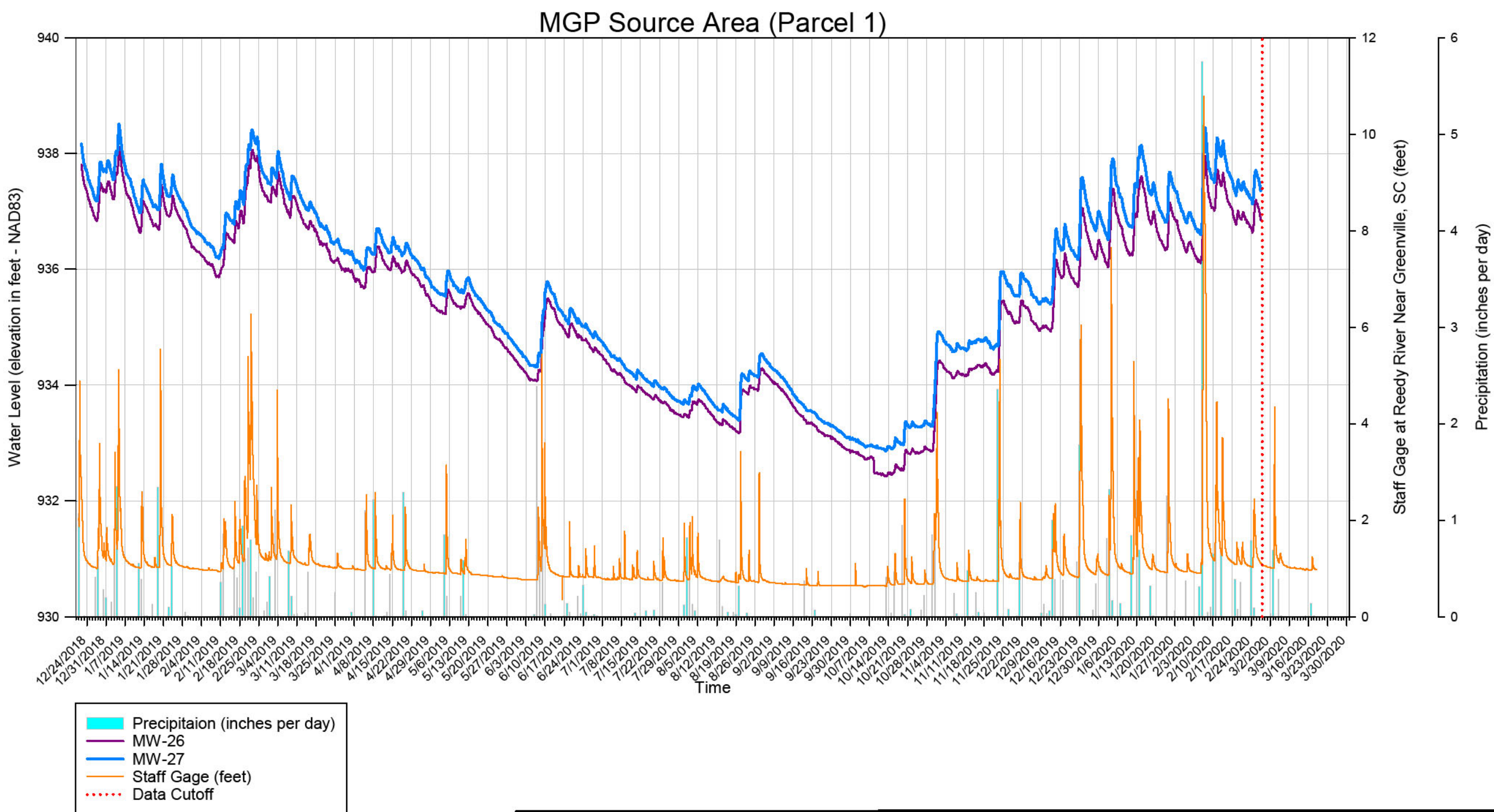
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 04/20/2020
REVISED BY: C. DAVIS DATE: 06/23/2020
CHECKED BY: M. MASTBAUM DATE: 06/23/2020
APPROVED BY: T. PLATING DATE: 06/23/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 5-6
WATER LEVEL MAP - BEDROCK FLOW ZONE (FEB 2020)
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

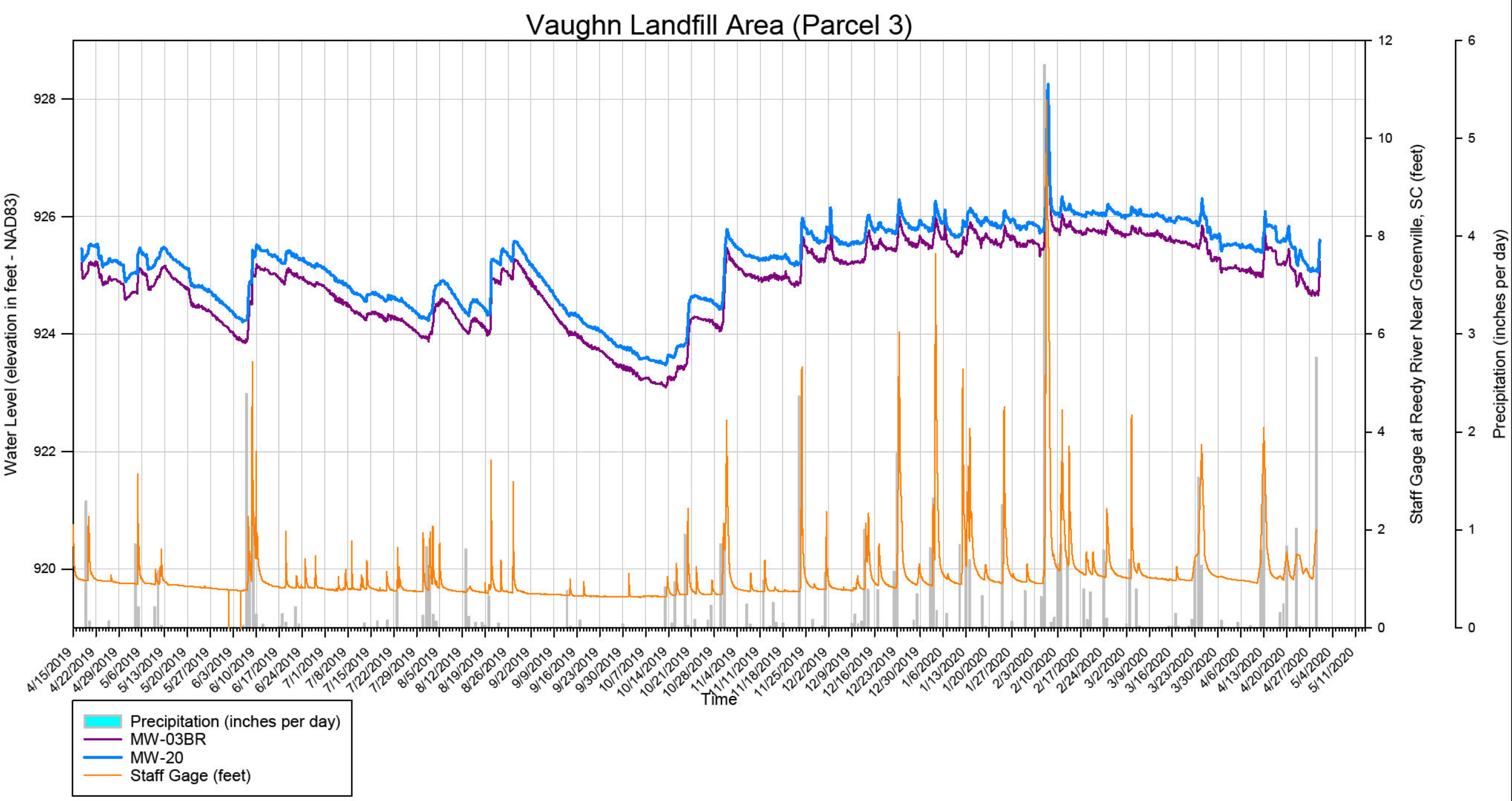


148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: T KING DATE: APRIL 2020
PROJECT MANAGER: T PLATING
LAYOUT:

www.synterracorp.com

FIGURE 5-7
MGP SOURCE AREA (PARCEL 1) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



DUKE ENERGY CAROLINAS

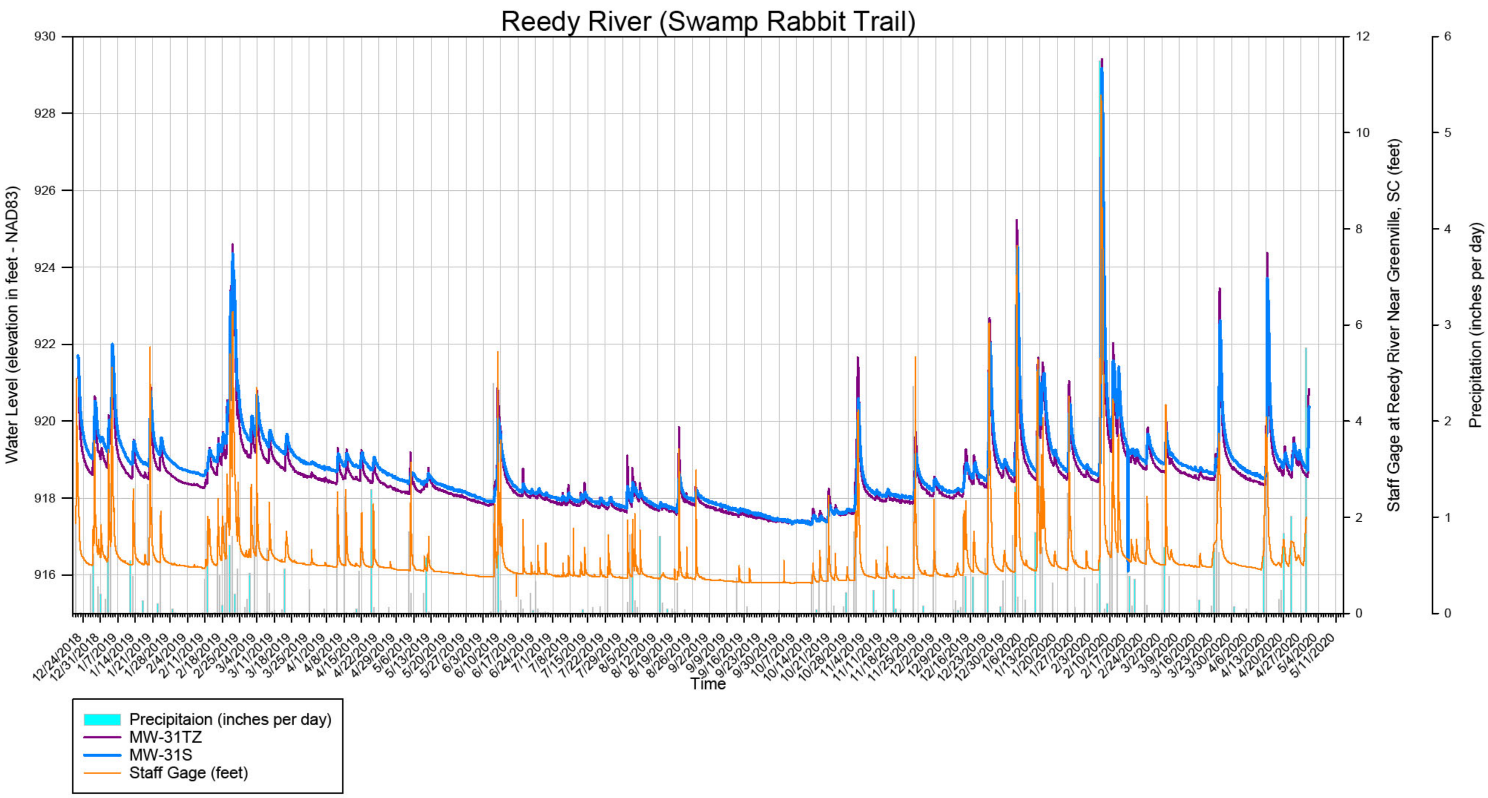
synTerra

148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: T KING DATE: APRIL 2020
PROJECT MANAGER: T PLATING
LAYOUT:

www.synterracorp.com

FIGURE 5-8
VAUGHN LANDFILL AREA (PARCEL 3) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



DUKE ENERGY. CAROLINAS

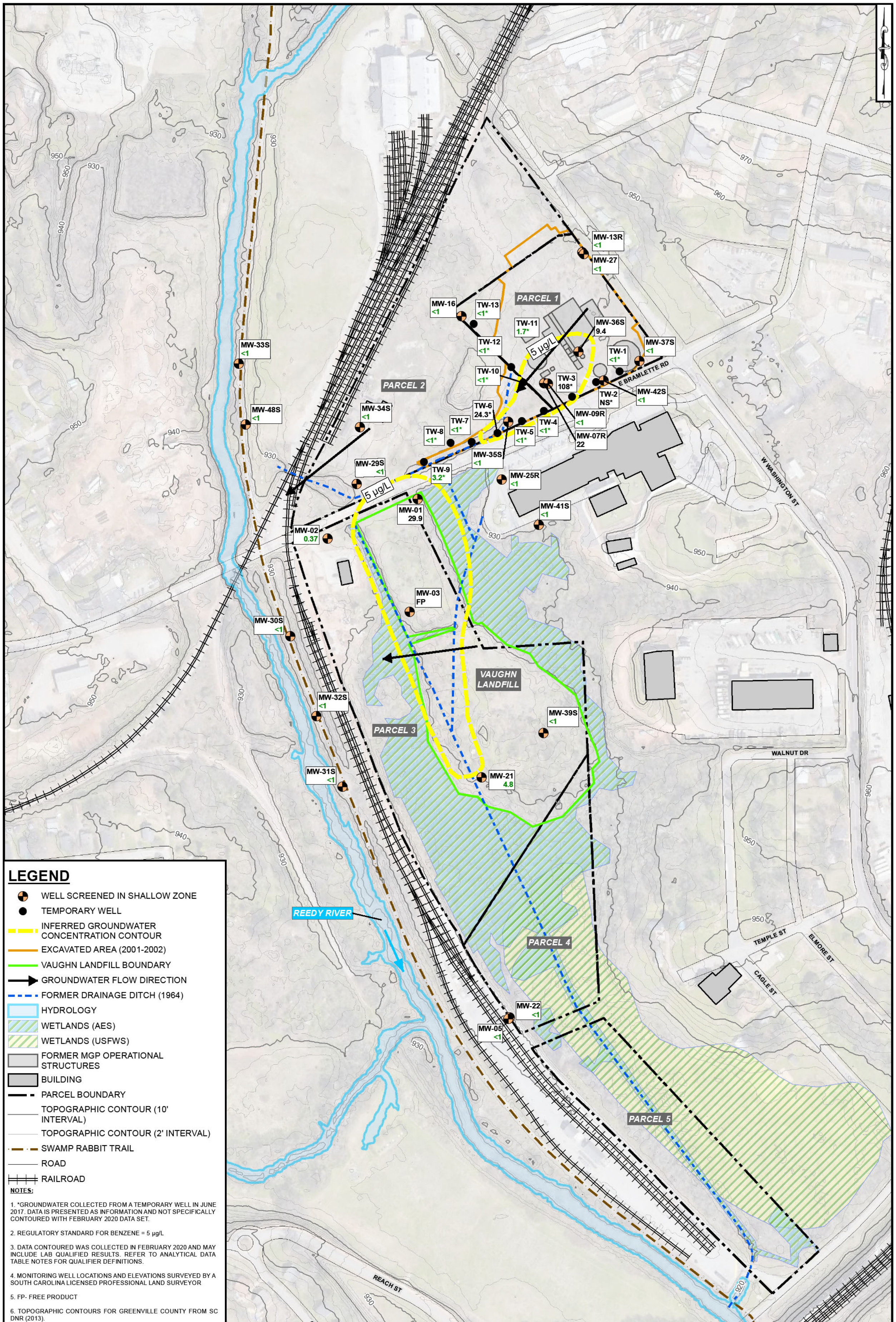
synTerra

148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: T KING DATE: APRIL 2020
PROJECT MANAGER: T PLATING
LAYOUT:

www.synterracorp.com

FIGURE 5-9
REEDY RIVER (SWAMP RABBIT TRAIL) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

- WELL SCREENED IN SHALLOW ZONE
- TEMPORARY WELL
- INFERRED GROUNDWATER CONCENTRATION CONTOUR
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- GROUNDWATER FLOW DIRECTION
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

NOTES:

1. *GROUNDWATER COLLECTED FROM A TEMPORARY WELL IN JUNE 2017. DATA IS PRESENTED AS INFORMATION AND NOT SPECIFICALLY CONTOURED WITH FEBRUARY 2020 DATA SET.

2. REGULATORY STANDARD FOR BENZENE = 5 µg/L

3. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.

4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

5. FP- FREE PRODUCT

6. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

8. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

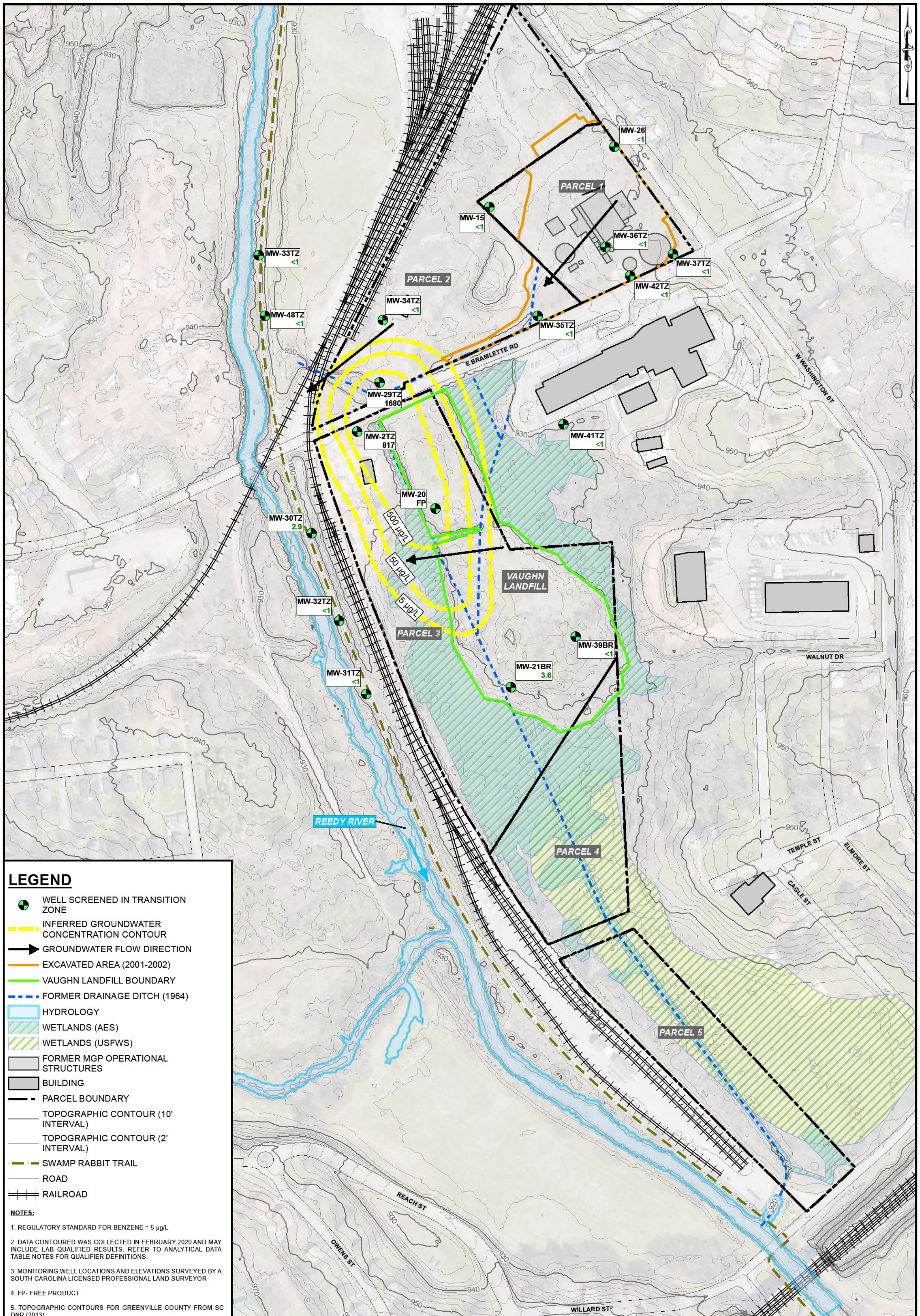
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 04/23/2020
REVISED BY: C. DAVIS DATE: 06/21/2020
CHECKED BY: M. MASTBAUM DATE: 06/21/2020
APPROVED BY: T. PLATING DATE: 06/21/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 6-1
ISOCONCENTRATION MAP
BENZENE IN SHALLOW FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

- WELL SCREENED IN TRANSITION ZONE
- INFERRED GROUNDWATER CONCENTRATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

NOTES:

1. REGULATORY STANDARD FOR BENZENE = 5 µg/L

2. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.

3. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

4. FP- FREE PRODUCT

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

7. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

8. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

9. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

10. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83

DUKE ENERGY CAROLINAS

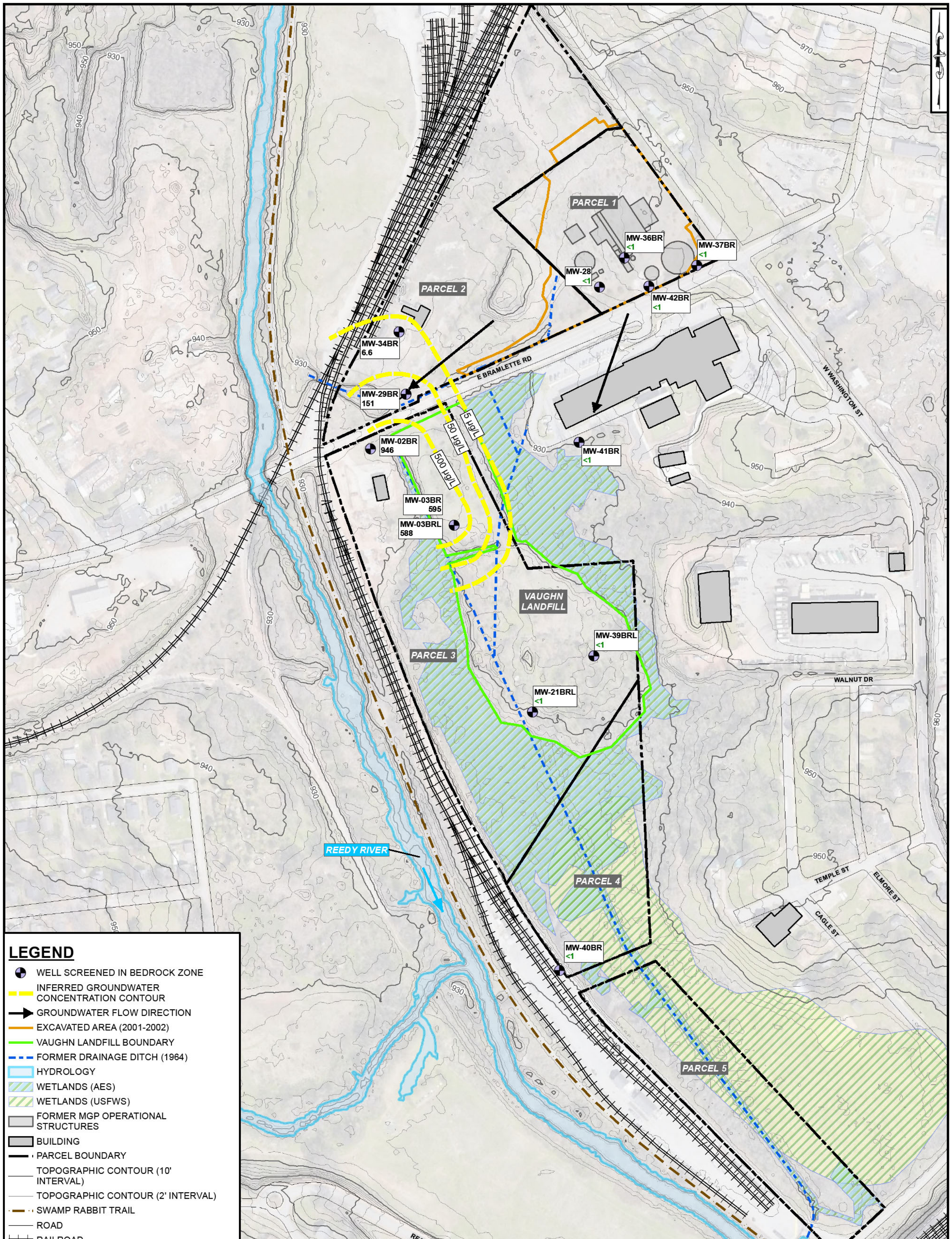
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS	DATE: 04/23/2020
REVISED BY: C. DAVIS	DATE: 06/21/2020
CHECKED BY: M. MASTBAUM	DATE: 06/21/2020
APPROVED BY: T. PLATING	DATE: 06/21/2020
PROJECT MANAGER: T. PLATING	

www.synterracorp.com

FIGURE 6-2
BENZENE IN TRANSITION FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

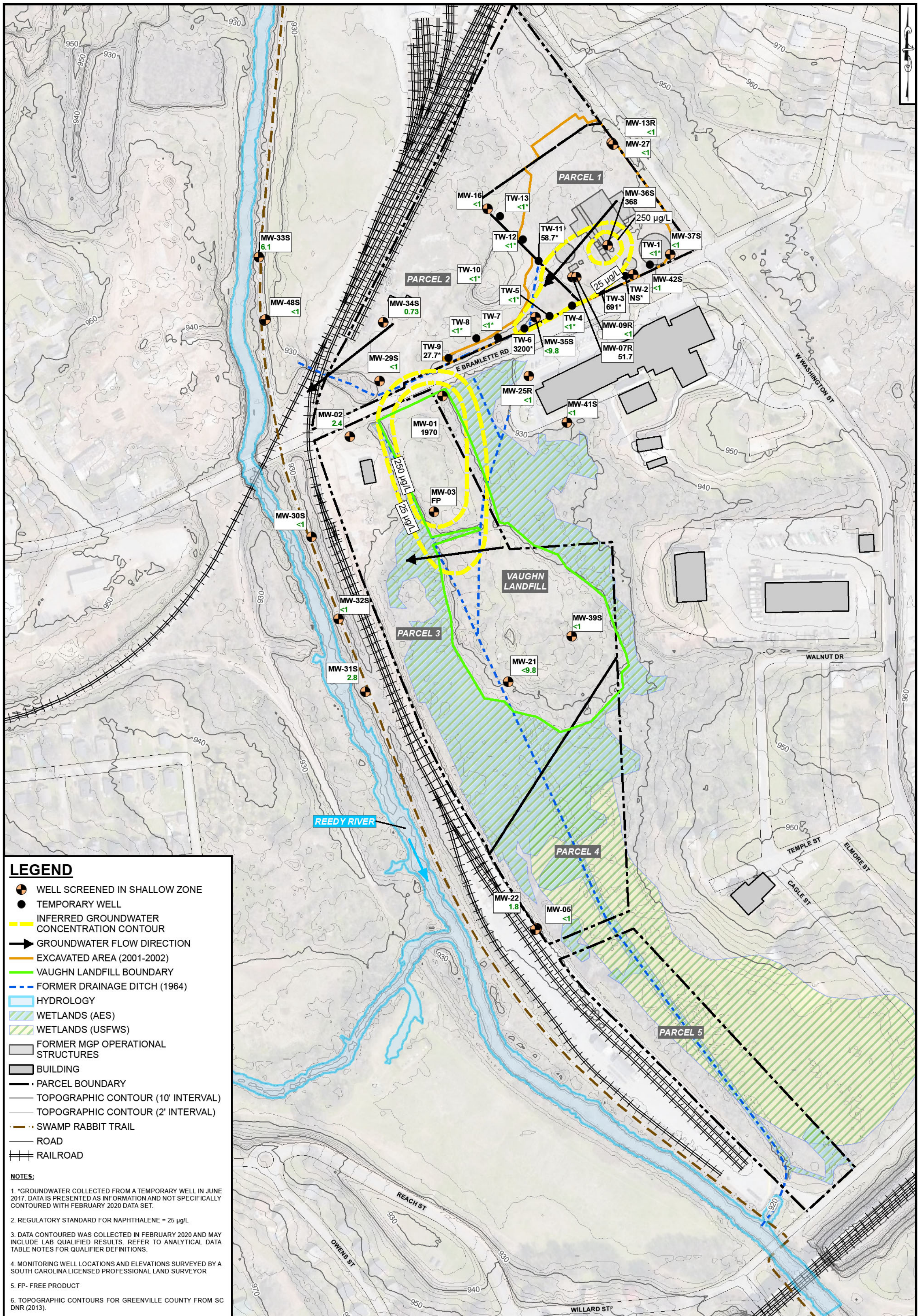
1. REGULATORY STANDARD FOR BENZENE = 5 µg/L
2. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.
3. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR
4. FP- FREE PRODUCT
5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).
6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
7. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.
8. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
9. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.
10. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 04/23/2020
REVISED BY: C. DAVIS DATE: 06/21/2020
CHECKED BY: M. MASTBAUM DATE: 06/21/2020
APPROVED BY: T. PLATING DATE: 06/21/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 6-3
ISOCONCENTRATION MAP
BENZENE IN BEDROCK FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

- WELL SCREENED IN SHALLOW ZONE
- TEMPORARY WELL
- INFERRED GROUNDWATER CONCENTRATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

NOTES:

1. *GROUNDWATER COLLECTED FROM A TEMPORARY WELL IN JUNE 2017. DATA IS PRESENTED AS INFORMATION AND NOT SPECIFICALLY CONTOURED WITH FEBRUARY 2020 DATA SET.

2. REGULATORY STANDARD FOR NAPHTHALENE = 25 µg/L

3. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.

4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

5. FP- FREE PRODUCT

6. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

8. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

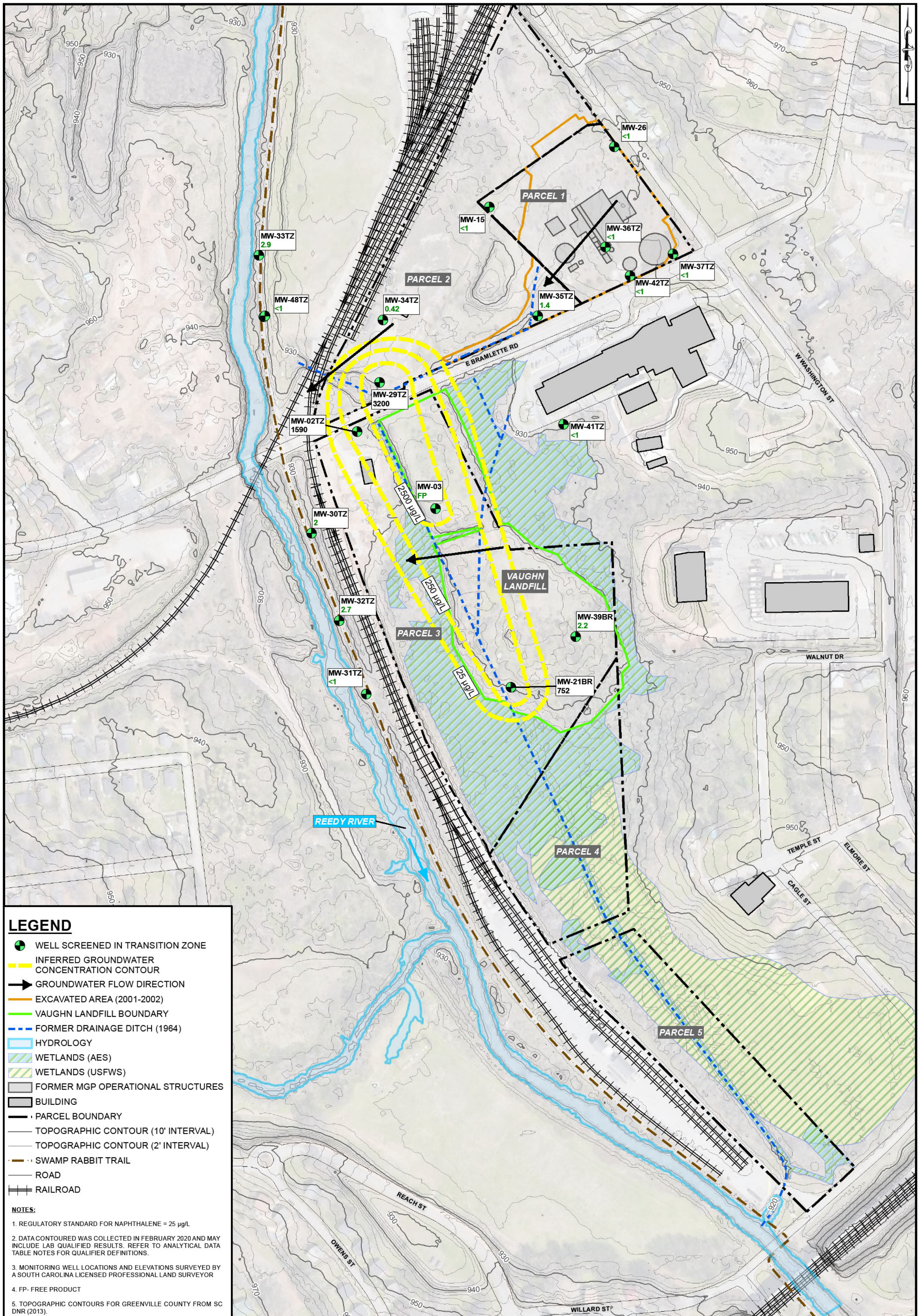
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 04/23/2020
REVISED BY: C. DAVIS DATE: 06/21/2020
CHECKED BY: M. MASTBAUM DATE: 06/21/2020
APPROVED BY: T. PLATING DATE: 06/21/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 6-4
ISOCONCENTRATION MAP
NAPHTHALENE IN SHALLOW FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

1. REGULATORY STANDARD FOR NAPHTHALENE = 25 µg/L

2. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.

3. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

4. FP- FREE PRODUCT

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

7. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

8. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

9. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

10. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

DUKE ENERGY CAROLINAS

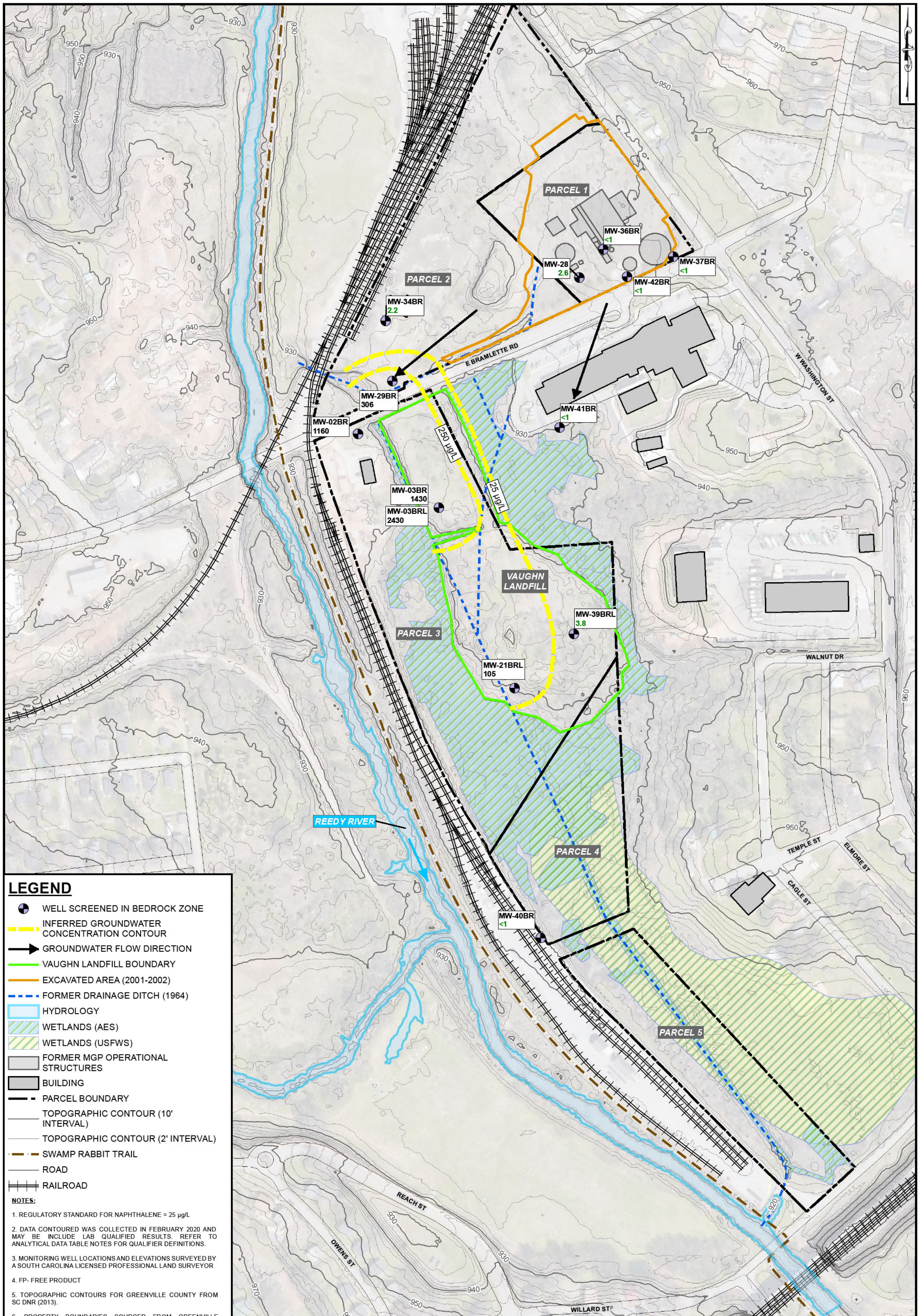
synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 04/23/2020
REVISED BY: C. DAVIS DATE: 06/20/2020
CHECKED BY: M. MASTBAUM DATE: 06/20/2020
APPROVED BY: T. PLATING DATE: 06/20/2020
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 6-5
ISOCONCENTRATION MAP
NAPHTHALENE IN TRANSITION FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

- WELL SCREENED IN BEDROCK ZONE
- INFERRED GROUNDWATER CONCENTRATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- VAUGHN LANDFILL BOUNDARY
- EXCAVATED AREA (2001-2002)
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

NOTES:

1. REGULATORY STANDARD FOR NAPHTHALENE = 25 µg/L

2. DATA CONTOURED WAS COLLECTED IN FEBRUARY 2020 AND MAY BE INCLUDE LAB QUALIFIED RESULTS. REFER TO ANALYTICAL DATA TABLE NOTES FOR QUALIFIER DEFINITIONS.

3. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

4. FP- FREE PRODUCT

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

6. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

7. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

8. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

9. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

10. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83

DUKE ENERGY CAROLINAS

synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS	DATE: 04/23/2020
REVISED BY: C. DAVIS	DATE: 06/21/2020
CHECKED BY: M. MASTBAUM	DATE: 06/21/2020
APPROVED BY: T. PLATING	DATE: 06/21/2020
PROJECT MANAGER: T. PLATING	

www.synterracorp.com

FIGURE 6-6
ISOCONCENTRATION MAP
NAPHTHALENE IN BEDROCK FLOW ZONE
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. EXTENT OF AFFECTED GROUNDWATER IS DEFINED AS BENZENE AND/OR NAPHTHALENE CONCENTRATIONS GREATER THAN APPLICABLE REGULATORY STANDARD WITHIN THE SHALLOW, TRANSITION, AND/OR DEEP FLOW ZONE.

2. * - WELL ABANDONED

3. SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.

4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR.

5. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

6. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).

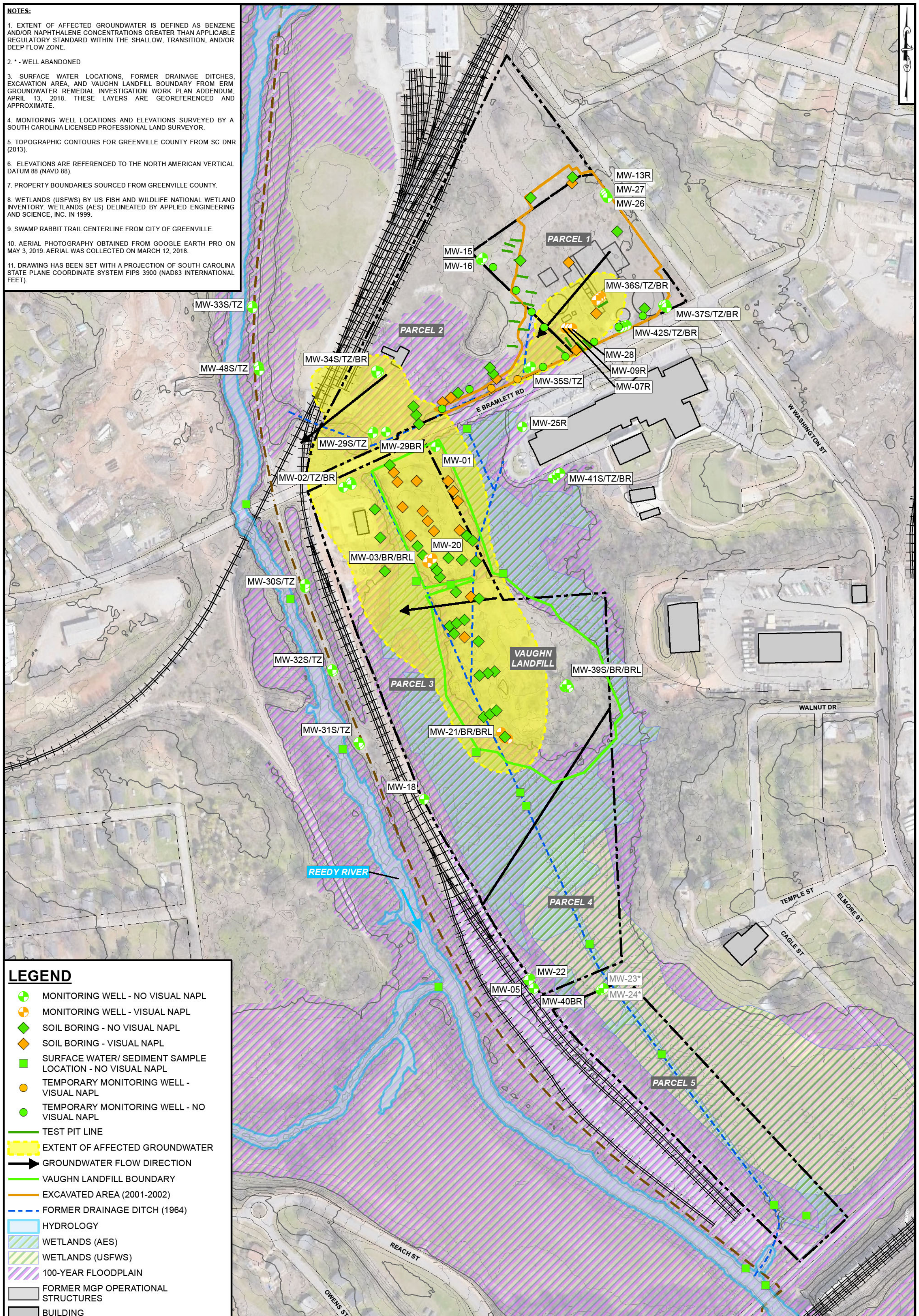
7. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

8. WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

9. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

10. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

11. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).



LEGEND

- MONITORING WELL - NO VISUAL NAPL
- MONITORING WELL - VISUAL NAPL
- SOIL BORING - NO VISUAL NAPL
- SOIL BORING - VISUAL NAPL
- SURFACE WATER/ SEDIMENT SAMPLE LOCATION - NO VISUAL NAPL
- TEMPORARY MONITORING WELL - VISUAL NAPL
- TEMPORARY MONITORING WELL - NO VISUAL NAPL
- TEST PIT LINE
- EXTENT OF AFFECTED GROUNDWATER
- GROUNDWATER FLOW DIRECTION
- VAUGHN LANDFILL BOUNDARY
- EXCAVATED AREA (2001-2002)
- FORMER DRAINAGE DITCH (1964)
- HYDROLOGY
- WETLANDS (AES)
- WETLANDS (USFWS)
- 100-YEAR FLOODPLAIN
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- SWAMP RABBIT TRAIL
- ROAD
- RAILROAD

DUKE ENERGY CAROLINAS

synTerra

GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: C. DAVIS DATE: 05/21/2019
REVISED BY: C. DAVIS DATE: 06/21/2020
CHECKED BY: M. MASTBAUM
APPROVED BY: T. PLATING
PROJECT MANAGER: T. PLATING

www.synterracorp.com

FIGURE 8-1
CONCEPTUAL SITE MODEL
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

TABLES

TABLE 5-1
WATER LEVEL MEASUREMENTS AND ELEVATIONS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Monitoring Well ID	Flow Zone	Measuring Point TOC Elevation (ft-NAVD 88)	Ground Surface Elevation (ft-NAVD 88)	Measured Well Depth (ft-BTOC)	Date	Measured Water Level (ft-BTOC)	Groundwater Elevation (ft NAVD 88)
MONITORING WELLS							
MW-01	Shallow	934.31	931.47	16.90	2/10/2020	5.97	928.34
MW-02	Shallow	934.82	932.17	18.15	2/10/2020	9.04	925.78
MW-03	Shallow	935.53	932.90	16.57	2/10/2020	9.54	925.99
MW-05	Shallow	929.73	929.58	15.58	2/10/2020	8.12	921.61
MW-07R	Shallow	936.01	932.93	18.69	2/10/2020	3.38	932.63
MW-09R	Shallow	936.47	933.62	29.88	2/10/2020	3.82	932.65
MW-13R	Shallow	940.94	937.93	23.45	2/10/2020	3.65	937.29
MW-16	Shallow	938.61	936.73	17.87	2/10/2020	7.63	930.98
MW-20	Shallow	932.83	935.36	27.98	2/10/2020	9.68	923.15
MW- 21	Shallow	934.53	930.68	19.28	2/10/2020	10.75	923.78
MW-22	Shallow	930.30	930.47	34.92	2/10/2020	8.42	921.88
MW-25R	Shallow	930.75	930.79	16.35	2/10/2020	2.71	928.04
MW-27	Shallow	940.93	937.83	38.62	2/10/2020	3.42	937.51
MW-29S	Shallow	932.86	930.25	17.79	2/10/2020	6.77	926.09
MW-30S	Shallow	932.80	932.60	19.90	2/10/2020	12.01	920.79
MW-31S	Shallow	932.51	932.11	19.75	2/10/2020	12.43	920.08
MW-32S	Shallow	931.73	931.98	NM	2/10/2020	12.11	919.62
MW-33S	Shallow	932.06	932.12	NM	2/10/2020	10.81	921.25
MW-34S	Shallow	937.53	934.82	28.59	2/10/2020	8.13	929.40
MW-35S	Shallow	933.26	930.06	18.44	2/10/2020	4.11	929.15
MW-36S	Shallow	940.49	937.18	23.82	2/10/2020	7.60	932.89
MW-37S	Shallow	943.05	940.16	23.08	2/10/2020	7.44	935.61
MW-39S	Shallow	938.60	935.55	27.12	2/10/2020	12.56	926.04
MW-41S	Shallow	929.93	930.13	19.96	2/10/2020	2.11	927.82
MW-42S	Shallow	940.42	937.47	23.40	2/10/2020	8.15	932.27
MW-48S	Shallow	932.56	932.8	30.80	2/10/2020	NM	-
MW-02TZ	Transition Zone	934.90	931.61	28.50	2/10/2020	9.26	925.64
MW-15	Transition Zone	939.09	936.39	57.10	2/10/2020	7.45	931.62
MW-20	Transition Zone	935.71	933.23	27.98	2/10/2020	9.68	926.03
MW-21BR	Transition Zone	930.89	928.00	45.00	2/10/2020	8.12	922.77
MW-26	Transition Zone	940.91	937.90	58.50	2/10/2020	3.70	937.21
MW-29TZ	Transition Zone	932.92	930.18	34.00	2/10/2020	6.78	926.14
MW-30TZ	Transition Zone	932.54	932.57	NM	2/10/2020	11.76	920.78
MW-31TZ	Transition Zone	932.37	932.07	37.85	2/10/2020	12.80	919.57
MW-32TZ	Transition Zone	931.92	931.74	NM	2/10/2020	11.59	920.33
MW-33TZ	Transition Zone	931.24	931.81	NM	2/10/2020	9.12	922.12
MW-34TZ	Transition Zone	937.91	935.14	53.56	2/10/2020	9.70	928.21
MW-35TZ	Transition Zone	933.51	930.12	38.11	2/10/2020	4.33	929.18
MW-36TZ	Transition Zone	940.07	936.89	48.73	2/10/2020	7.40	932.67
MW-37TZ	Transition Zone	943.27	940.15	72.94	2/10/2020	8.40	934.87
MW-39BR	Transition Zone	937.92	935.25	52.86	2/10/2020	11.70	926.22
MW-41TZ	Transition Zone	929.52	929.94	55.65	2/10/2020	1.40	928.12
MW-42TZ	Transition Zone	940.18	937.04	57.66	2/10/2020	7.84	932.34
MW-48TZ	Transition Zone	932.66	932.72	NM	2/10/2020	NM	-
MW-02BR	Bedrock	934.42	931.37	62.84	2/10/2020	9.43	924.99
MW-03BR	Bedrock	935.87	932.99	67.01	2/10/2020	10.15	925.72
MW-03BRL	Bedrock	936.49	933.44	107.11	2/10/2020	10.84	925.65
MW-21BRL	Bedrock	931.51	928.48	67.13	2/10/2020	8.38	923.13

TABLE 5-1
WATER LEVEL MEASUREMENTS AND ELEVATIONS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Monitoring Well ID	Flow Zone	Measuring Point TOC Elevation (ft-NAVD 88)	Ground Surface Elevation (ft-NAVD 88)	Measured Well Depth (ft-BTOC)	Date	Measured Water Level (ft-BTOC)	Groundwater Elevation (ft NAVD 88)
MONITORING WELLS (CONTINUED)							
MW-28	Bedrock	936.69	933.88	44.57	2/10/2020	4.07	932.62
MW-29BR	Bedrock	933.32	930.36	88.79	2/10/2020	7.07	926.25
MW-34BR	Bedrock	937.92	935.11	110.75	2/10/2020	11.02	926.90
MW-36BR	Bedrock	940.04	936.72	71.49	2/10/2020	7.51	932.53
MW-37BR	Bedrock	943.12	940.09	118.68	2/10/2020	9.94	933.18
MW-39BRL	Bedrock	937.91	935.17	82.65	2/10/2020	12.45	925.46
MW-40BR	Bedrock	929.85	930.17	NM	2/10/2020	NM	-
MW-41BR	Bedrock	929.80	929.92	90.40	2/10/2020	8.63	921.17
MW-42BR	Bedrock	939.52	936.84	79.83	2/10/2020	6.99	932.53
RI-SG1	Surface Water	927.79	922.30	NA	2/10/2020	3.48	925.77
RI-SG2	Surface Water	930.31	924.47	NA	2/10/2020	1.98	926.79
RI-SG3	Surface Water	927.44	921.54	NA	2/10/2020	0.72	922.66
RIVER GAGES							
RI-RR1	Surface Water	938.68	NA	NA	2/10/2020	18.41	920.27
RI-RR2	Surface Water	934.14	NA	NA	2/10/2020	15.20	918.94
RI-RR3	Surface Water	929.49	NA	NA	2/10/2020	12.94	916.55
RI-RR4	Surface Water	925.81	NA	NA	2/10/2020	9.01	916.80

Prepared by: DAA Checked by: JPC

Notes:
BTOC- below top of casing
ft- feet
NA- not applicable
NM- not measured
NAVD 88- North American Vertical Datum 1988

TABLE 5-2
VERTICAL HYDRAULIC GRADIENTS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well ID	Monitoring Zone	Reference Cross-Section	Ground Surface Elevation (Ft-NAVD 88)	Total Well Depth [1,2] (Ft-BGS)	Water Level Elevation Q1-2020	Vertical Gradient and Direction	
MW-02	Shallow	C-C'	932.17	15.0	925.78	0.01	Downward
MW-02TZ	Transition Zone	C-C'	931.61	28.5	925.64		
MW-02TZ	Transition Zone	C-C'	931.61	28.5	925.64	0.03	Downward
MW-02BR	Bedrock	C-C'	931.37	62.8	924.99		
MW-03	Shallow	B-B' & D-D'	932.90	14.0	925.99	-1.42	Upward
MW-20	Transition Zone	B-B' & D-D'	933.23	25.5	923.15		
MW-20	Transition Zone	B-B' & D-D'	933.23	25.5	923.15	-0.05	Upward
MW-03BR	Bedrock	B-B' & D-D'	932.99	64.5	925.72		
MW-03BR	Bedrock	B-B' & D-D'	932.99	64.5	925.72	0.00	Downward
MW-03BRL	Lower Bedrock	B-B' & D-D'	933.44	107.1	925.65		
MW-07R	Shallow	---	932.93	15.0	932.63	0.01	Downward
MW-28	Bedrock	---	933.88	44.6	932.40		
MW-09R	Shallow	---	933.62	29.9	932.65	0.00	Downward
MW-28	Bedrock	---	933.88	44.6	932.62		
MW-13R	Shallow	---	937.93	23.5	937.29	0.00	Downward
MW-26	Bedrock	---	937.90	58.4	937.21		
MW-27	Shallow	---	937.83	58.4	937.51	0.02	Downward
MW-26	Bedrock	---	937.90	38.6	937.21		
MW-16	Shallow	---	936.73	58.4	930.98	-0.02	Upward
MW-15	Transition Zone	---	936.39	16.0	931.62		
MW-21	Shallow	B-B'	930.68	18.0	923.78	0.03	Downward
MW-21BR	Transition Zone	B-B'	928.00	45.0	922.77		
MW-21BR	Transition Zone	B-B'	928.00	45.0	922.77	-0.02	Upward
MW-21BRL	Bedrock	B-B'	928.48	67.1	923.13		
MW-05	Shallow	B-B'	929.73	14.0	921.98	0.04	Downward
MW-40BR	Bedrock	B-B'	930.17	80.0	919.29		
MW-22	Shallow	B-B'	930.47	36.5	921.88	0.06	Downward
MW-40BR	Bedrock	B-B'	930.17	80.0	919.29		
MW-29S	Shallow	B-B'	930.25	17.8	926.09	0.00	Upward
MW-29TZ	Transition Zone	B-B'	930.18	34.0	926.14		
MW-29TZ	Transition Zone	B-B'	930.18	34.0	926.14	0.00	Upward
MW-29BR	Bedrock	B-B'	930.36	88.8	926.25		
MW-30S	Shallow	---	932.80	19.9	920.79	0.00	Downward
MW-30TZ	Transition Zone	---	932.57	40.0	920.78		
MW-31S	Shallow	---	932.51	20.0	920.08	0.02	Downward
MW-31TZ	Transition Zone	---	932.37	38.0	919.57		
MW-32S	Shallow	D-D'	931.98	37.9	919.62	-0.02	Upward
MW-32TZ	Transition Zone	D-D'	931.74	66.0	920.33		
MW-33S	Shallow	---	932.12	20.0	921.25	-0.03	Upward
MW-33TZ	Transition Zone	---	931.81	40.0	922.12		
MW-34S	Shallow	B-B'	934.82	25.0	929.40	0.04	Downward
MW-34TZ	Transition Zone	B-B'	935.14	54.0	928.21		
MW-34TZ	Transition Zone	B-B'	935.14	54.0	928.21	0.02	Downward
MW-34BR	Bedrock	B-B'	935.11	110.8	926.90		
MW-35S	Shallow	C-C'	930.06	17.0	929.15	0.00	Upward
MW-35TZ	Transition Zone	C-C'	930.12	35.0	929.18		
MW-36S	Shallow	A-A'	937.18	23.8	932.89	0.01	Downward
MW-36TZ	Transition Zone	A-A'	936.89	48.7	932.67		
MW-36TZ	Transition Zone	A-A'	936.89	48.7	932.67	0.01	Downward
MW-36BR	Bedrock	A-A'	936.72	71.5	932.53		
MW-37S	Shallow	C-C'	940.16	23.1	935.61	0.01	Downward
MW-37TZ	Transition Zone	C-C'	940.15	72.9	934.87		
MW-37TZ	Transition Zone	C-C'	940.15	72.9	934.87	0.04	Downward
MW-37BR	Bedrock	C-C'	940.09	118.7	933.18		
MW-39S	Shallow	---	935.55	27.1	926.04	-0.01	Upward
MW-39BR	Bedrock	---	935.25	52.9	926.22		
MW-39S	Shallow	---	935.55	27.1	926.04	0.01	Downward
MW-39BRL	Lower Bedrock	---	935.17	82.7	925.46		
MW-41S	Shallow	D-D'	930.13	20.0	927.82	-0.01	Upward
MW-41TZ	Transition Zone	D-D'	929.94	55.7	928.12		
MW-41TZ	Transition Zone	D-D'	929.94	55.7	928.12	0.20	Downward
MW-41BR	Bedrock	D-D'	929.92	90.4	921.17		
MW-42S	Shallow	A-A' & C-C'	937.47	23.4	932.27	0.00	Upward
MW-42TZ	Transition Zone	A-A' & C-C'	937.04	57.7	932.34		
MW-42TZ	Transition Zone	A-A' & C-C'	937.04	57.7	932.34	0.00	Upward
MW-42BR	Bedrock	A-A' & C-C'	936.84	79.8	932.53		

Prepared by: DAA Checked by: JPC

Notes:
'---' Indicates that data is not availible or not applicable
BGS - below ground surface
ft - feet
NAVD 88 - North American Vertical Datum 1988

TABLE 5-3
HORIZONTAL HYDRAULIC GRADIENTS AND FLOW VELOCITIES
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Shallow Flow Zone

Well 1	Upgradient Groundwater Level h_1 (ft)[1]	Well 2	Downgradient Groundwater Level h_2 (ft)[1]	K (ft/day)[3]	Δh (ft)	Well 1 Easting	Well 1 Northing	Well 2 Easting	Well 2 Northing	Δl (ft)[4]	n_e[5]	v_s (ft/day)	v_s (ft/yr)	Gradient (Δh/Δl)
MW-13R	937	MW-33S	921	4.14	15.28	1574610.86	1105219.02	1573641.43	1104902.02	1020	0.35	0.177	64.68	0.01
MW-27	938	MW-33S	921	4.14	16.51	1574614.93	1105213.38	1573641.43	1104902.02	1020	0.35	0.191	69.88	0.02
MW-13R	937	MW-16	931	4.14	5.41	1574610.86	1105219.02	1574270.95	1105037.87	380	0.35	0.168	61.47	0.01
MW-27	938	MW-16	931	4.14	6.39	1574614.93	1105213.38	1574270.95	1105037.87	380	0.35	0.199	72.60	0.02
MW-7R	933	MW-34S	929	4.14	3.23	1574503.14	1104849.06	1573982.19	1104723.10	540	0.35	0.071	25.82	0.01
MW-36S	933	MW-35S	929	4.14	3.74	1574597.27	1104935.48	1574399.49	1104737.81	270	0.35	0.164	59.80	0.01
MW-37S	936	MW-42S	932	4.14	3.34	1574769.02	1104909.38	1574667.58	1104854.69	125	0.35	0.316	115.36	0.03
MW-37S	936	MW-25R	927	4.14	8.24	1574769.02	1104909.38	1574384.20	1104577.94	520	0.35	0.187	68.41	0.02
MW-42S	932	MW-41S	928	4.14	4.45	1574667.58	1104854.69	1574485.43	1104448.22	450	0.35	0.117	42.69	0.01
MW-41S	928	MW-3	926	4.14	2.13	1574485.43	1104448.22	1574124.53	1104205.18	440	0.35	0.057	20.90	0.00
MW-03	926	MW-30S	921	4.14	4.90	1574124.53	1104205.18	1573788.95	1104136.71	340	0.35	0.170	62.22	0.01
MW-01	928	MW-2	924	4.14	3.59	1574147.69	1104523.18	1573894.50	1104411.97	280	0.35	0.152	55.36	0.01
MW-39S	926	MW-21	924	4.14	2.37	1574498.53	1103862.13	1574401.96	1103059.97	220	0.35	0.127	46.51	0.01
											Geometric Mean	0.149	54.24	0.013
											Average	0.161	58.90	0.014

Transition Flow Zone

Well 1	Upgradient Groundwater Level h_1 (ft)[1]	Well 2	Downgradient Groundwater Level h_2 (ft)[1]	K (ft/day)[3]	Δh (ft)	Well 1 Easting	Well 1 Northing	Well 2 Easting	Well 2 Northing	Δl (ft)[4]	n_e[5]	v_s (ft/day)	v_s (ft/yr)	Gradient (Δh/Δl)
MW-26	937	MW-33TZ	922	0.880	15.09	1574618.81	1105207.71	1573641.31	1104906.52	1020	0.3	0.043	15.84	0.01
MW-26	937	MW-15	932	0.880	5.59	1574618.81	1105207.71	1574275.57	1105042.19	380	0.3	0.043	15.75	0.01
MW-42TZ	932	MW-41TZ	928	0.880	4.22	1574658.68	1104850.99	1574476.74	1104443.24	450	0.3	0.028	10.04	0.01
MW-41TZ	928	MW-30TZ	921	0.880	7.34	1574476.74	1104443.24	1573786.00	1104144.36	760	0.3	0.028	10.34	0.01
MW-39BR	926	MW-31TZ	920	0.880	6.65	1574509.39	1103861.34	1573938.69	1103705.80	600	0.3	0.033	11.87	0.01
MW-39BR	926	MW-21BR	923	0.880	3.45	1574509.39	1103861.34	1574332.25	1103722.17	220	0.3	0.046	16.79	0.02
											Geometric Mean	0.036	13.15	0.012
											Average	0.037	13.44	0.013

Fractured Bedrock Flow Zone

Well 1	Upgradient Groundwater Level h_1 (ft)[2]	Well 2	Downgradient Groundwater Level h_2 (ft)[2]	K (ft/day)[3]	Δh (ft)	Well 1 Easting	Well 1 Northing	Well 2 Easting	Well 2 Northing	Δl (ft)[4]	n_e[5]	v_s (ft/day)	v_s (ft/yr)	Gradient (Δh/Δl)
MW-36BR	933	MW-34BR	927	0.807	5.63	1574585.34	1104923.16	1573988.83	1104727.20	630	0.01	0.721	263.23	0.01
MW-28	932	MW-29BR	926	0.807	6.15	1574522.33	1104848.43	1574007.25	1104562.16	580	0.01	0.856	312.33	0.01
MW-39BRL	925	MW-21BRL	923	0.807	2.33	1574504.36	1103868.77	1574342.35	1103719.72	220	0.01	0.855	311.96	0.01
											Geometric Mean	0.808	294.91	0.010
											Average	0.811	295.84	0.010

Prepared by: SAS Checked by: JPC

Notes:

1 - Groundwater level shown corresponds to upgradient monitoring well water level elevation on Figure 3-9

2 - Groundwater level shown corresponds to downgradient monitoring well water level elevation on Figure 3-10

3 - Value is the geometric mean of hydraulic conductivities measured in site monitoring wells

4 - The length of a flow path between an upgradient and downgradient groundwater contour within the same flow zone

5 - n_e is an assumed effective porosity

dh/dl - horizontal hydraulic gradient (ft/ft)

ft - feet

h - water level height in feet

K - horizontal hydraulic conductivity

l - horizontal distance between wells

n_e - effective porosity

v_s - horizontal seepage velocity

Δh - difference in water level height between upgradient and downgradient locations

Δl - horizontal distance between upgradient and downgradient locations

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		ASTM D2974-87	8260B (VOA and MTBE)							8260B (Other VOC)						
						Xylene										
	Analytical Parameter	**Percent Moisture**	**Benzene**	**Ethylbenzene**	**Toluene**	**m&p-Xylene**	**o-Xylene**	**Xylene (Total)**	**MTBE**	**1,2,4-Trimethylbenzene**	**1,3,5-Trimethylbenzene**	**2-Butanone (MEK)**	**2-Hexanone**	**Acetone**	**Bromomethane**	**Chloroform**
	Reporting Units	**%**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
	Industrial Screening Level	**NE**	**5,100**	**25,000**	**47,000,000**	**2,400,000**	**2,800,000**	**2,500,000**	**210,000**	**1,800,000**	**1,500,000**	**190,000,000**	**1,300,000**	**670,000,000**	**30,000**	**1,400**
	Residental Screening Level	**NE**	**1,200**	**5,800**	**4,900,000**	**560,000**	**650,000**	**580,000**	**47,000**	**300,000**	**270,000**	**27,000,000**	**200,000**	**61,000,000**	**6,800**	**320**
Sample ID	**Sample Collection Date**	**Analytical Results**	**Analytical Results**							**Analytical Results**						
SA-SB-01 (0.5-1.0)	11/15/2019	14.7	<5.3	<5.3	<5.3	<10.7	<5.3	<10.7	<5.3	<5.3	<5.3	<107	<53.4	<107	<10.7	<5.3
SA-SB-01 (5.5-6.0)	11/15/2019	19.7	<6.3	<6.3	<6.3	<12.6	<6.3	<12.6	<6.3	<6.3	<6.3	<126	<63.2	<126	<12.6	<6.3
SA-SB-02 (0.5-1.0)	11/12/2019	18	<6.7	<6.7	<6.7	<13.4	<6.7	<13.4	<6.7	<6.7	<6.7	<134	<67	<134	<13.4	<6.7
SA-SB-02 (5.5-6.0)	11/12/2019	18.8	<6.8	<6.8	<6.8	<13.6	<6.8	<13.6	<6.8	<6.8	<6.8	<136	<68	<136	<13.6	<6.8
SA-SB-03 (0.5-1.0)	11/15/2019	15.1	<5.1	<5.1	<5.1	<10.3	<5.1	<10.3	<5.1	<5.1	<5.1	<103	<51.3	<103	<10.3	<5.1
SA-SB-03 (5.5-6.0)	11/15/2019	21	<6	<6	<6	<12	<6	<12	<6	<6	<6	<120	<60.2	<120	<12	<6
SA-SB-04 (0.5-1.0)	11/13/2019	14.7	<4.6	<4.6	<4.6	<9.2	<4.6	<9.2	<4.6	<4.6	<4.6	<91.6	<45.8	<91.6	<9.2	<4.6
SA-SB-04 (5.5-6.0)	11/13/2019	11.5	<4.4	<4.4	<4.4	<8.7	<4.4	<8.7	<4.4	<4.4	<4.4	<87.1	<43.5	<87.1	<8.7	<4.4
SA-SB-05 (0.5-1.0)	11/12/2019	13.3	<4.3	<4.3	<4.3	<8.6	<4.3	<8.6	<4.3	<4.3	<4.3	<86.2	<43.1	<86.2	<8.6	<4.3
SA-SB-05 (5.5-6.0)	11/12/2019	12.6	<4.5	<4.5	<4.5	<9	<4.5	<9	<4.5	<4.5	<4.5	<90.5	<45.2	<90.5	<9	<4.5
SA-SB-06 (0.5-1.0)	11/12/2019	18.7	<111	<111	<111	<222	<111	<222	<111	<111	<111	<2220	<1110	<2220	<222	<111
SA-SB-06 (5.5-6.0)	11/12/2019	14.3	<4.9	<4.9	<4.9	<9.8	<4.9	<9.8	<4.9	<4.9	<4.9	<97.6	<48.8	**10.1 j**	<9.8	<4.9
SA-SB-07 (0.5-1.0)	11/13/2019	15.1	<5.8	<5.8	<5.8	<11.5	<5.8	<11.5	<5.8	<5.8	<5.8	<115	<57.6	<115	<11.5	<5.8
SA-SB-07 (5.5-6.0)	11/13/2019	13.8	<4.5	<4.5	<4.5	<9	<4.5	<9	<4.5	<4.5	<4.5	<89.8	<44.9	<89.8	<9	<4.5
SA-SB-08 (0.5-1.0)	11/13/2019	15.4	<4.7	<4.7	<4.7	<9.3	<4.7	<9.3	<4.7	<4.7	<4.7	<93.3	<46.7	<93.3	<9.3	<4.7
SA-SB-08 (5.5-6.0)	11/13/2019	13	<4.8	<4.8	<4.8	<9.6	<4.8	<9.6	<4.8	<4.8	<4.8	<96	<48	<96	<9.6	<4.8
SA-SB-09 (0.5-1.0)	11/13/2019	18.6	<4.8 R0	<4.8 R0	<4.8 R0	<9.5 R0	<4.8 R0	<9.5 R0	<4.8 R0	<4.8 R0	<4.8 R0	<95.4 R0	<47.7 R0	<95.4 R0	<9.5 R0	<4.8 R0
SA-SB-09 (5.5-6.0)	11/13/2019	15.9	**71.1 j**	<116	<116	<233	<116	<233	<116	<116	<116	<2,330	<1,160	<2,330	**278**	<116
SA-SB-10 (0.5-1.0)	11/12/2019	20.8	<149	<149	<149	<298	<149	<298	<149	<149	<149	<2,980	<1,490	<2,980	<298	<149
SA-SB-10 (5.5-6.0)	11/12/2019	12.7	<4	<4	<4	<8	<4	<8	<4	<4	<4	<79.8	<39.9	**8.1 j**	<8	<4
SA-SB-11 (0.5-1.0)	11/12/2019	22.1	<5.4	<5.4	<5.4	<10.8	<5.4	<10.8	<5.4	<5.4	<5.4	<108	<54.1	<108	<10.8	<5.4
SA-SB-11 (5.5-6.0)	11/12/2019	10.2	<4.4	<4.4	<4.4	<8.9	<4.4	<8.9	<4.4	<4.4	<4.4	<88.6	<44.3	**22.5 j**	<8.9	<4.4
SA-SB-12 (0.5-1.0)	11/14/2019	14.6	<4.6	<4.6	<4.6	<9.2	<4.6	<9.2	<4.6	<4.6	<4.6	<92.2	<46.1	<92.2	<9.2	<4.6
SA-SB-12 (5.5-6.0)	11/14/2019	13.7	<226	<226	<226	<451	<226	<451	<226	<226	<226	<4,510	<2,260	<4,510	<451	<226
SA-SB-13 (0.5-1.0)	11/13/2019	16.5	<4.9	<4.9	<4.9	<9.7	<4.9	<9.7	<4.9	<4.9	<4.9	<97	<48.5	<97	<9.7	<4.9
SA-SB-13 (5.5-6.0)	11/13/2019	17.6	<4.7	<4.7	<4.7	<9.3	<4.7	<9.3	<4.7	<4.7	<4.7	<93.3	<46.7	<93.3	<9.3	<4.7
SA-SB-14 (0.5-1.0)	11/13/2019	16	<5.3	<5.3	<5.3	<10.5	<5.3	<10.5	<5.3	<5.3	<5.3	<105	<52.6	<105	<10.5	<5.3
SA-SB-14 (5.5-6.0)	11/13/2019	12	<1130	<1130	<1130	<2250	<1130	<2250	<1130	**1,060 j**	**428 j**	<22,500	<11,300	<22500	<2250	<1130
SA-SB-15 (0.5-1.0)	11/12/2019	17.9	<4.5	<4.5	<4.5	<8.9	<4.5	<8.9	<4.5	<4.5	<4.5	<89.3	<44.7	**103**	<8.9	<4.5
SA-SB-15 (5.5-6.0)	11/12/2019	18.3	<4.7	<4.7	<4.7	<9.3	<4.7	<9.3	<4.7	<4.7	<4.7	<93	<46.5	<93	<9.3	<4.7
SA-SB-16 (0.5-1.0)	11/12/2019	15.1	<5.6	<5.6	<5.6	<11.1	<5.6	<11.1	<5.6	<5.6	<5.6	<111	<55.6	**123**	<11.1	<5.6
SA-SB-16 (5.5-6.0)	11/12/2019	17.1	<3.8	<3.8	<3.8	<7.5	<3.8	<7.5	<3.8	<3.8	<3.8	<75.4	<37.7	**69.9 j**	<7.5	<3.8
SA-SB-17 (0.5-1.0)	11/12/2019	32.6	<147	<147	<147	<294	<147	<294	<147	<147	<147	<2,940	<1,470	<2,940	<294	<147
SA-SB-17 (5.5-6.0)	11/12/2019	10.4	<4.2	<4.2	<4.2	<8.4	<4.2	<8.4	<4.2	<4.2	<4.2	<84	<42	**30.9 j**	<8.4	<4.2
SA-SB-18 (0.5-1.0)	11/14/2019	14.6	<5.1	<5.1	<5.1	<10.2	<5.1	<10.2	<5.1	<5.1	<5.1	<102	<50.8	<102	<10.2	<5.1
SA-SB-18 (5.5-6.0)	11/14/2019	13.8	<4.8	<4.8	<4.8	<9.7	<4.8	<9.7	<4.8	<4.8	<4.8	<96.9	<48.4	<96.9	<9.7	<4.8
SA-SB-19 (0.5-1.0)	11/14/2019	16.6	<141	<141	<141	<282	<141	<282	<141	<141	<141	<2,820	<1,410	<2,820	<282	<141
SA-SB-19 (5.5-6.0)	11/14/2019	15.8	<4.9	<4.9	<4.9	<9.9	<4.9	<9.9	<4.9	<4.9	<4.9	<98.8	<49.4	<98.8	<9.9	<4.9
SA-SB-20 (0.5-1.0)	11/13/2019	13.1	<5.7	<5.7	<5.7	<11.4	<5.7	<11.4	<5.7	<5.7	<5.7	<114	<57.1	<114	<11.4	<5.7
SA-SB-20 (5.5-6.0)	11/13/2019	12.2	<4	<4	<4	<8	<4	<8	<4	<4	<4	<80.5	<40.2	<80.5	<8	<4
SA-SB-21 (0.5-1.0)	11/13/2019	14.4	<4.2	<4.2	<4.2	<8.3	<4.2	<8.3	<4.2	<4.2	<4.2	<83	<41.5	<83	<8.3	<4.2
SA-SB-21 (5.5-6.0)	11/13/2019	14.9	<3.3	<3.3	<3.3	<6.5	<3.3	<6.5	<3.3	<3.3	<3.3	<65.1	<32.6	<65.1	<6.5	<3.3
SA-SB-22 (0.5-1.0)	11/13/2019	13.5	<5.4	<5.4	<5.4	<10.8	<5.4	<10.8	<5.4	<5.4	<5.4	<108	<54	<108	<10.8	<5.4
SA-SB-22 (5.5-6.0)	11/13/2019	15	<4.2	<4.2	<4.2	<8.5	<4.2	<8.5	<4.2	<4.2	<4.2	<84.7	<42.4	**10.6 j**	<8.5	<4.2
SA-SB-23 (0.5-1.0)	11/12/2019	18	<5.3	<5.3	<5.3	<10.7	<5.3	<10.7	<5.3	<5.3	<5.3	<107	<53.3	**81.2 j**	<10.7	<5.3
SA-SB-23 (5.5-6.0)	11/12/2019	15.4	<5.2	<5.2	<5.2	<10.4	<5.2	<10.4	<5.2	<5.2	<5.2	<104	<52.2	<104	<10.4	<5.2
SA-SB-24 (0.5-1.0)	11/12/2019	19.6	<4	<4	<4	<8	<4	<8	<4	<4	<4	<80.5	<40.2	<80.5	<8	<4
SA-SB-24 (5.5-6.0)	11/12/2019	18.9	<4.4	<4.4	<4.4	<8.8	<4.4	<8.8	<4.4	<4.4	<4.4	<87.7	<43.8	<87.7	<8.8	<4.4
SA-SB-25 (0.5-1.0)	11/14/2019	17.8	<4.6	<4.6	<4.6	<9.2	<4.6	<9.2	<4.6	<4.6	<4.6	<91.8	<45.9	<91.8	<9.2	<4.6
SA-SB-25 (5.5-6.0)	11/14/2019	17.5	<4.8	<4.8	<4.8	<9.6	<4.8	<9.6	<4.8	<4.8	<4.8	<95.6	<47.8	<95.6	<9.6	<4.8
SA-SB-26 (0.5-1.0)	11/14/2019	22.6	<153	<153	<153	<307	<153	<307	<153	<153	<153	<3,070	<1,530	<3,070	<307	<153
SA-SB-26 (5.5-6.0)	11/14/2019	15	<4.3	<4.3	<4.3	<8.6	<4.3	<8.6	<4.3	<4.3	<4.3	<86.4	<43.2	<86.4	<8.6	<4.3
SA-SB-27 (0.5-1.0)	11/13/2019	18.2	<4.9	<4.9	<4.9	<9.8	<4.9	<9.8	<4.9	<4.9	<4.9	<97.5	<48.8	<97.5	<9.8	<4.9

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8260B (Other VOC)				8270D (PAH)								
	Analytical Parameter	Chloromethane	Isopropylbenzene (Cumene)	Methylene chloride	p-Isopropyltoluene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	460,000	9,900,000	1,000,000	NE	17,000	73,000	3,000,000	45,000,000	NE	230,000,000	21,00	2,100	21,000
	Residental Screening Level	110,000	1,900,000	57,000	NE	3,800	18,000	24,000	3,600,000	NE	18,000,000	1,100	110	1,100
Sample ID	Sample Collection Date	Analytical Results				Analytical Results								
SA-SB-01 (0.5-1.0)	11/15/2019	<10.7	<5.3	<21.4	<5.3	<5.3	**32.8**	**44.7**	**3.5 j**	<11.8	**27.6**	**36.2**	**25.8**	**53.6**
SA-SB-01 (5.5-6.0)	11/15/2019	<12.6	<6.3	<25.3	<6.3	<6.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3
SA-SB-02 (0.5-1.0)	11/12/2019	<13.4	<6.7	<26.8	<6.7	**3.2 j**	**1.1 j**	**1.7 j**	<12.2	**0.6 j**	**2.4 j**	**7.2 j**	**7.7 j**	**9.9 j**
SA-SB-02 (5.5-6.0)	11/12/2019	<13.6	<6.8	<27.2	<6.8	<6.8	**35.3**	**77.6**	**4.2 j**	<12.2	**10 j**	**8.5 j**	**6.6 j**	**18.2**
SA-SB-03 (0.5-1.0)	11/15/2019	<10.3	<5.1	<20.5	<5.1	<5.1	**11.3 j**	**16.4**	**1.3 j**	**2.8 j**	**13**	**34.1**	**58.5**	**79**
SA-SB-03 (5.5-6.0)	11/15/2019	<12	<6	<24.1	<6	<6	**12 j**	**16.9**	<12.5	**1.2 j**	**12.6**	**21.5**	**14.6**	**27.9**
SA-SB-04 (0.5-1.0)	11/13/2019	<9.2	<4.6	<18.3	<4.6	<4.6	**104**	**153**	**10.1 j**	**61.9**	**92.3**	**204**	**183**	**283**
SA-SB-04 (5.5-6.0)	11/13/2019	<8.7	<4.4	<17.4	<4.4	<4.4	NA	NA	NA	NA	NA	NA	NA	NA
SA-SB-05 (0.5-1.0)	11/12/2019	<8.6	<4.3	<17.2	<4.3	<4.3	**49.3**	**57.5**	<11.4	**8.1 j**	**16.9**	**35.8**	**39.9**	**64.4**
SA-SB-05 (5.5-6.0)	11/12/2019	<9	<4.5	<18.1	<4.5	<4.5	**40.1**	**53.1**	<11.5	**2.7 j**	**31.7**	**54.2**	**43**	**77.1**
SA-SB-06 (0.5-1.0)	11/12/2019	<222	<111	<444	<111	<111	**7.3 j**	**11.6 j**	**0.96 j**	**2.3 j**	**8.7 j**	**14.1**	**11.1 j**	**23.1**
SA-SB-06 (5.5-6.0)	11/12/2019	<9.8	<4.9	<19.5	<4.9	<4.9	**39.5**	**54.2**	<11.8	<11.8	**27.4**	**45.9**	**28.9**	**56.7**
SA-SB-07 (0.5-1.0)	11/13/2019	<11.5	<5.8	<23	<5.8	<5.8	**71.3**	**90.4**	<11.7	**24.6**	**49**	**112**	**85.1**	**161**
SA-SB-07 (5.5-6.0)	11/13/2019	<9	<4.5	<18	<4.5	<4.5	**107**	**156**	**19**	<11.4	**227**	**589**	**469**	**893**
SA-SB-08 (0.5-1.0)	11/13/2019	<9.3	<4.7	<18.7	<4.7	<4.7	**70.1**	**101**	**5.7 j**	**18.4**	**41.5**	**104**	**91.5**	**170**
SA-SB-08 (5.5-6.0)	11/13/2019	<9.6	<4.8	<19.2	<4.8	<4.8	**186**	**295**	**31.4**	**110**	**229**	**418**	**311**	**538**
SA-SB-09 (0.5-1.0)	11/13/2019	<9.5 R0	<4.8 R0	<19.1 R0	<4.8 R0	<4.8 R0	**43.7**	**57.8**	**15.9**	**26.1**	**145**	**618**	**673**	**856**
SA-SB-09 (5.5-6.0)	11/13/2019	<233	<116	<465	<116	**829**	**24.5**	**41.1**	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8
SA-SB-10 (0.5-1.0)	11/12/2019	<298	<149	<596	<149	<149	**19.2**	**22.4**	<12.6	<12.6	**9.1 j**	**13.8**	**9.6 j**	**21.9**
SA-SB-10 (5.5-6.0)	11/12/2019	<8	<4	<16	<4	<4	**208**	**278**	<11.6	**9.2 j**	**39.6**	**75.4**	**72**	**133**
SA-SB-11 (0.5-1.0)	11/12/2019	<10.8	<5.4	<21.6	<5.4	**10.3 j**	**2.8 j**	**4.3 j**	<12.8	**0.85 j**	**1.7 j**	**4.5 j**	**4.1 j**	**7.7 j**
SA-SB-11 (5.5-6.0)	11/12/2019	<8.9	<4.4	<17.7	<4.4	<4.4	**9.6 j**	**13.5**	**1.2 j**	**2.7 j**	**8.3 j**	**14.6**	**10.9 j**	**18.7**
SA-SB-12 (0.5-1.0)	11/14/2019	<9.2	<4.6	<18.4	<4.6	<4.6	**63.5**	**86.6**	**10.7 j**	**86.3**	**132**	**212**	**158**	**227**
SA-SB-12 (5.5-6.0)	11/14/2019	<451	<226	**810 j**	<226	**66.1 j**	**12.3**	**18.8**	**2.1 j**	**4.1 j**	**17.1**	**31.2**	**22.6**	**42.4**
SA-SB-13 (0.5-1.0)	11/13/2019	<9.7	<4.9	<19.4	<4.9	<4.9	**24.2**	**32.1**	<11.9	**10.2 j**	**19.1**	**43.9**	**39.1**	**71.6**
SA-SB-13 (5.5-6.0)	11/13/2019	<9.3	<4.7	<18.7	<4.7	<4.7	**199**	**289**	**55.5**	**51.6**	**268**	**368**	**309**	**451**
SA-SB-14 (0.5-1.0)	11/13/2019	<10.5	<5.3	<21	<5.3	<5.3	**38.5**	**50**	**6.1 j**	**10.8 j**	**32.8**	**82.3**	**118**	**145**
SA-SB-14 (5.5-6.0)	11/13/2019	<2,250	<1,130	<4,510	<1,130	**27,300 M1**	**3,380**	**6,460**	**173**	**375**	**484**	**214**	**193**	**154**
SA-SB-15 (0.5-1.0)	11/12/2019	<8.9	<4.5	<17.9	<4.5	<4.5	**47**	**63.2**	**5.6 j**	<12.1	**29**	**62.5**	**173**	**159**
SA-SB-15 (5.5-6.0)	11/12/2019	<9.3	<4.7	<18.6	<4.7	<4.7	**97.5**	**134**	**20**	**79.6**	**165**	**185**	**144**	**189**
SA-SB-16 (0.5-1.0)	11/12/2019	<11.1	<5.6	<22.2	<5.6	<5.6	**26.3**	**35.6**	**6.8 j**	**16.2**	**39.9**	**86.5**	**91.5**	**130**
SA-SB-16 (5.5-6.0)	11/12/2019	<7.5	<3.8	<15.1	<3.8	<3.8	**18.8**	**26.6**	<12.1	**3 j**	**9.2 j**	**17.7**	**18.4**	**24.3**
SA-SB-17 (0.5-1.0)	11/12/2019	<294	<147	**628**	<147	**85.2 j**	**1.3 j**	**2 j**	<14.8	<14.8	<14.8	**1.4 j**	**0.89 j**	**1.9 j**
SA-SB-17 (5.5-6.0)	11/12/2019	<8.4	<4.2	<16.8	<4.2	**3.2 j**	**2.1 j**	**2.9 j**	<11.2	**0.92 j**	**1.4 j**	**3.8 j**	**4.3 j**	**8 j**
SA-SB-18 (0.5-1.0)	11/14/2019	<10.2	<5.1	<20.3	<5.1	<5.1	**48.8**	**69.7**	**18.7**	**7.6 j**	**92.4**	**109**	**70.8**	**134**
SA-SB-18 (5.5-6.0)	11/14/2019	<9.7	<4.8	<19.4	<4.8	<4.8	**110**	**178**	**24.8**	**62.7**	**161**	**268**	**227**	**322**
SA-SB-19 (0.5-1.0)	11/14/2019	<282	<141	<565	<141	**40.2 j**	**3 j**	**4.9 j**	**0.61 j**	**2.6 j**	**5.8 j,R1**	**12.5 M1,R1**	**10.7 j,M1,R1**	**21 M1,R1**
SA-SB-19 (5.5-6.0)	11/14/2019	<9.9	<4.9	<19.8	<4.9	<4.9	**56.3 S1**	**88.2 S1**	**16.4 S1**	**23.7**	**109 S1**	**142 S1**	**125 S1**	**185 S1**
SA-SB-20 (0.5-1.0)	11/13/2019	<11.4	<5.7	<22.8	<5.7	<5.7	**20.8**	**29.2**	<11.4	**7.3 j**	**14.8**	**35**	**33.3**	**63.9**
SA-SB-20 (5.5-6.0)	11/13/2019	<8	<4	<16.1	<4	**1.9 j**	**0.83 j**	**0.95 j**	<11.5	**1.9 j**	**1.3 j**	**3.8 j**	**3.9 j**	**5.1 j**
SA-SB-21 (0.5-1.0)	11/13/2019	<8.3	<4.2	<16.6	<4.2	<4.2	**25.3**	**35.6**	**17.2**	**147**	**224**	**372**	**331**	**429**
SA-SB-21 (5.5-6.0)	11/13/2019	<6.5	<3.3	<13	<3.3	<3.3	**12.7**	**17.4**	**6.6 j**	**3.9 j**	**22.1**	**40.2**	**34**	**49.8**
SA-SB-22 (0.5-1.0)	11/13/2019	<10.8	<5.4	<21.6	<5.4	<5.4	**16.9**	**26**	**2.5 j**	**4.8 j**	**22.9**	**57.6**	**63.5**	**112**
SA-SB-22 (5.5-6.0)	11/13/2019	<8.5	<4.2	<16.9	<4.2	**6.2 j**	**2 j**	**2 j**	**34.2**	**126**	**112**	**94.3**	**86.4**	**96.9**
SA-SB-23 (0.5-1.0)	11/12/2019	<10.7	<5.3	<21.3	<5.3	**10.6 j**	**4.6 j**	**7 j**	**0.65 j**	**6.5 j**	**8 j**	**31.2**	**43.5**	**58.5**
SA-SB-23 (5.5-6.0)	11/12/2019	<10.4	<5.2	<20.9	<5.2	<5.2	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8
SA-SB-24 (0.5-1.0)	11/12/2019	<8	<4	<16.1	<4	<4	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5
SA-SB-24 (5.5-6.0)	11/12/2019	<8.8	<4.4	<17.5	<4.4	<4.4	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2
SA-SB-25 (0.5-1.0)	11/14/2019	<9.2	<4.6	<18.4	<4.6	<4.6	**14.6**	**21.5**	**2.4 j**	**15**	**30.2**	**76.2**	**68.8**	**111**
SA-SB-25 (5.5-6.0)	11/14/2019	<9.6	<4.8	<19.1	<4.8	**2.3 j,B**	**58.9**	**87.4**	**9.9 j**	**25.3**	**85.9**	**136**	**130**	**184**
SA-SB-26 (0.5-1.0)	11/14/2019	<307	<153	<613	<153	**9.6 j,B**	**5.9 j**	**7.6 j**	**0.66 j**	**1.9 j**	**4.1 j**	**15.5**	**32**	**39.3**
SA-SB-26 (5.5-6.0)	11/14/2019	<8.6	<4.3	<17.3	<4.3	<4.3	**79.9**	**114**	**14.5**	**33.7**	**85.5**	**153**	**118**	**199**
SA-SB-27 (0.5-1.0)	11/13/2019	<9.8	<4.9	<19.5	<4.9	**9.6 j,S1**	**5.8 j,S1**	**8.2 j,S1**	<12.4	**2.7 j,M1**	**3.9 j,M1,S1**	**9.8 j,M1,S1**	**9.1 j,M1,S1**	**14.3 M1,S1**

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8270D (PAH)									8270D (Other SVOC)		
	Analytical Parameter	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	1,2,4-Trichlorobenzene	4-Bromophenylphenyl ether	Dibenzofuran
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	NE	210,000	2,100,000	2,100	30,000,000	30,000,000	21,000	NE	23,000,000	110,000	NE	1,000,000
	Residental Screening Level	NE	11,000	110,000	110	2,400,000	2,400,000	1,100	NE	1,800,000	24,000	NE	73,000
Sample ID	Sample Collection Date	Analytical Results									Analytical Results		
SA-SB-01 (0.5-1.0)	11/15/2019	34.7	16.4	52.5	8.3 j	121	8.4 j	24.7	169	71.9	<5.3	<383	<383
SA-SB-01 (5.5-6.0)	11/15/2019	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<12.3	<6.3	<407	<407
SA-SB-02 (0.5-1.0)	11/12/2019	6.5 j	4.3 j	6.7 j	1.4 j	11.9 j	1.1 j	5.1 j	9 j	10.4 j	<6.7	<397	<397
SA-SB-02 (5.5-6.0)	11/12/2019	5.9 j	9.9 j	9.1 j	1.5 j	18.2	2.2 j	4.7 j	40.8	15.8	<6.8	<401	<401
SA-SB-03 (0.5-1.0)	11/15/2019	66.5	23.5	42.7	15.6	54.9	1.6 j	51.6	68	45.5	<5.1	<391	<391
SA-SB-03 (5.5-6.0)	11/15/2019	15.8	11.3 j	25.4	4 j	52.4	3.3 j	11.4 j	54.3	36.1	<6	<414	<414
SA-SB-04 (0.5-1.0)	11/13/2019	164	94.8	220	39.2	326	26.6	129	306	287	<4.6	<384	98.9 j
SA-SB-04 (5.5-6.0)	11/13/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4.4	NA	NA
SA-SB-05 (0.5-1.0)	11/12/2019	52.8	24.1	44.5	11.9	58.6	2.8 j	40.3	70.3	49.2	<4.3	<381	<381
SA-SB-05 (5.5-6.0)	11/12/2019	50.1	32.3	68.6	12.4	125	5.4 j	37.7	182	90.2	<4.5	<371	<371
SA-SB-06 (0.5-1.0)	11/12/2019	12.6	8.2 j	18.7	3.3 j	28.3	0.94 j	9.9 j	40.2	21.1	<111	<406	<406
SA-SB-06 (5.5-6.0)	11/12/2019	31.6	20	58.1	7.7 j	114	6.2 j	22.1	156	86.5	<4.9	<388	<388
SA-SB-07 (0.5-1.0)	11/13/2019	96.2	60.1	133	23.4	197	9.8 j	69.9	227	169	<5.8	<390	<390
SA-SB-07 (5.5-6.0)	11/13/2019	422	282	668	121	1,140	43.3	349	942	814	<4.5	<379	102 j
SA-SB-08 (0.5-1.0)	11/13/2019	114	56.2	123	27.5	169	5.7 j	83.9	210	162	<4.7	<394	<394
SA-SB-08 (5.5-6.0)	11/13/2019	244	191	461	70.3	763	59.8	200	880	714	<4.8	<381	79 j
SA-SB-09 (0.5-1.0)	11/13/2019	539	369	597	161	785	14.6	464	400	810	<4.8 R0	<403	<403
SA-SB-09 (5.5-6.0)	11/13/2019	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	7.2 j	<11.8	<116	<387	<387
SA-SB-10 (0.5-1.0)	11/12/2019	11.7 j	5.9 j	20.5	3.3 j	30.6	1.2 j	8.7 j	63.5	24.7	<149	<418	<418
SA-SB-10 (5.5-6.0)	11/12/2019	68.8	47.1	99.5	21.2	119	17.5	57.2	224	112	<4	<377	<377
SA-SB-11 (0.5-1.0)	11/12/2019	3.8 j	2.8 j	5.4 j	<12.8	7.4 j	<12.8	3.2 j	8.1 j	6.3 j	<5.4	<417	<417
SA-SB-11 (5.5-6.0)	11/12/2019	9.5 j	8 j	18.1	2.7 j	36.9	2.8 j	7.7 j	42	27.6	<4.4	<361	<361
SA-SB-12 (0.5-1.0)	11/14/2019	110	86.4	203	29.3	443	55.2	89.9	496	391	<4.6	<390	<390
SA-SB-12 (5.5-6.0)	11/14/2019	17.9	14.6	38.6	5.4 j	71.3	4.9 j	15.1	88.6	54.7	<226	<381	<381
SA-SB-13 (0.5-1.0)	11/13/2019	39	22.3	55.6	10 j	84	2.8 j	30.5	96.8	72.4	<4.9	<389	<389
SA-SB-13 (5.5-6.0)	11/13/2019	231	188	396	69.1	733	95.1	184	928	679	<4.7	<403	171 j
SA-SB-14 (0.5-1.0)	11/13/2019	161	50.9	102	29.9	171	7.4 j	106	167	142	<5.3	<393	<393
SA-SB-14 (5.5-6.0)	11/13/2019	82.7	75.4	166	26.3 j	506	708	71.1	1,800	744	<1,130	<381	804
SA-SB-15 (0.5-1.0)	11/12/2019	388	53.7	88.2	69.6	116	4.2 j	272	157	108	<4.5	<402	<402
SA-SB-15 (5.5-6.0)	11/12/2019	92.1	64	180	24.6	430	74.6	74.3	534	354	<4.7	<397	194 j
SA-SB-16 (0.5-1.0)	11/12/2019	81.1	48.5	99.5	21.5	143	9.6 j	63.5	177	184	<5.6	108 j	<391
SA-SB-16 (5.5-6.0)	11/12/2019	15.5	10.3 j	20.8	3.8 j	35.8	2.4 j	11.7 j	45.7	32.5	<3.8	<403	<403
SA-SB-17 (0.5-1.0)	11/12/2019	<14.8	0.68 j	1.6 j	<14.8	2.6 j	<14.8	<14.8	5.1 j	1.8 j	<147	<490	<490
SA-SB-17 (5.5-6.0)	11/12/2019	3.3 j	7.5 j	4.6 j	<11.2	7.4 j	<11.2	2.7 j	7.9 j	5.9 j	<4.2	<373	<373
SA-SB-18 (0.5-1.0)	11/14/2019	65.6	41.6	131	17.5	249	36.5	46.7	305	242	<5.1	<393	89.1 j
SA-SB-18 (5.5-6.0)	11/14/2019	205	130	279	49.4	465	59.8	154	552	435	<4.8	<377	117 j
SA-SB-19 (0.5-1.0)	11/14/2019	11.4 j,M1,R1	6.5 j,M1,R1	16 M1,R1	3.2 j,M1,R1	23.5 M1,R1	0.82 j	9 j,M1,R1	26	22.5 M1,R1	<141	<398	<398
SA-SB-19 (5.5-6.0)	11/14/2019	112 S1	77.5 S1	163 S1	28.6 S1	314 S1	37	87 S1	400 S1	277	<4.9	<385	118 j
SA-SB-20 (0.5-1.0)	11/13/2019	39.1	18.1	47.9	10 j	66.1	2.1 j	29.8	73.9	53.8	<5.7	<385	88.6 j
SA-SB-20 (5.5-6.0)	11/13/2019	2.4 j	2.2 j	3.9 j	<11.5	6.9 j	<11.5	2.1 j	4 j	6.7 j	<4	<381	<381
SA-SB-21 (0.5-1.0)	11/13/2019	252	187	331	50.3	838	97.3	198	791	736	<4.2	<385	234 j
SA-SB-21 (5.5-6.0)	11/13/2019	29.1	21.8	45.6	7.1 j	102	9.7 j	22.6	110	76.1	<3.3	<389	<389
SA-SB-22 (0.5-1.0)	11/13/2019	86.1	38	82.5	19.8	113	2.7 j	63.7	117	90.9	<5.4	<387	432
SA-SB-22 (5.5-6.0)	11/13/2019	53.9	34.1	79.7	12.8	274	120	47	<11.9	222	<4.2	<382	<382
SA-SB-23 (0.5-1.0)	11/12/2019	40.8	22.5	34	9.1 j	41.5	1.2 j	32.5	26.9	40.4	<5.3	<399	<399
SA-SB-23 (5.5-6.0)	11/12/2019	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<11.8	<5.2	<397	<397
SA-SB-24 (0.5-1.0)	11/12/2019	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<4	<404	<404
SA-SB-24 (5.5-6.0)	11/12/2019	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<4.4	<400	<400
SA-SB-25 (0.5-1.0)	11/14/2019	69.2	35.8	82.6	18.2	116	4.5 j	55.8	105	109	<4.6	<403	<403
SA-SB-25 (5.5-6.0)	11/14/2019	125	58.3	146	31.1	243	20.5	97.3	261	221	<4.8	<399	72 j
SA-SB-26 (0.5-1.0)	11/14/2019	26.1	13.5	17.2	8.2 j	14.1	1.5 j	23.6	21.1	16.5	55.5 j	<420	<420
SA-SB-26 (5.5-6.0)	11/14/2019	98	69.4	179	26.3	371	36.9	79.1	483	326	<4.3	<388	80.2 j
SA-SB-27 (0.5-1.0)	11/13/2019	8.5 j,M1,R1,S1	6.1 j,M1,S1	11.8 j,M1,S1	2.3 j,M1,S1	16.5 M1,S1	0.81 j,M1	6.7 j,M1,S1	17.4 M1,S1	15.7 M1,S1	<398	<398	<398

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		ASTM D2974-87	8260B (VOA and MTBE)							8260B (Other VOC)						
Analytical Parameter		Percent Moisture	Benzene	Ethylbenzene	Toluene	Xylene			MTBE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Butanone (MEK)	2-Hexanone	Acetone	Bromomethane	Chloroform
						m&p-Xylene	o-Xylene	Xylene (Total)								
Reporting Units		%	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Industrial Screening Level		NE	5,100	25,000	47,000,000	2,400,000	2,800,000	2,500,000	210,000	1,800,000	1,500,000	190,000,000	1,300,000	670,000,000	30,000	1,400
Residental Screening Level		NE	1,200	5,800	4,900,000	560,000	650,000	580,000	47,000	300,000	270,000	27,000,000	200,000	61,000,000	6,800	320
Sample ID	Sample Collection Date	Analytical Results	Analytical Results							Analytical Results						
SA-SB-27 (5.5-6.0)	11/13/2019	14.9	<4.5	<4.5	<4.5	<9.1	<4.5	<9.1	<4.5	<4.5	<4.5	<90.9	<45.5	<90.9	<9.1	<4.5
SA-SB-28 (0.5-1.0)	11/13/2019	14.8	<4.3 R0	<4.3 R0	<4.3 R0	<8.6 R0	<4.3 R0	<8.6 R0	<4.3 R0	<4.3 R0	<4.3 R0	<86.5 R0	<43.2 R0	<86.5 R0	<8.6 R0	<4.3 R0
SA-SB-28 (5.5-6.0)	11/13/2019	16.7	<4.5	<4.5	<4.5	<9.1	<4.5	<9.1	<4.5	<4.5	<4.5	<91	<45.5	<91	<9.1	<4.5
SA-SB-29 (0.5-1.0)	11/13/2019	13.7	<4.4	<4.4	<4.4	<8.8	<4.4	<8.8	<4.4	<4.4	<4.4	<88.3	<44.2	<88.3	<8.8	<4.4
SA-SB-29 (5.5-6.0)	11/13/2019	16.1	<4.3	<4.3	<4.3	<8.6	<4.3	<8.6	<4.3	<4.3	<4.3	<85.6	<42.8	**23.8 j**	<8.6	<4.3
SA-SB-30 (0.5-1.0)	11/13/2019	5.4	<3.9	<3.9	<3.9	<7.8	<3.9	<7.8	<3.9	<3.9	<3.9	<78.4	<39.2	<78.4	<7.8	<3.9
SA-SB-30 (5.5-6.0)	11/13/2019	19.9	<4.1	<4.1	<4.1	<8.1	<4.1	<8.1	<4.1	<4.1	<4.1	<81.3	<40.6	**18.2 j**	<8.1	<4.1
SA-SB-31 (0.5-1.0)	11/12/2019	14.3	<107	<107	<107	<214	<107	<214	<107	<107	<107	<2,140	<1,070	<2,140	<214	<107
SA-SB-31 (5.5-6.0)	11/12/2019	20.6	<4.8	<4.8	<4.8	<9.6	<4.8	<9.6	<4.8	<4.8	<4.8	<95.8	<47.9	<95.8	<9.6	<4.8
SA-SB-32 (0.5-1.0)	11/14/2019	11.1	<4.2	<4.2	<4.2	<8.5	<4.2	<8.5	<4.2	<4.2	<4.2	<84.8	**11.6 j**	**69.9 j**	<8.5	<4.2
SA-SB-32 (5.5-6.0)	11/14/2019	13.4	<4.8	<4.8	<4.8	<9.6	<4.8	<9.6	<4.8	<4.8	<4.8	<95.9	<48	**43.7 j**	<9.6	<4.8
SA-SB-33 (0.5-1.0)	11/14/2019	18.3	<5	<5	<5	<10	<5	<10	<5	<5	<5	<100	<50	<100	<10	<5
SA-SB-33 (5.5-6.0)	11/14/2019	15	<130	<130	<130	<261	<130	<261	<130	<130	<130	<2,610	<1,300	<2,610	<261	<130
SA-SB-34 (0.5-1.0)	11/14/2019	15.5	<5.5	<5.5	<5.5	<11	<5.5	<11	<5.5	<5.5	<5.5	<110	<55	<110	<11	<5.5
SA-SB-34 (5.5-6.0)	11/14/2019	16.7	<4.5	<4.5	<4.5	<9	<4.5	<9	<4.5	<4.5	<4.5	<90	<45	<90	<9	<4.5
SA-SB-35 (0.5-1.0)	11/13/2019	12.9	<5.1 R0	<5.1 R0	<5.1 R0	<10.1 R0	<5.1 R0	<10.1 R0	<5.1 R0	<5.1 R0	<5.1 R0	<101 R0	<50.7 R0	<101 R0	<10.1 R0	<5.1 R0
SA-SB-35 (5.5-6.0)	11/13/2019	17.5	<4	<4	<4	<7.9	<4	<7.9	<4	<4	<4	<79.3	<39.7	<79.3	<7.9	<4
SA-SB-36 (0.5-1.0)	11/13/2019	10.1	<4.3	<4.3	<4.3	<8.5	<4.3	<8.5	<4.3	<4.3	<4.3	<85.2	<42.6	<85.2	<8.5	<4.3
SA-SB-36 (5.5-6.0)	11/13/2019	9.4	<4.5	<4.5	<4.5	<9	<4.5	<9	<4.5	<4.5	<4.5	<89.7	<44.9	<89.7	<9	<4.5
SA-SB-37 (0.5-1.0)	11/13/2019	9.2	<4	<4	<4	<8.1	<4	<8.1	<4	<4	<4	<80.8	<40.4	**11.3 j**	<8.1	<4
SA-SB-37 (5.5-6.0)	11/13/2019	20.4	<4.9 R0	<4.9 R0	<4.9 R0	<9.7 R0	<4.9 R0	<9.7 R0	<4.9 R0	<4.9 R0	<4.9 R0	<97.2 R0	<48.6 R0	<97.2 R0	<9.7 R0	<4.9 R0
SA-SB-38 (0.5-1.0)	11/12/2019	24.7	<4.8	<4.8	<4.8	<9.5	<4.8	<9.5	<4.8	<4.8	<4.8	<95.4	**82.1**	**71 j**	<9.5	<4.8
SA-SB-38 (5.5-6.0)	11/12/2019	18.9	<5.3	<5.3	<5.3	<10.5	<5.3	<10.5	<5.3	<5.3	<5.3	<105	<52.5	**22.5 j**	<10.5	<5.3
SA-SB-39 (0.5-1.0)	11/14/2019	14.7	<4.6	<4.6	<4.6	<9.2	<4.6	<9.2	<4.6	<4.6	<4.6	**3.9 j**	**67.3**	**123**	<9.2	<4.6
SA-SB-39 (5.5-6.0)	11/14/2019	15.7	<4.2	<4.2	<4.2	<8.3	<4.2	<8.3	<4.2	<4.2	<4.2	<83.4	<41.7	<83.4	<8.3	<4.2
SA-SB-40 (0.5-1.0)	11/14/2019	21.5	<6.3	<6.3	<6.3	<12.6	<6.3	<12.6	<6.3	<6.3	<6.3	<126	<62.8	<126	<12.6	<6.3
SA-SB-40 (5.5-6.0)	11/14/2019	12.4	<4.2	<4.2	<4.2	<8.5	<4.2	<8.5	<4.2	<4.2	<4.2	<84.8	<42.4	<84.8	<8.5	<4.2
SA-SB-41 (0.5-1.0)	11/14/2019	17	<4.7	<4.7	<4.7	<9.5	<4.7	<9.5	<4.7	<4.7	<4.7	<94.5	<47.3	**26.2 j**	<9.5	<4.7
SA-SB-41 (5.5-6.0)	11/14/2019	13.7	<4.4	<4.4	<4.4	<8.9	<4.4	<8.9	<4.4	<4.4	<4.4	<88.8	<44.4	<88.8	<8.9	<4.4
SA-SB-42 (0.5-1.0)	11/14/2019	17	<5.3	<5.3	<5.3	<10.5	<5.3	<10.5	<5.3	<5.3	<5.3	<105	**70.6**	**113**	<10.5	<5.3
SA-SB-42 (5.5-6.0)	11/14/2019	12.2	<3.9	<3.9	<3.9	<7.7	<3.9	<7.7	<3.9	<3.9	<3.9	<77.4	<38.7	<77.4	<7.7	<3.9
SA-SB-43 (0.5-1.0)	11/13/2019	17	<4.5	<4.5	<4.5	<9	<4.5	<9	<4.5	<4.5	<4.5	<89.7	<44.8	<89.7	<9	<4.5
SA-SB-43 (5.5-6.0)	11/13/2019	12.8	<4.7	<4.7	<4.7	<9.3	<4.7	<9.3	<4.7	<4.7	<4.7	<93.5	<46.7	**10.2 j**	<9.3	<4.7
SA-SB-44 (0.5-1.0)	11/14/2019	20.4	<4.7	<4.7	<4.7	<9.5	<4.7	<9.5	<4.7	<4.7	<4.7	<94.8	**4.6 j**	**59.5 j**	<9.5	<4.7
SA-SB-44 (5.5-6.0)	11/14/2019	18.7	<4.1	**3 j**	<4.1	<8.1	<4.1	<8.1	<4.1	**4.2**	**1.5 j**	<81.4	<40.7	<81.4	<8.1	<4.1
SA-SB-45 (0.5-1.0)	11/14/2019	21.8	<5.7	<5.7	<5.7	<11.5	<5.7	<11.5	<5.7	<5.7	<5.7	<115	**37.8 j**	**168**	<11.5	<5.7
SA-SB-45 (5.5-6.0)	11/14/2019	15.2	<112	<112	<112	<223	<112	<223	<112	<112	<112	<2,230	<1,120	<2,230	<223	<112
SA-SB-46 (0.5-1.0)	11/14/2019	14.3	<6.2	<6.2	<6.2	<12.3	<6.2	<12.3	<6.2	<6.2	<6.2	<123	<61.6	<123	<12.3	<6.2
SA-SB-46 (5.5-6.0)	11/14/2019	27.2	<6.1	<6.1	<6.1	<12.2	<6.1	<12.2	<6.1	<6.1	<6.1	<122	<61	**76.8 j,M1**	<12.2	<6.1
SA-SB-47 (0.5-1.0)	11/14/2019	43.3	<8.9	<8.9	<8.9	<17.7	<8.9	<17.7	<8.9	<8.9	<8.9	<177	<88.6	<177	<17.7	<8.9
SA-SB-47 (5.5-6.0)	11/14/2019	18.8	<4.6	<4.6	<4.6	<9.1	<4.6	<9.1	<4.6	<4.6	<4.6	<91.3	<45.7	<91.3	<9.1	<4.6
T10-SB3 (14.5)	03/14/2019	11.4	**4.5 j,M1**	**6.4 j,M1,R1**	<7.1	<14.3	<7.1	<14.3	<7.1	<7.1	<7.1	<143	<71.3	**14.7 j,L1**	<14.3	<7.1
T11-SB1 (18.5)	03/14/2019	7.2	<5.6	<5.6	<5.6	<11.2	<5.6	<11.2	<5.6	<5.6	<5.6	<112	<56.1	<112	<11.2	<5.6
T11-SB2 (16.5)	03/14/2019	8.7	<8.4	<8.4	<8.4	<16.8	<8.4	<16.8	<8.4	<8.4	<8.4	<168	<84	<168	<16.8	<8.4
T11-SB3 (13.5)	03/14/2019	11.9	<6.6	<6.6	<6.6	<13.1	<6.6	<13.1	<6.6	<6.6	<6.6	<131	<65.7	<131	<13.1	<6.6
T12-SB1 (16.5)	03/20/2019	14.3	<5	<5	<5	<10	<5	<10	<5	<5	<5	<99.5	<49.8	**67.2 j**	<10	<5
T12-SB3 (16)	03/20/2019	20.2	<6.2	<6.2	<6.2	<12.4	<6.2	<12.4	<6.2	<6.2	<6.2	<124	<61.8	**89.6 j**	<12.4	<6.2
T13-SB1 (13)	03/20/2019	8.9	<5.6	<5.6	<5.6	<11.1	<5.6	<11.1	<5.6	<5.6	<5.6	<111	<55.7	**40.7 j**	<11.1	<5.6
T13-SB2 (15)	03/20/2019	19	<6.5	<6.5	<6.5	<12.9	<6.5	<12.9	<6.5	<6.5	<6.5	<129	<64.7	**67.3 j**	<12.9	<6.5
T14-SB3 (12.5)	03/19/2019	26.1	<5.6	<5.6	<5.6	<11.2	<5.6	<11.2	<5.6	<5.6	<5.6	<112	<55.8	**74.4 j**	<11.2	**2.4 j,B**
T15-SB1 (15.5)	03/19/2019	16.5	<6.8	<6.8	<6.8	<13.5	<6.8	<13.5	<6.8	<6.8	<6.8	<135	<67.6	<135	<13.5	**2.9 j,B**
T15-SB2 (17)	03/19/2019	9	<3.9	<3.9	<3.9	<7.7	<3.9	<7.7	<3.9	<3.9	<3.9	<77.5	<38.7	**69.7 j**	<7.7	**1.8 j,B**

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8260B (Other VOC)				8270D (PAH)								
	Analytical Parameter	Chloromethane	Isopropylbenzene (Cumene)	Methylene chloride	p-Isopropyltoluene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	460,000	9,900,000	1,000,000	NE	17,000	73,000	3,000,000	45,000,000	NE	230,000,000	21,00	2,100	21,000
	Residental Screening Level	110,000	1,900,000	57,000	NE	3,800	18,000	24,000	3,600,000	NE	18,000,000	1,100	110	1,100
Sample ID	Sample Collection Date	Analytical Results				Analytical Results								
SA-SB-27 (5.5-6.0)	11/13/2019	<9.1	<4.5	<18.2	<4.5	<4.5	69.9 M1,S1	83.2 M1,S1	7.5 j	48.5 M1,R1,S1	40.9 M1,S1	109 M1	104 M1	143 M1
SA-SB-28 (0.5-1.0)	11/13/2019	<8.6 R0	<4.3 R0	<17.3 R0	<4.3 R0	<4.3 R0	13	19.2	3.2 j	27.7	45.9	116	102	155
SA-SB-28 (5.5-6.0)	11/13/2019	<9.1	<4.5	<18.2	<4.5	4.7 j	3 j	2 j	9.4 j	6.8 j	25.3	51.2	42.1	58
SA-SB-29 (0.5-1.0)	11/13/2019	<8.8	<4.4	<17.7	<4.4	<4.4	24.6	35.3	3.3 j	28.3	36.9	99.7	83	151
SA-SB-29 (5.5-6.0)	11/13/2019	<8.6	<4.3	<17.1	<4.3	7.3 j	1.8 j	3.2 j	0.82 j	28.9	16.7	68.9	80.9	100
SA-SB-30 (0.5-1.0)	11/13/2019	<7.8	<3.9	<15.7	<3.9	3.2 j	1.1 j	1.7 j	0.82 j	24.2	12	36.4	42.8	56.7
SA-SB-30 (5.5-6.0)	11/13/2019	<8.1	<4.1	<16.3	<4.1	1.3 j,B	<12.5	<12.5	<12.5	1.7 j	1.2 j	4 j	4.2 j	5.1 j
SA-SB-31 (0.5-1.0)	11/12/2019	<214	<107	502	<107	<107	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6
SA-SB-31 (5.5-6.0)	11/12/2019	<9.6	<4.8	<19.2	<4.8	<4.8	<12.6	<12.6	<12.6	<12.6	1.2 j	<12.6	<12.6	<12.6
SA-SB-32 (0.5-1.0)	11/14/2019	<8.5	<4.2	<17	<4.2	<4.2	<11.3	<11.3	<11.3	0.54 j	<11.3	0.83 j	0.72 j	1.1 j
SA-SB-32 (5.5-6.0)	11/14/2019	<9.6	<4.8	<19.2	<4.8	5.1 j,B	1.9 j	3 j	2 j	12.1	12	37.6	36.1	46.7
SA-SB-33 (0.5-1.0)	11/14/2019	<10	<5	<20	<5	<5	11.7 j,S1	17.2 S1	2 j,S1	15.3 S1	25 S1	39.6 S1	34.2 S1	54 S1
SA-SB-33 (5.5-6.0)	11/14/2019	<261	<130	<521	<130	116 M1	45.3 M1	71.3 M1	10.7 j	28.4 M1	86 M1	143 M1	108 M1	192 M1
SA-SB-34 (0.5-1.0)	11/14/2019	<11	<5.5	<22	<5.5	<5.5	24.6	35.4	3.2 j	6.8 j	28	53	42.3	84.1
SA-SB-34 (5.5-6.0)	11/14/2019	<9	<4.5	<18	<4.5	<4.5	182	266	42.1	<12.2	131	157	127	212
SA-SB-35 (0.5-1.0)	11/13/2019	<10.1 R0	<5.1 R0	<20.3 R0	<5.1 R0	<5.1 R0	55.2	81	6.7 j	<11.3	68.4	114	64.6	157
SA-SB-35 (5.5-6.0)	11/13/2019	<7.9	<4	<15.9	<4	<4	<12.2	<12.2	<12.2	<12.2	<12.2	1.5 j	1.4 j	2.3 j
SA-SB-36 (0.5-1.0)	11/13/2019	<8.5	<4.3	<17	<4.3	0.93 j	<11.5	<11.5	<11.5	1.8 j	0.94 j	2.7 j	3 j	4.3 j
SA-SB-36 (5.5-6.0)	11/13/2019	<9	<4.5	<17.9	<4.5	<4.5	<11.3	<11.3	<11.3	<11.3	1.1 j	3.1 j	2.8 j	2.3 j
SA-SB-37 (0.5-1.0)	11/13/2019	<8.1	<4	<16.2	<4	1.2 j	<11	<11	<11	5.1 j	3.3 j	9.9 j	10.4 j	14.1
SA-SB-37 (5.5-6.0)	11/13/2019	<9.7 R0	<4.9 R0	<19.4 R0	<4.9 R0	<4.9 R0	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4
SA-SB-38 (0.5-1.0)	11/12/2019	<9.5	<4.8	<19.1	<4.8	<4.8	31.4	36.5	18.4	344	315	706	675	928
SA-SB-38 (5.5-6.0)	11/12/2019	<10.5	<5.3	<21	<5.3	<5.3	<12	<12	<12	0.69 j	<12	1.1 j	1.1 j	1.1 j
SA-SB-39 (0.5-1.0)	11/14/2019	<9.2	<4.6	<18.4	<4.6	<4.6	<11.5	<11.5	<11.5	1.1 j	1.1 j	2.7 j	1.8 j	2.3 j
SA-SB-39 (5.5-6.0)	11/14/2019	<8.3	<4.2	<16.7	<4.2	5.8 j,B	1.1 j	1.5 j	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1
SA-SB-40 (0.5-1.0)	11/14/2019	<12.6	<6.3	<25.1	<6.3	<6.3	15.2	25.2	8.8 j	165	114	376	354	442
SA-SB-40 (5.5-6.0)	11/14/2019	<8.5	<4.2	<17	<4.2	3.4 j,B	7.4 j	9.8 j	3.3 j	5.7 j	10.2 j	6.8 j	6.8 j	7.7 j
SA-SB-41 (0.5-1.0)	11/14/2019	<9.5	<4.7	<18.9	<4.7	<4.7	<11.8	<11.8	<11.8	<11.8	0.52 j	2.3 j	2.3 j	2.5 j
SA-SB-41 (5.5-6.0)	11/14/2019	<8.9	<4.4	<17.8	<4.4	8.2 j,B	4.4 j	3.3 j	6.2 j	1.5 j	6.2 j	6.8 j	5.2 j	8.7 j
SA-SB-42 (0.5-1.0)	11/14/2019	<10.5	<5.3	<21	<5.3	1.7 j,B	1.1 j	1.1 j	10.9 j	0.97 j	20.6	55.7	52.4	73.6
SA-SB-42 (5.5-6.0)	11/14/2019	<7.7	<3.9	<15.5	<3.9	6.1 j,B	3.8 j	1.2 j	1.7 j	<11.2	0.66 j	<11.2	<11.2	<11.2
SA-SB-43 (0.5-1.0)	11/13/2019	<9	<4.5	<17.9	<4.5	<4.5	<12	0.77 j	<12	0.94 j	<12	1.2 j	1.2 j	1.8 j
SA-SB-43 (5.5-6.0)	11/13/2019	<9.3	<4.7	<18.7	<4.7	<4.7	<11.3	<11.3	1.6 j	24.6	28.9	157	58.6	92.1
SA-SB-44 (0.5-1.0)	11/14/2019	<9.5	<4.7	<19	<4.7	<4.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7
SA-SB-44 (5.5-6.0)	11/14/2019	<8.1	<4.1	<16.3	<4.1	6,190	162	42.5	114	40.1	94.5	85.7	82.6	102
SA-SB-45 (0.5-1.0)	11/14/2019	<11.5	<5.7	<22.9	5.5 j	9.2 j	4.2 j	6.6 j	0.71 j	9.3 j	7.8 j	21.1	24.3	28.8
SA-SB-45 (5.5-6.0)	11/14/2019	<223	<112	295 j	<112	<112	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5
SA-SB-46 (0.5-1.0)	11/14/2019	<12.3	<6.2	<24.6	<6.2	74.9 S1	1,020 S1	1,250 S1	1,280 S1	1,450 S1	3,250 S1	6,470 S1	5,890 S1	7,700 S1
SA-SB-46 (5.5-6.0)	11/14/2019	<12.2	<6.1	<24.4	2.3 j,M1,R1	5.7 j,M1,R1	1,170 M1,R1	1,450 M1,R1	1,150 M1	4,380 M1,R1	21,100 M1,R1	27,900 M1,R1	21,500 M1,R1	27,200 M1,R1
SA-SB-47 (0.5-1.0)	11/14/2019	<17.7	<8.9	<35.4	<8.9	<8.9	13.2 j	16.6 j	3.8 j	12 j	19.4	41	44.2	55.9
SA-SB-47 (5.5-6.0)	11/14/2019	<9.1	<4.6	<18.3	<4.6	2.8 j	1.4 j	1.9 j	<12.3	<12.3	1.1 j	2.3 j	2.6 j	4.6 j
T10-SB3 (14.5)	03/14/2019	<14.3	<7.1	<28.5	<7.1	241 M1	68.4 M1,M0	118 M1,M0	57.1 M1,M0	<11.3	6.2 j,M0	<11.3	<11.3	<11.3
T11-SB1 (18.5)	03/14/2019	<11.2	<5.6	<22.4	<5.6	105	27.1	48.5	19.4	3.3 j	3.7 j	<10.9	<10.9	<10.9
T11-SB2 (16.5)	03/14/2019	<16.8	<8.4	<33.6	<8.4	61.2	10.8 j	15.6	22	1.4 j	2.8 j	<10.9	<10.9	<10.9
T11-SB3 (13.5)	03/14/2019	<13.1	<6.6	<26.3	<6.6	3.4 j	<11.4	<11.4	7.4 j	1.1 j	<11.4	<11.4	<11.4	<11.4
T12-SB1 (16.5)	03/20/2019	<10	<5	<19.9	<5	<5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5
T12-SB3 (16)	03/20/2019	<12.4	<6.2	<24.7	<6.2	<6.2	<12.4	<12.4	2.4 j	<12.4	<12.4	<12.4	<12.4	<12.4
T13-SB1 (13)	03/20/2019	<11.1	<5.6	<22.3	<5.6	4.3 j	3.5 j	6.2 j	3.7 j	4.9 j	5.3 j	10.5 j	9.8 j	10.8 j
T13-SB2 (15)	03/20/2019	<12.9	<6.5	<25.9	<6.5	1.6 j,S1	3.4 j	4.9 j	19 S1	2.7 j	3.3 j	5.2 j	4.5 j	4.6 j
T14-SB3 (12.5)	03/19/2019	<11.2	<5.6	3.5 j	<5.6	2.8 j	0.93 j	3 j	0.77 j	0.85 j	1.6 j	2.7 j	1.8 j	2.7 j
T15-SB1 (15.5)	03/19/2019	<13.5	<6.8	12 j	<6.8	<12	<12	<12	<12	<12	<12	<12	<12	<12
T15-SB2 (17)	03/19/2019	<7.7	<3.9	<15.5	<3.9	2.5 j,B	<11.1	<11.1	<11.1	0.57 j	<11.1	<11.1	<11.1	<11.1

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8270D (PAH)									8270D (Other SVOC)		
	Analytical Parameter	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	1,2,4-Trichlorobenzene	4-Bromophenylphenyl ether	Dibenzofuran
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	NE	210,000	2,100,000	2,100	30,000,000	30,000,000	21,000	NE	23,000,000	110,000	NE	1,000,000
	Residental Screening Level	NE	11,000	110,000	110	2,400,000	2,400,000	1,100	NE	1,800,000	24,000	NE	73,000
Sample ID	Sample Collection Date	Analytical Results									Analytical Results		
SA-SB-27 (5.5-6.0)	11/13/2019	83.4 M1,S1	73.7	119 M1	21.2 S1	178 M1	11.2 j	65.3 M1,S1	166 M1,R1	202 M1,S1	<392	<392	<392
SA-SB-28 (0.5-1.0)	11/13/2019	83.3	59.9	122	21.7	222	8.1 j	69.6	158	190	<4.3 R0	<386	75.6 j
SA-SB-28 (5.5-6.0)	11/13/2019	27.1	24	48.7	7.8 j	110	11.1 j	23.7	92.7	90.2	<4.5	<391	87 j
SA-SB-29 (0.5-1.0)	11/13/2019	85.5	52.9	110	21.9	163	6.1 j	68.1	143	150	<4.4	<382	<382
SA-SB-29 (5.5-6.0)	11/13/2019	56.3	45.6	64.5	15.3	90.6	3.4 j	49.5	21.9	101	<4.3	<396	<396
SA-SB-30 (0.5-1.0)	11/13/2019	34.1	23.3	35.3	8.7 j	51.1	2.1 j	28.7	19.2	54.3	<3.9	<355	<355
SA-SB-30 (5.5-6.0)	11/13/2019	2.7 j	2.2 j	3.7 j	<12.5	7.4 j	<12.5	2.4 j	1.9 j	6.7 j	<4.1	<405	<405
SA-SB-31 (0.5-1.0)	11/12/2019	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<11.6	<107	<388	<388
SA-SB-31 (5.5-6.0)	11/12/2019	<12.6	<12.6	0.62 j	<12.6	6.7 j	0.89 j	<12.6	6.6 j	4.8 j	<4.8	<413	<413
SA-SB-32 (0.5-1.0)	11/14/2019	<11.3	<11.3	0.65 j	<11.3	<11.3	<11.3	<11.3	<11.3	<11.3	<4.2	<376	<376
SA-SB-32 (5.5-6.0)	11/14/2019	24	17	35.9	6.6 j	62.6	3.3 j	19.6	31.9	70.3	<4.8	<385	<385
SA-SB-33 (0.5-1.0)	11/14/2019	28 S1	17.7 S1	41.4 S1	7.7 j,S1	84.8 S1	10 j	23.6 S1	101 S1	69.2 S1	<5	<397	<397
SA-SB-33 (5.5-6.0)	11/14/2019	111	61.5	165 M1	27.1	328 M1	21.2	84.5	357 M1	265 M1	<130	<389	115 j
SA-SB-34 (0.5-1.0)	11/14/2019	49.2	25.6	75.5	12	125	3.8 j	35.9	145	99.8	<5.5	<384	<384
SA-SB-34 (5.5-6.0)	11/14/2019	102	77.9	199	29.7	439	52.9	82.8	684	295	<4.5	<390	113 j
SA-SB-35 (0.5-1.0)	11/13/2019	90.8	49.1	156	23.1	283	12.1	62.1	407	189	<5.1 R0	<380	136 j
SA-SB-35 (5.5-6.0)	11/13/2019	1.4 j	0.73 j	1.7 j	<12.2	2.5 j	<12.2	<12.2	<12.2	2.3 j	<4	<394	<394
SA-SB-36 (0.5-1.0)	11/13/2019	2.7 j	1.7 j	2.7 j	<11.5	4.1 j	0.68 j	2.2 j	2.7 j	4.5 j	<4.3	<368	<368
SA-SB-36 (5.5-6.0)	11/13/2019	2.9 j	4.3 j	4.8 j	5.3 j	<11.3	<11.3	3.3 j	<11.3	1.2 j	<4.5	<361	<361
SA-SB-37 (0.5-1.0)	11/13/2019	7.4 j	4.9 j	9.7 j	2.1 j	16.2	<11	6.5 j	6.2 j	15.5	<4	<366	<366
SA-SB-37 (5.5-6.0)	11/13/2019	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<12.4	<4.9 R0	<408	<408
SA-SB-38 (0.5-1.0)	11/12/2019	462	335	698	151	1720	76.9	408	906	1,470	<4.8	<440	134 j
SA-SB-38 (5.5-6.0)	11/12/2019	1.6 j	1.4 j	1.4 j	2 j	<12	<12	1.7 j	<12	<12	<5.3	<410	<410
SA-SB-39 (0.5-1.0)	11/14/2019	<11.5	1.2 j	2.5 j	<11.5	4.6 j	<11.5	<11.5	1.6 j	3.8 j	<4.6	<384	<384
SA-SB-39 (5.5-6.0)	11/14/2019	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	1.5 j	<12.1	<4.2	<385	<385
SA-SB-40 (0.5-1.0)	11/14/2019	206	184	342	63.8	489	32.2	182	213	575	<6.3	<423	<423
SA-SB-40 (5.5-6.0)	11/14/2019	4.6 j	3 j	5.8 j	<11.3	20.7	8.1 j	4 j	32	18.5	<4.2	<379	<379
SA-SB-41 (0.5-1.0)	11/14/2019	3 j	3 j	3.4 j	3.8 j	<11.8	<11.8	3.3 j	<11.8	1.3 j	<4.7	<397	<397
SA-SB-41 (5.5-6.0)	11/14/2019	4.8 j	3.2 j	8 j	<11.6	20	5 j	3.8 j	21.4	18.2	<4.4	<379	<379
SA-SB-42 (0.5-1.0)	11/14/2019	47.2	29.2	54	10.4 j	135	6.7 j	37.1	87.5	103	<5.3	<398	<398
SA-SB-42 (5.5-6.0)	11/14/2019	<11.2	<11.2	<11.2	<11.2	<11.2	1.6 j	<11.2	3.2 j	<11.2	<3.9	<377	<377
SA-SB-43 (0.5-1.0)	11/13/2019	<12	0.63 j	1.2 j	<12	<12	<12	<12	<12	1.7 j	<4.5	<403	<403
SA-SB-43 (5.5-6.0)	11/13/2019	22.7	33.1	140	8.9 j	577	4.5 j	21	<11.3	393	<4.7	<380	<380
SA-SB-44 (0.5-1.0)	11/14/2019	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<12.7	<4.7	<414	<414
SA-SB-44 (5.5-6.0)	11/14/2019	51.6	34.7	77.8	12.6	189	92.4	44.5	316	205	<4.1	<400	125 j
SA-SB-45 (0.5-1.0)	11/14/2019	16.7	14	20	4.4 j	34.6	1.7 j	14.1	19.8	35.1	<5.7	<420	80.8 j
SA-SB-45 (5.5-6.0)	11/14/2019	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<112	<389	<389
SA-SB-46 (0.5-1.0)	11/14/2019	3,000 S1	2,940 S1	6,230 S1	1,080 S1	11,000 S1	1,860	2,720 S1	9,410 S1	96,70 S1	<6.2	<3,830	<3,830
SA-SB-46 (5.5-6.0)	11/14/2019	12,300 M1,R1	12,100 M1,R1	24,000 M1,R1	2,170 M1,R1	63,300 M1,R1	8,840 M1	11,000 M1,R1	77,700 M1,R1	50,300 M1,R1	<2,250	<2,250	<2,250
SA-SB-47 (0.5-1.0)	11/14/2019	34.2	20.2	38.8	8.3 j	76.9	8.5 j	27.8	76.3	77	<8.9	<590	<590
SA-SB-47 (5.5-6.0)	11/14/2019	3 j	1.5 j	2.7 j	<12.3	4.2 j	<12.3	2.5 j	4.2 j	3.3 j	<4.6	<412	<412
T10-SB3 (14.5)	03/14/2019	<11.3	<11.3	<11.3	<11.3	1.6 j,M0	19.5 M1,M0	<11.3	38.7 M0	2.2 j,M0	<7.1	<376	<376
T11-SB1 (18.5)	03/14/2019	<10.9	<10.9	<10.9	<10.9	3 j	9.9 j	<10.9	26.1	4.9 j	<5.6	<358	<358
T11-SB2 (16.5)	03/14/2019	<10.9	<10.9	<10.9	<10.9	<10.9	7 j	<10.9	12	1.5 j	<8.4	<356	<356
T11-SB3 (13.5)	03/14/2019	<11.4	<11.4	<11.4	<11.4	<11.4	3.3 j	<11.4	<11.4	<11.4	<6.6	<376	<376
T12-SB1 (16.5)	03/20/2019	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<11.5	<5	<382	<382
T12-SB3 (16)	03/20/2019	<12.4	<12.4	<12.4	<12.4	<12.4	1.5 j	<12.4	<12.4	<12.4	<6.2	<418	<418
T13-SB1 (13)	03/20/2019	3.9 j	4.1 j	9.1 j	1.4 j	18.2	3.7 j	3.9 j	9.9 j	21.3	<5.6	<366	<366
T13-SB2 (15)	03/20/2019	1.8 j	2.4 j	4.5 j	<12.5	10.5 j	4.1 j	1.8 j	10.8 j	8.8 j	<6.5	<410	<410
T14-SB3 (12.5)	03/19/2019	<13.6	0.84 j	2.3 j	<13.6	6.1 j	1.3 j	<13.6	6.1 j	4.6 j	<5.6	<442	<442
T15-SB1 (15.5)	03/19/2019	<12	<12	<12	<12	<12	<12	<12	<12	<12	<6.8	<397	<397
T15-SB2 (17)	03/19/2019	<11.1	<11.1	<11.1	<11.1	<11.1	<11.1	<11.1	<11.1	<11.1	<3.9	<360	<360

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		ASTM D2974-87	8260B (VOA and MTBE)							8260B (Other VOC)						
						Xylene										
	Analytical Parameter	Percent Moisture	Benzene	Ethylbenzene	Toluene	m&p-Xylene	o-Xylene	Xylene (Total)	MTBE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Butanone (MEK)	2-Hexanone	Acetone	Bromomethane	Chloroform
	Reporting Units	%	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	NE	5,100	25,000	47,000,000	2,400,000	2,800,000	2,500,000	210,000	1,800,000	1,500,000	190,000,000	1,300,000	670,000,000	30,000	1,400
	Residental Screening Level	NE	1,200	5,800	4,900,000	560,000	650,000	580,000	47,000	300,000	270,000	27,000,000	200,000	61,000,000	6,800	320
Sample ID	Sample Collection Date	Analytical Results	Analytical Results							Analytical Results						
T17-SB1 (15.5)	03/29/2019	16.5	<6.7	<6.7	<6.7	<13.5	<6.7	<13.5	<6.7	<6.7	<6.7	<135	<67.3	**33.8 j**	<13.5	<6.7
T17-SB2 (15.5)	03/29/2019	9.4	**26**	**8.4**	<5.4	<10.9	<5.4	<10.9	<5.4	<5.4	<5.4	<109	<54.3	**33.5 j,M1**	<10.9	<5.4
T1-SB1 (16.5)	03/21/2019	13.7	<5.5	<5.5	<5.5	<11	<5.5	<11	<5.5	<5.5	<5.5	<110	<54.8	<110	<11	<5.5
T1-SB1 (17)	03/21/2019	10.5	<4.6	<4.6	<4.6	<9.3	<4.6	<9.3	<4.6	<4.6	<4.6	<93	<46.5	<93	<9.3	<4.6
T1-SB2 (15.5)	03/21/2019	4.3	<8.1	<8.1	<8.1	<16.3	<8.1	<16.3	<8.1	<8.1	<8.1	<163	<81.3	<163	<16.3	<8.1
T1-SB2 (16.5)	03/21/2019	15.8	<5.3	<5.3	<5.3	<10.7	<5.3	<10.7	<5.3	<5.3	<5.3	<107	<53.3	<107	<10.7	<5.3
T2-SB3 (15)	03/21/2019	16.4	<5.4	<5.4	<5.4	<10.9	<5.4	<10.9	<5.4	<5.4	<5.4	<109	<54.4	<109	<10.9	<5.4
T4-SB1 (15.5)	03/18/2019	15.7	<5.3	<5.3	<5.3	<10.7	<5.3	<10.7	<5.3	<5.3	<5.3	<107	<53.4	**61.4 j**	<10.7	**2.4 j,B**
T4-SB2 (18)	03/19/2019	8.9	<5.8	<5.8	<5.8	<11.7	<5.8	<11.7	<5.8	<5.8	<5.8	<117	<58.3	**74 j**	<11.7	**2.4 j,B**
T4-SB3 (17)	03/18/2019	6.7	<5.5	<5.5	<5.5	<10.9	<5.5	<10.9	<5.5	<5.5	<5.5	<109	<54.6	**84.6 j**	<10.9	<5.5
T5-SB2 (17)	03/18/2019	8.8	<6.6	<6.6	<6.6	<13.2	<6.6	<13.2	<6.6	<6.6	<6.6	<132	<66.2	**470**	<13.2	**2.7 j,B**
T5-SB3 (18)	03/18/2019	10.7	<6.4	<6.4	<6.4	<12.9	<6.4	<12.9	<6.4	<6.4	<6.4	<129	<64.5	**13.8 j**	<12.9	**2.6 j,B**
T6-SB3 (17.5)	03/18/2019	13.2	**79.9 j**	**110 j**	<120	<241	<120	<241	<120	**56.2 j**	<120	**120 j**	<1,200	**1,790 j**	<241	**55.3 j,B**
T7-SB1 (17)	03/15/2019	23.4	**74.5 j**	**89.5 j**	<194	<388	<194	<388	<194	<194	<194	<3,880	<1,940	**1,740 j**	<388	<194
T7-SB1 (19)	03/15/2019	12.6	**7.5**	**8.1**	<4.2	**4.5 j**	**2.3 j**	<8.4	<4.2	**2.4 j**	<4.2	<84.1	<42	**20.3 j**	<8.4	<4.2
T7-SB2 (15.5)	03/15/2019	12.2	<4.4	<4.4	<4.4	<8.9	<4.4	<8.9	<4.4	<4.4	<4.4	<88.7	<44.4	**26.2 j**	<8.9	<4.4
T7-SB3 (16)	03/15/2019	17.5	**9.8**	**8.5**	<5.4	**6.9 j**	<5.4	<10.9	<5.4	**17.8**	**7**	<109	<54.4	**49.6 j**	<10.9	<5.4
T8-SB2 (10)	03/12/2019	30.8	<6	<6	<6	**5 j**	<6	<11.9	<6	<6	<6	<119	<59.7	**26.3 j**	<11.9	<6
T8-SB2 (17)	03/12/2019	23.2	<5.4	<5.4	<5.4	<10.7	<5.4	<10.7	<5.4	<5.4	<5.4	<107	<53.5	<107	<10.7	**2.1 j,B,M1**
T8-SB3 (17)	03/12/2019	9	<5.4	<5.4	<5.4	<10.9	<5.4	<10.9	<5.4	<5.4	<5.4	<109	<54.4	**14.2 j**	<10.9	**2.3 j,B**
T9-SB1 (18)	03/13/2019	11.5	**3.4 j,S1**	<5.9	**2.7 j,S1**	<11.7	<5.9	<11.7	<5.9	<5.9	<5.9	<117	<58.6	**19.8 j,L1**	<11.7	**2.4 j**
T9-SB2 (19)	03/13/2019	8.3	<236	<236	<236	<473	<236	<473	<236	<236	<236	<4,730	<2,360	<4,730	<473	**102 j**
T9-SB2 (22)	03/13/2019	3.8	<5.4	<5.4	<5.4	<10.8	<5.4	<10.8	<5.4	<5.4	<5.4	<108	<54.1	**36 j,L1**	<10.8	**2.3 j**
QC Sample Results																
Blind DUP-3_SA-SB-19 (5.5-6)	11/14/2019	16.3	<4.2	<4.2	<4.2	<8.4	<4.2	<8.4	<4.2	<4.2	<4.2	<84.3	<42.1	<84.3	<8.4	<4.2
BLIND DUP-1_SA-SB-27 (0.5-1)	11/13/2019	17	<4.7	<4.7	<4.7	<9.4	<4.7	<9.4	<4.7	<4.7	<4.7	<93.5	<46.8	<93.5	<9.4	<4.7
BLIND DUP-2_SA-SB-27 (5.5-6)	11/13/2019	13.5	<5.5	<5.5	<5.5	<10.9	<5.5	<10.9	<5.5	<5.5	<5.5	<109	<54.5	<109	<10.9	<5.5
Blind DUP-4_SA-SB-33 (0.5-1)	11/14/2019	17	<4.6	<4.6	<4.6	<9.2	<4.6	<9.2	<4.6	<4.6	<4.6	<92.2	<46.1	**63.3 j**	<9.2	<4.6
Blind DUP-5_SA-SB-33 (5.5-6)	11/14/2019	12.9	<6.2	<6.2	<6.2	<12.3	<6.2	<12.3	<6.2	<6.2	<6.2	<123	<61.6	**116 j**	<12.3	<6.2
BLIND DUPLICATE_T13-SB2 (15)	03/20/2019	13.7	<5.5	<5.5	<5.5	<11	<5.5	<11	<5.5	<5.5	<5.5	<110	<54.9	**53.4 j**	<11	<5.5
BLIND DUPLICATE_T9-SB1 (18)	03/13/2019	11.3	**23.7 S1**	**4.6 j**	**15.4 S1**	<12.8	<6.4	<12.8	<6.4	<6.4	<6.4	<128	<63.9	**22.6 j,L1**	<12.8	**3 j**

Prepared by: MAG Checked By: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Orange shading indicates that the compound was detected above the USEPA RSL industrial screening level (November, 2019)
- Blue shading indicates that the compound was detected above the USEPA RSL residential screening level (November, 2019)
% - Percent
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
BC - The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.
D6 - The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L1 - Analyte recovery in the laboratory control sample (LCS) was above quality control (QC) limits. Results may be biased high.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
R1 - Relative Percent Difference (RPD) value was outside control limits.
S1 - Data review findings indicate result may be biased, however, data is usable.
USEPA - United States Environmental Protection Agency
VOA - volatile organic aromatics
VOC - volatile organic compound

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8260B (Other VOC)				8270D (PAH)								
	Analytical Parameter	Chloromethane	Isopropylbenzene (Cumene)	Methylene chloride	p-Isopropyltoluene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	460,000	9,900,000	1,000,000	NE	17,000	73,000	3,000,000	45,000,000	NE	230,000,000	21,00	2,100	21,000
	Residental Screening Level	110,000	1,900,000	57,000	NE	3,800	18,000	24,000	3,600,000	NE	18,000,000	1,100	110	1,100
Sample ID	Sample Collection Date	Analytical Results				Analytical Results								
T17-SB1 (15.5)	03/29/2019	<13.5	<6.7	<26.9	<6.7	<6.7	**10.1 j**	<12	**15.4**	<12	**0.67 j**	<12	<12	<12
T17-SB2 (15.5)	03/29/2019	<10.9	<5.4	<21.7	<5.4	**90.6**	**78.7 M1,M0**	**3.5 j,M0**	**53.8 M0**	**1 j,M0**	**6.7 j,M0**	<11.2	<11.2	<11.2
T1-SB1 (16.5)	03/21/2019	<11	<5.5	<21.9	<5.5	<5.5	<11.6	<11.6	**6.4 j**	<11.6	<11.6	<11.6	<11.6	<11.6
T1-SB1 (17)	03/21/2019	<9.3	<4.6	<18.6	<4.6	<4.6	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2
T1-SB2 (15.5)	03/21/2019	<16.3	<8.1	<32.5	<8.1	<8.1	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3
T1-SB2 (16.5)	03/21/2019	<10.7	<5.3	<21.3	<5.3	**2.8 j**	<12	0.84 j	<12	<12	<12	<12	<12	<12
T2-SB3 (15)	03/21/2019	<10.9	<5.4	<21.8	<5.4	**1.4 j**	<12.1	1.9 j	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1
T4-SB1 (15.5)	03/18/2019	<10.7	<5.3	<21.4	<5.3	**1.2 j**	<11.8	<11.8	**25.8**	**1.1 j**	**0.63 j**	<11.8	<11.8	<11.8
T4-SB2 (18)	03/19/2019	<11.7	<5.8	**6 j**	<5.8	**5.2 j**	**2.3 j**	**3.6 j**	**2.8 j**	**0.75 j**	**0.71 j**	<11.1	<11.1	<11.1
T4-SB3 (17)	03/18/2019	<10.9	<5.5	<21.8	<5.5	**4.4 j**	**3.7 j**	**5.8 j**	**4.8 j**	**0.87 j**	**0.53 j**	<10.7	<10.7	<10.7
T5-SB2 (17)	03/18/2019	<13.2	<6.6	**10.4 j**	<6.6	**93.4**	**476**	**865**	**506**	<10.8	**180**	**76.2**	**55.7**	**41.2**
T5-SB3 (18)	03/18/2019	<12.9	<6.4	**12.1 j**	<6.4	**10,100**	**202**	**365**	**122**	**27.4**	**42.6**	**9 j**	**5.1 j**	**3.8 j**
T6-SB3 (17.5)	03/18/2019	<241	<120	<482	<120	**3,820**	**174**	**317**	**127**	<11.6	**13.8**	**1.2 j**	**0.79 j**	**1 j**
T7-SB1 (17)	03/15/2019	**124 j,L1**	<194	<777	<194	**4,730 BC**	**64.7**	**124**	**41.7**	<13	**1.6 j**	<13	<13	<13
T7-SB1 (19)	03/15/2019	<8.4	<4.2	<16.8	<4.2	**1,710 B,BC**	**10.4 j**	**18.7**	**8 j**	**0.7 j**	**0.65 j**	<11.4	<11.4	<11.4
T7-SB2 (15.5)	03/15/2019	<8.9	<4.4	<17.7	<4.4	**113 BC**	**43.9**	**80.5**	**43.8**	**7 j**	**10.7 j**	**4.9 j**	**3.7 j**	**3.9 j**
T7-SB3 (16)	03/15/2019	<10.9	**2.5 j**	<21.8	<5.4	**1,860 B,BC**	**54.1**	**91.8**	**38.4**	<12.1	<12.1	<12.1	<12.1	<12.1
T8-SB2 (10)	03/12/2019	<11.9	<6	<23.9	<6	**3.3 j**	**13 j**	**8 j**	**95.1 D6**	**205 D6**	**189 D6**	**826 D6**	**727 D6**	**1,050 D6**
T8-SB2 (17)	03/12/2019	<10.7	<5.4	<21.4	<5.4	<5.4	**<13.1**	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1
T8-SB3 (17)	03/12/2019	<10.9	<5.4	<21.8	<5.4	**35.3**	**1.9 j**	**3.4 j**	**1.7 j**	<11	<11	**1.5 j**	**1.3 j**	**1.7 j**
T9-SB1 (18)	03/13/2019	<11.7	<5.9	<23.4	<5.9	**137 S1**	**32.4 S1**	**58.6 S1**	**16.9**	**10 j,S1**	**1.8 j,S1**	<11.1	<11.1	<11.1
T9-SB2 (19)	03/13/2019	<473	<236	<945	<236	**5,260**	**25,900**	**39,200**	**4,820**	**19,700**	**10,900**	**4,900**	**3,530**	**2,870**
T9-SB2 (22)	03/13/2019	<10.8	<5.4	<21.7	<5.4	**6.4**	**10.5**	**21.6**	**5.4 j**	**13.2**	**1.6 j**	**1.2 j**	**0.68 j**	<10.5
QC Sample Results														
Blind DUP-3_SA-SB-19 (5.5-6)	11/14/2019	<8.4	<4.2	<16.9	<4.2	<4.2	**11.8 j,S1**	**17.6 S1**	**3 j,S1**	**25.3**	**30.2 S1**	**54.5 S1**	**52 S1**	**72.7 S1**
BLIND DUP-1_SA-SB-27 (0.5-1)	11/13/2019	<9.4	<4.7	<18.7	<4.7	<4.7	**34.9 S1**	**51.4 S1**	**9.6 j**	**7.5 j**	**41 S1**	**155 S1**	**288 S1**	**386 S1**
BLIND DUP-2_SA-SB-27 (5.5-6)	11/13/2019	<10.9	<5.5	<21.8	<5.5	<5.5	**36.5 S1**	**49.4 S1**	<11.5	**5.8 j,S1**	**27.4 S1**	**77.8**	**96.7**	**170**
Blind DUP-4_SA-SB-33 (0.5-1)	11/14/2019	<9.2	<4.6	<18.4	<4.6	<4.6	**67.7 S1**	**109 S1**	**17.6 S1**	<11.8	**111 S1**	**135 S1**	**112 S1**	**163 S1**
Blind DUP-5_SA-SB-33 (5.5-6)	11/14/2019	<12.3	<6.2	<24.6	<6.2	**20.2**	**415**	**477**	**577**	**786**	**1,300**	**2,760**	**2,380**	**3,420**
BLIND DUPLICATE_T13-SB2 (15)	03/20/2019	<11	<5.5	<22	<5.5	**2.5 j,S1**	<11.4	**0.85 j**	**12.8 S1**	**1.1 j**	<11.4	<11.4	<11.4	<11.4
BLIND DUPLICATE_T9-SB1 (18)	03/13/2019	<12.8	<6.4	<25.6	<6.4	**306 S1**	**71.3 S1**	**137 S1**	**19.7**	**37.1 S1**	**13.6 S1**	**4.8 j**	**3.3 j**	**2.7 j**

Prepared by: MAG Checked By: JPC

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.
- Orange shading indicates that the compound was detected above the USEPA RSL industrial screening level (November, 2019)
- Blue shading indicates that the compound was detected above the USEPA RSL residential screening level (November, 2019)

% - Percent
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
BC - The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.
D6 - The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L1 - Analyte recovery in the laboratory control sample (LCS) was above quality control (QC) limits. Results may be biased high.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
R1 - Relative Percent Difference (RPD) value was outside control limits.
S1 - Data review findings indicate result may be biased, however, data is usable.
USEPA - United States Environmental Protection Agency
VOA - volatile organic aromatics
VOC - volatile organic compound

TABLE 6-1
ANALYTICAL RESULTS SUMMARY - SOIL
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8270D (PAH)									8270D (Other SVOC)		
	Analytical Parameter	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	1,2,4-Trichlorobenzene	4-Bromophenylphenyl ether	Dibenzofuran
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	Industrial Screening Level	NE	210,000	2,100,000	2,100	30,000,000	30,000,000	21,000	NE	23,000,000	110,000	NE	1,000,000
	Residental Screening Level	NE	11,000	110,000	110	2,400,000	2,400,000	1,100	NE	1,800,000	24,000	NE	73,000
Sample ID	Sample Collection Date	Analytical Results									Analytical Results		
T17-SB1 (15.5)	03/29/2019	<12	<12	<12	<12	<12	3.7 j	<12	3.4 j	<12	<6.7	<391	<391
T17-SB2 (15.5)	03/29/2019	<11.2	<11.2	<11.2	<11.2	<11.2	19.6 M0	<11.2	42 M0	1.3 j,M0	<5.4	<367	<367
T1-SB1 (16.5)	03/21/2019	<11.6	<11.6	<11.6	<11.6	<11.6	1 j	<11.6	<11.6	<11.6	<5.5	<376	<376
T1-SB1 (17)	03/21/2019	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<11.2	<4.6	<369	<369
T1-SB2 (15.5)	03/21/2019	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<10.3	<8.1	<347	<347
T1-SB2 (16.5)	03/21/2019	<12	<12	<12	<12	<12	<12	<12	<12	<12	<5.3	<397	<397
T2-SB3 (15)	03/21/2019	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	<12.1	<5.4	<395	<395
T4-SB1 (15.5)	03/18/2019	<11.8	<11.8	<11.8	<11.8	<11.8	0.91 j	<11.8	<11.8	<11.8	<5.3	<391	<391
T4-SB2 (18)	03/19/2019	<11.1	<11.1	<11.1	<11.1	<11.1	2.2 j	<11.1	6.6 j	1.6 j	<5.8	<365	<365
T4-SB3 (17)	03/18/2019	<10.7	<10.7	<10.7	<10.7	<10.7	2.2 j	<10.7	4.5 j	<10.7	<5.5	<357	<357
T5-SB2 (17)	03/18/2019	14.9	16.4	57.1	4.9 j	195	286	12.6	805	337	<6.6	<364	<364
T5-SB3 (18)	03/18/2019	1.2 j	1.8 j	6.5 j	<11.1	35.5	85.8	1.1 j	203	61.8	<6.4	<372	<372
T6-SB3 (17.5)	03/18/2019	<11.6	0.52 j	0.82 j	<11.6	6.6 j	42.6	<11.6	73.9	9.7 j	<120	<374	<374
T7-SB1 (17)	03/15/2019	<13	<13	<13	<13	<13	10.8 j	<13	12.5 j	<13	<194	<425	<425
T7-SB1 (19)	03/15/2019	<11.4	<11.4	<11.4	<11.4	<11.4	2.5 j	<11.4	4.3 j	<11.4	<4.2	<372	<372
T7-SB2 (15.5)	03/15/2019	1.5 j	1.6 j	4 j	<11.2	12.2	19.4	1.3 j	48.5	19.7	<4.4	<370	<370
T7-SB3 (16)	03/15/2019	<12.1	<12.1	<12.1	<12.1	<12.1	5.1 j	<12.1	2.3 j	<12.1	<5.4	<393	<393
T8-SB2 (10)	03/12/2019	399 D6	429 D6	799 D6	116 D6	1,070 D6	49.7 D6	376 D6	249 D6	1,310 D6	<6	<477	<477
T8-SB2 (17)	03/12/2019	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1	<13.1	<5.4	<431	<431
T8-SB3 (17)	03/12/2019	<11	<11	<11	<11	2 j	<11	<11	<11	2.3 j	<5.4	<357	<357
T9-SB1 (18)	03/13/2019	<11.1	<11.1	<11.1	<11.1	<11.1	7.6 j,S1	<11.1	10.2 j,S1	2.8 j,S1	<5.9	<379	<379
T9-SB2 (19)	03/13/2019	1,200	1,450	3,630	383 j	11,300	15,300	1,020	39,300	17,300	<236	<1,810	4,940
T9-SB2 (22)	03/13/2019	<10.5	<10.5	0.72 j	<10.5	2.8 j	4.1 j	<10.5	6.1 j	6.9 j	<5.4	<349	<349
QC Sample Results													
Blind DUP-3_SA-SB-19 (5.5-6)	11/14/2019	45.5 S1	31 S1	59.3 S1	10.7 j,S1	113 S1	8.5 j	35.7 S1	113 S1	93.6	<4.2	<388	<388
BLIND DUP-1_SA-SB-27 (0.5-1)	11/13/2019	316 S1	123 S1	159 S1	76.8 S1	160 S1	10.3 j	257 S1	153 S1	151 S1	<4.7	<404	<404
BLIND DUP-2_SA-SB-27 (5.5-6)	11/13/2019	161 S1	66	104	34.3 S1	129	4.4 j	119 S1	150	112 S1	<5.5	<379	83.9 j
Blind DUP-4_SA-SB-33 (0.5-1)	11/14/2019	106 S1	67 S1	146 S1	25.6 S1	295 S1	37.1	80.4 S1	399 S1	260 S1	<4.6	<396	123 j
Blind DUP-5_SA-SB-33 (5.5-6)	11/14/2019	1270	1,090	2670	362	5,040	799	1,140	3,530	4,720	<6.2	<3,730	<3,730
BLIND DUPLICATE_T13-SB2 (15)	03/20/2019	<11.4	<11.4	<11.4	<11.4	<11.4	<11.4	<11.4	<11.4	<11.4	<5.5	<384	<384
BLIND DUPLICATE_T9-SB1 (18)	03/13/2019	<11.4	1 j	3.3 j	<11.4	12.8 S1	26.4 S1	<11.4	58.7 S1	21.4 S1	<6.4	<375	<375

Prepared by: MAG Checked By: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Orange shading indicates that the compound was detected above the USEPA RSL industrial screening level (November, 2019)
- Blue shading indicates that the compound was detected above the USEPA RSL residential screening level (November, 2019)

% - Percent
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
BC - The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.
D6 - The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L1 - Analyte recovery in the laboratory control sample (LCS) was above quality control (QC) limits. Results may be biased high.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
R1 - Relative Percent Difference (RPD) value was outside control limits.
S1 - Data review findings indicate result may be biased, however, data is usable.
USEPA - United States Environmental Protection Agency
VOA - volatile organic aromatics
VOC - volatile organic compound

TABLE 6-2
NAPL OBSERVATIONS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Install Date	Preliminary Revised Hydro-Stratigraphic Well Classifications[1]	Visually Observed Product	NAPL Depth (ft-BLS)	Total Boring Depth (ft-BLS)	Description
MONITORING WELLS						
MW-01	Mar-96	Shallow	None		15	
MW-02	Mar-96	Shallow	None		15	
MW-02BR	Nov-19	Bedrock	Odor	45-63	80	Faint odor
MW-02TZ	Nov-19	Transition Zone	Odor		32	
MW-03	Mar-96	Shallow	None		14	
MW-03BR	Apr-19	Bedrock	Odor/Visual	9-16	65	NAPL coated / saturated seams
MW-03BRL	Jan-20	Bedrock	Odor/Visual	9-13, 17-20, 38-39, 60-70, 98-101	105	NAPL staining, strong odor, sheen observed, NAPL returned in fluids
MW-05	Mar-96	Shallow	None		14	
MW-07R	Jun-17	Shallow	Odor/Visual	10-16	16	NAPL staining
MW-09R	Jun-17	Shallow	Visual	11-12	26	Some NAPL staining
MW-13R	Jun-17	Shallow	None		20	
MW-15	Mar-99	Transition Zone	None		58	
MW-16	Mar-99	Shallow	Odor	10.0	16	Strong odor
MW-18	Mar-99	Shallow	None		25	
MW-20	Apr-99	Transition Zone	Odor/Visual	14.5-19	26	NAPL observed
MW-21	Mar-99	Shallow	Odor/Visual	11-17	18	NAPL observed
MW-21BR	Jan-20	Bedrock	Odor/Visual	6-10	125	NAPL coated seams
MW-21BRL	Jan-20	Bedrock	Odor/Visual	6-9	65	NAPL coated seams
MW-22	Apr-99	Shallow	None		37	
MW-25R	Jul-11	Shallow	None		17	
MW-26	Jun-17	Bedrock	None		57	
MW-27	Jun-17	Shallow	None		35	
MW-28	Jun-17	Bedrock	Visual	14-15	47	NAPL observed
MW-29BR	Jan-20	Bedrock	Odor		90	
MW-29S	Feb-19	Shallow	Odor		15	
MW-29TZ	Feb-19	Transition Zone	Odor		34	
MW-30S	Dec-18	Shallow	None		20	
MW-30TZ	Dec-19	Transition Zone	None		40	
MW-31S	Oct-18	Shallow	None		20	
MW-31TZ	Oct-18	Transition Zone	None		39	
MW-32S	Dec-19	Shallow	None		35	
MW-32TZ	Dec-19	Transition Zone	None		66	
MW-33S	Dec-19	Shallow	None		20	
MW-33TZ	Dec-19	Transition Zone	None		40	
MW-34BR	Dec-19	Bedrock	None		120	
MW-34S	Nov-19	Shallow	None		17	
MW-34TZ	Nov-19	Transition Zone	None		54	
MW-35S	Jan-20	Shallow	None		17	
MW-35TZ	Jan-20	Transition Zone	None		35	
MW-36BR	Feb-20	Bedrock	Odor/Visual	14-21	105	Tar blebs, sheen, and NAPL coated grains
MW-36S	Feb-20	Shallow	Odor/Visual	15-20	20	Tar blebs, sheen, and NAPL coated grains
MW-36TZ	Feb-20	Transition Zone	Odor/Visual	15-29	45	Tar blebs, sheen, and NAPL coated grains
MW-37BR	Jan-20	Bedrock	None		124	
MW-37S	Jan-20	Shallow	None		20	
MW-37TZ	Jan-20	Transition Zone	None		70	
MW-39BR	Dec-19	Bedrock	None		85	
MW-39BRL	Jan-20	Bedrock	None		80	
MW-39S	Nov-19	Shallow	None		24	
MW-40BR	Feb-20	Bedrock	None		80	
MW-41BR	Oct-19	Bedrock	None		99	
MW-41S	Oct-19	Shallow	None		20	
MW-41TZ	Nov-19	Transition Zone	None		55	
MW-42BR	Jan-20	Bedrock	None		115	
MW-42S	Jan-20	Shallow	None		20	
MW-42TZ	Jan-20	Transition Zone	None		55	
MW-48S	Feb-20	Shallow	None		31	
MW-48TZ	Feb-20	Transition Zone	None		55	
SOIL BORINGS						
RI-SB-01	Mar-19	Soil Boring	Odor/Visual	17-24	24	NAPL coated grains
RI-SB-02	Mar-19	Soil Boring	Odor/Visual	13.4-19	19	NAPL staining, NAPL coated
RI-SB-03	Mar-19	Soil Boring	None		17	
RI-SB-04	Dec-19	Soil Boring	Odor/Visual	15-17, 29-34	58	NAPL free product, strong odor

TABLE 6-2
NAPL OBSERVATIONS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Install Date	Preliminary Revised Hydro-Stratigraphic Well Classifications[1]	Visually Observed Product	NAPL Depth (ft-BLS)	Total Boring Depth (ft-BLS)	Description
RI-SB-05	Dec-19	Soil Boring	None		37	
RI-SB-06	Dec-19	Soil Boring	Odor/Visual	14.5-19	38	NAPL staining, OLM nodules
RI-SB-07	Dec-19	Soil Boring	None		49	
RI-SB-08	Dec-19	Soil Boring	Odor/Visual	15-19.5, 22.5-24	24	NAPL staining, some odor
RI-SB-09	Dec-19	Soil Boring	Odor/Visual	13.5-17.5, 20.5-22.5	23	NAPL staining
RI-SB-10	Dec-19	Soil Boring	Odor	8-15	28	Strong odor
RI-SB-11	Feb-20	Soil Boring	None		58	
RI-SB-12	Feb-20	Soil Boring	None		47	
SA-SB-01	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-02	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-03	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-04	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-05	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-06	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-07	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-08	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-09	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-10	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-11	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-12	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-13	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-14	Nov-19	Near Surface Soil Borings	Odor/Visual	0.5-6	6	NAPL material throughout
SA-SB-15	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-16	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-17	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-18	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-19	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-20	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-21	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-22	Nov-19	Near Surface Soil Borings	Odor/Visual	4-6	6	NAPL coated seams
SA-SB-23	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-24	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-25	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-26	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-27	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-28	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-29	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-30	Nov-19	Near Surface Soil Borings	Odor/Visual	5-6	6	NAPL coated seams
SA-SB-31	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-32	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-33	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-34	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-35	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-36	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-37	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-38	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-39	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-40	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-41	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-42	Nov-19	Near Surface Soil Borings	Odor/Visual	3.5-4.5	6	NAPL observed
SA-SB-43	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-44	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-45	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-46	Nov-19	Near Surface Soil Borings	None		6	
SA-SB-47	Nov-19	Near Surface Soil Borings	None		6	
TW-01	Jun-17	Temporary	None		15	
TW-02	Jun-17	Temporary	Odor	5-5.3	15	
TW-03	Jun-17	Temporary	Odor	5-10	15	
TW-04	Jun-17	Temporary	None		15	
TW-05	Jun-17	Temporary	Odor	5-11.5	15	
TW-06	Jun-17	Temporary	Odor/Visual	6.7-12	19	Slight odor, NAPL observed
TW-07	Jun-17	Temporary	Odor/Visual	5.3-11.5	20	NAPL observed
TW-08	Jun-17	Temporary	None		20	

TABLE 6-2
NAPL OBSERVATIONS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Install Date	Preliminary Revised Hydro-Stratigraphic Well Classifications[1]	Visually Observed Product	NAPL Depth (ft-BLS)	Total Boring Depth (ft-BLS)	Description
TW-09	Jun-17	Temporary	None		15	
TW-10	Jun-17	Temporary	None		12	
TW-11	Jun-17	Temporary	None		20	
TW-12	Jun-17	Temporary	None		20	
TW-13	Jun-17	Temporary	None		20	
T1-SB1	Mar-19	Soil Boring	Odor/Visual	5.7-6.2	19	trace NAPL, faint odor
T1-SB2	Mar-19	Soil Boring	Odor/Visual	5.5	39	trace NAPL, faint odor
T1-SB3	Mar-19	Soil Boring	Odor/Visual	11-12	19	NAPL coated seams, sheen
T2-SB1	Mar-19	Soil Boring	Odor/Visual	3.5-4.5	19	Light sheen
T2-SB2	Mar-19	Soil Boring	Odor/Visual	5-6, 9-9.5	19	Light sheen
T2-SB3	Mar-19	Soil Boring	None		19	
T3-SB1	Mar-19	Soil Boring	None		19	
T3-SB2	Mar-19	Soil Boring	None		19	
T3-SB3	Mar-19	Soil Boring	None		19	
T4-SB1	Mar-19	Soil Boring	None		19	
T4-SB2	Mar-19	Soil Boring	Odor/Visual	17-17.5	19	NAPL coated grains, staining
T4-SB3	Mar-19	Soil Boring	Odor/Visual	11-16	19	Faint odor, NAPL coated grains, staining
T5-SB1	Mar-19	Soil Boring	Odor/Visual	11-17	19	Tar blebs, NAPL staining
T5-SB2	Mar-19	Soil Boring	Odor/Visual	9.5-16	19	Tar blebs, NAPL staining / saturated
T5-SB3	Mar-19	Soil Boring	Odor/Visual	10-16	19	Tar blebs, NAPL staining
T6-SB1	Mar-19	Soil Boring	Odor/Visual	14.5-17.7	24	NAPL coated
T6-SB2	Mar-19	Soil Boring	Odor	17.5-19	19	Faint odor
T6-SB3	Mar-19	Soil Boring	Odor/Visual	12-13	19	Trace NAPL staining
T7-SB1	Mar-19	Soil Boring	Odor/Visual	9-15.5	19	NAPL coated seams, sheen
T7-SB2	Mar-19	Soil Boring	None		19	
T7-SB3	Mar-19	Soil Boring	None		19	
T8-SB1	Mar-19	Soil Boring	Odor/Visual	8-9	19	Tar material
T8-SB2	Mar-19	Soil Boring	None		34	
T8-SB3	Mar-19	Soil Boring	Odor/Visual	9.5-11	19	Sheen observed
T9-SB1	Mar-19	Soil Boring	Odor/Visual	9-14.5	19	NAPL coated grains
T9-SB2	Mar-19	Soil Boring	Odor/Visual	6.2-6.3, 10.5-11.5, 14.8-15.5	24	Sporadic layers of NAPL coating
T9-SB3	Mar-19	Soil Boring	Odor/Visual	9-15.7	19	NAPL belbs, NAPL staining
T10-SB1	Mar-19	Soil Boring	Odor/Visual	13-14	19	NAPL coated grains
T10-SB2	Mar-19	Soil Boring	Odor/Visual	8-10	24	Trace NAPL coated seams
T10-SB3	Mar-19	Soil Boring	None		19	
T11-SB1	Mar-19	Soil Boring	None		19	
T11-SB2	Mar-19	Soil Boring	Odor/Visual	9.5-11	39	Sporadic NAPL seams
T11-SB3	Mar-19	Soil Boring	None		19	
T12-SB1	Mar-19	Soil Boring	None		19	
T12-SB2	Mar-19	Soil Boring	Odor/Visual	11-12.5	19	NAPL saturated
T12-SB3	Mar-19	Soil Boring	Odor	9-9.5	19	Faint odor
T13-SB1	Mar-19	Soil Boring	None		19	
T13-SB2	Mar-19	Soil Boring	Odor/Visual	7-12	19	NAPL coated grains, odor
T13-SB3	Mar-19	Soil Boring	None		19	
T14-SB1	Mar-19	Soil Boring	Odor	7-Jun	19	Faint odor
T14-SB2	Mar-19	Soil Boring	None		19	
T14-SB3	Mar-19	Soil Boring	None		19	
T15-SB1	Mar-19	Soil Boring	Odor/Visual	9-13	19	NAPL observed, faint odor
T15-SB2	Mar-19	Soil Boring	None		29	
T15-SB3	Mar-19	Soil Boring	Odor	9-10.5	19	Faint odor
T17-SB1	Mar-19	Soil Boring	Odor	7.5-9	19	Faint odor
T17-SB2	Mar-19	Soil Boring	None		19	
T17-SB3	Mar-19	Soil Boring	None		19	

Prepared by: MAG Checked by: JPC

Notes:
BLS - Below land surface
ft - Feet
NAPL - Non-Aqueous Phase Liquids

TABLE 6-3
MATERIALS ENCOUNTERED IN TEST PITS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Test Pit ID	Date	Depth Interval (ft bls)	Description	Highest PID (ppm)	Notes
SA-TP-1	12/11/2019	0 - 1	Topsoil	0	No odors No NAPL observed
		1- 2	Red clayey fill		
		2 - 5.5	Fill with interlayered brick/concrete debris		
SA-TP-2	12/11/2019	0 - 0.5	Topsoil	0	No odors No NAPL observed
		0.5 - 6	Micaceous red/brown sandy silt (fill)		
		6 - 6.5	Brick debris		
SA-TP-3	12/11/2019	0 - 1	Topsoil	0	No odors No NAPL observed ~ 18-inch corrugated plastic pipe at 6 ft bls Pipe oriented N-S
		1 - 6	Dark brown sandy silt (fill) with minor rock/concrete debris		
SA-TP-4	12/11/2019	0 - 1	Topsoil	0	No NAPL observed
		1 - 3	Red/brown clayey fill with concrete and brick debris		
		3 - 6	Concrete slabs with rebar, some metal pipe and bricks, black wood debris with odor		
SA-TP-5	12/11/2019	0 - 1	Topsoil with large concrete slab at 1 ft bls	0	No odors No NAPL observed
		1 - 5	Red/brown silt (fill) with slab, block, brick, wood, paper, metal debris		
		5 - 5.5	Large slab of concrete at bottom of test pit		
SA-TP-6	12/12/2019	0 - 0.5	Topsoil	0	No odor No NAPL observed Water table approximately 3.5 ft bls
		0.5 - 4	Brown micaceous silty sand (fill)		
SA-TP-7	12/12/2019	0 - 0.5	Topsoil	0	No odor No NAPL observed Water table approximately 4 ft bls
		0.5 - 4	Red brown micaceous silt		
SA-TP-8	12/12/2019	0 - 6	Black soils (thermally treated)	0	No odor No NAPL observed
		>6	Brown silty fine sand (native)		
SA-TP-9	12/12/2019	0 - 1	Topsoil	0	No odor No NAPL observed
		1 - 6	Brown micaceous silt with very fine sand (fill)		
SA-TP-10	12/12/2019	0 - 6	Black soils with cobbles (thernally treated)	0	No odor No NAPL observed
SA-TP-11	12/12/2019	0 - 4.5	Red brown silt	59.6	No NAPL observed Water table approximately 5 ft bls
		4.5 - 5.5	Gray clayey sand with strong odor		
SA-TP-12	12/12/2019	0 - 5	Red brown micaceous silt	Not Measured	No NAPL observed Water table approximately 6 ft bls
		5 - 6	Greenish gray clay sand with strong odor		
SA-TP-13	12/12/2019	0 - 1	Topsoil	0	No odor No NAPL observed
		1 - 5	Red clay/silt		
		5	Concrete slabs and debris		
SA-TP-14	12/12/2019	0 - 3	Hard red clay/silt with gravel	0	No odor No NAPL observed
SA-TP-15	12/12/2019	0 - 2	Black soils (thermally treated)	0	No odor No NAPL observed
		2 - 6	Hard red clay		
SA-TP-16	12/12/2019	0 - 1	Black soils (thermally treated)	0	No odor No NAPL observed
		1 - 5.5	Red/brown silt		

Prepared by: JPC Checked by: KDF

Notes:
All depths are approximate.
bls - below land surface
ppm - parts per million

TABLE 6-4
MONITORING WELL CONSTRUCTION DETAILS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Installed By/For		Install Date	Well Status	Northing	Easting	Ground Elevation	TOC Elevation	Total Depth of Boring		Screen Length	Screen Interval			
												Top	Bottom	Top	Bottom
	Consultant	Client/Owner							ft-bls	Elevation	ft	ft-bls		Elevation	
CSXT PARCEL 1 - FORMER MGP SITE															
MW-07	AES	CSXT	Mar-96	Abandoned	---	---	933.44	935.74	15.0	918.4	10	5	15	928.4	918.4
MW-07R	Anchor QEA	Duke Energy	Jun-17	Active	1104849.061	1574503.135	932.93	936.01	15.0	917.9	10	5	15	927.9	917.9
MW-08	Duke Engineering	Duke Power	Mar-99	Abandoned	---	---	933.54	935.99	15.5	918.0	13	1.7	14.7	931.84	918.84
MW-09	Duke Engineering	Duke Power	Mar-99	Abandoned	---	---	933.54	936.03	30.4	903.1	5	25.2	30.2	908.34	903.34
MW-09R	Anchor QEA	Duke Energy	Jun-17	Active	1104848.766	1574514.012	933.62	936.47	29.9	903.7	5	21	26	912.6	907.6
MW-10	Duke Engineering	Duke Power	Feb-99	Abandoned	---	---	941.47	943.39	19.5	922.0	15	3	18	938.47	923.47
MW-11	Duke Engineering	Duke Power	Feb-99	Abandoned	---	---	939.49	941.81	25.7	913.8	10	14	24	925.49	915.49
MW-12	Duke Engineering	Duke Power	Feb-99	Abandoned	---	---	939.19	941.89	12.0	927.2	10	1.5	11.5	937.69	927.69
MW-13	Duke Engineering	Duke Power	Mar-99	Abandoned	---	---	938.08	940.48	23.1	915.0	10	11.5	21.5	926.58	916.58
MW-13R	Anchor QEA	Duke Energy	Jun-17	Active	1105219.021	1574610.864	937.93	940.94	23.5	914.5	10	10	20	927.9	917.9
MW-14	Duke Engineering	Duke Power	Mar-99	Abandoned	---	---	937.64	940.18	13.0	924.6	10	2	12	935.64	925.64
MW-15	Duke Engineering	Duke Power	Mar-99	Active	1105042.194	1574275.573	936.39	939.09	58.4	878.0	5	50	55	886.4	881.4
MW-16	Duke Engineering	Duke Power	Mar-99	Active	1105037.868	1574270.95	936.73	938.61	16.0	920.7	10	5	15	931.7	921.7
MW-17	Duke Engineering	Duke Power	Mar-99	Abandoned	---	---	933.29	935.22	16.0	917.29	13.9	1.6	15.5	931.69	917.79
MW-26	Anchor QEA	Duke Energy	Jun-17	Active	1105207.707	1574618.806	937.90	940.91	58.4	879.5	10	45	55	892.9	882.9
MW-27	Anchor QEA	Duke Energy	Jun-17	Active	1105213.38	1574614.926	937.83	940.93	38.6	899.2	10	25	35	912.8	902.8
MW-28	Anchor QEA	Duke Energy	Jun-17	Active	1104848.427	1574522.331	933.88	936.69	44.6	889.3	10	35	45	898.9	888.9
MW-36S	SynTerra	Duke Energy	Feb-20	Active	1104935.479	1574597.267	937.18	940.49	23.8	913.4	15	5	20	932.2	917.2
MW-36TZ	SynTerra	Duke Energy	Feb-20	Active	1104929.74	1574591.683	936.89	940.07	49.0	887.9	5	40	45	896.9	891.9
MW-36BR	SynTerra	Duke Energy	Feb-20	Active	1104923.156	1574585.34	936.72	940.04	71.5	865.2	5	63	68	873.7	868.7
MW-37S	SynTerra	Duke Energy	Jan-20	Active	1104909.383	1574769.02	940.16	943.05	20.0	920.2	15	5	20	935.2	920.2
MW-37TZ	SynTerra	Duke Energy	Jan-20	Active	1104910.709	1574776.157	940.15	943.27	70.0	870.2	5	65	70	875.2	870.2
MW-37BR	SynTerra	Duke Energy	Jan-20	Active	1104903.652	1574777.329	940.09	943.12	118.7	821.4	5	111	116	829.1	824.1
MW-42S	SynTerra	Duke Energy	Jan-20	Active	1104854.691	1574667.584	937.47	940.42	23.4	914.1	15	5	20	932.5	917.5
MW-42TZ	SynTerra	Duke Energy	Jan-20	Active	1104850.991	1574658.683	937.04	940.18	57.7	879.4	5	50	55	887.0	882.0
MW-42BR	SynTerra	Duke Energy	Jan-20	Active	1104848.136	1574650.469	936.84	939.52	79.8	857.0	5	72	77	864.8	859.8
CSXT PARCEL 2 - NORTH OF EAST BRAMLETT ROAD															
MW-29S	SynTerra	Duke Energy	Feb-19	Active	1104564.845	1573975.681	930.25	932.86	15.0	915.3	10	5	15	925.3	915.3
MW-29TZ	SynTerra	Duke Energy	Feb-19	Active	1104558.837	1573972.226	930.18	932.92	31.0	899.2	5	26	31	904.2	899.2
MW-29BR	SynTerra	Duke Energy	Jan-20	Active	1104562.165	1574007.247	930.36	933.32	88.8	841.6	5	81	86	849.4	844.4
MW-34S	SynTerra	Duke Energy	Dec-19	Active	1104723.096	1573982.19	934.82	937.53	25.0	909.8	15	10	25	924.8	909.8
MW-34TZ	SynTerra	Duke Energy	Dec-19	Active	1104729.972	1573981.01	935.14	937.91	54.0	881.1	10	40	50	895.1	885.1

TABLE 6-4
MONITORING WELL CONSTRUCTION DETAILS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Installed By/For		Install Date	Well Status	Northing	Easting	Ground Elevation	TOC Elevation	Total Depth of Boring		Screen Length	Screen Interval			
												Top	Bottom	Top	Bottom
	Consultant	Client/Owner							ft-bls	Elevation	ft	ft-bls		Elevation	
CSXT PARCEL 2 - NORTH OF EAST BRAMLETT ROAD (CONTINUED)															
MW-34BR	SynTerra	Duke Energy	Dec-19	Active	1104727.199	1573988.835	935.11	937.92	110.8	824.4	5	103	108	832.1	827.1
MW-35S	SynTerra	Duke Energy	Jan-20	Active	1104737.809	1574399.488	930.06	933.26	17.0	913.1	10	5	15	925.1	915.1
MW-35TZ	SynTerra	Duke Energy	Jan-20	Active	1104740.693	1574405.309	930.12	933.51	35.0	895.1	5	30	35	900.1	895.1
CSXT PARCEL 3 - VAUGHN LANDFILL/WETLANDS															
MW-01	AES	CSXT	Mar-96	Active	1104523.176	1574147.694	931.47	934.31	15.0	916.5	10	5	15	926.5	916.5
MW-02	AES	CSXT	Mar-96	Active	1104411.968	1573894.503	932.17	934.82	15.0	917.2	10	5	15	927.2	917.2
MW-02TZ	SynTerra	Duke Energy	Nov-19	Active	1104390.074	1573935.916	931.61	934.90	32.0	899.6	5	27	32	904.6	899.6
MW-02BR	SynTerra	Duke Energy	Nov-19	Active	1104392.204	1573945.340	931.37	934.42	80.0	851.4	5	55	60	876.4	871.4
MW-03	AES	CSXT	Mar-96	Active	1104205.179	1574124.530	932.90	935.53	14.0	918.9	5	9	14	923.9	918.9
MW-03D	AES	CSXT	Mar-96	Abandoned	1104199.629	1574122.517	932.81	935.41	20.0	912.8	5	15	20	917.8	912.8
MW-03BR	SynTerra	Duke Energy	Apr-19	Active	1104216.352	1574138.038	932.99	935.87	64.5	868.5	5	59.5	64.5	873.5	868.5
MW-03BRL	SynTerra	Duke Energy	Jan-20	Active	1104230.397	1574122.560	933.44	936.49	105.0	828.4	5	99	104	834.4	829.4
MW-04	AES	CSXT	Mar-96	Abandoned	---	---	932.54	935.06	7.0	925.5	5	2	7	930.5	925.5
MW-06	AES	CSXT	Mar-96	Abandoned	---	---	930.67	933.24	12.0	918.7	10	2	12	928.7	918.7
MW-06A	Duke Engineering	Duke Energy	Nov-05	Abandoned	1103722.942	1574325.996	928.50	931.62	15.0	913.5	10	5	15	923.5	913.5
MW-18	Duke Engineering	Duke Power	Mar-99	Active	1103555.790	1574116.247	931.08	933.34	25.0	906.1	15	9.5	24.5	921.6	906.6
MW-19	Duke Engineering	Duke Power	Mar-99	Abandoned	1104516.773	1574147.074	931.65	934.20	19.0	912.7	10	9	19	922.7	912.7
MW-20	Duke Engineering	Duke Power	Apr-99	Active	1104213.556	1574128.665	933.23	935.71	25.5	907.7	5	20	25	913.2	908.2
MW-21	Duke Engineering	Duke Power	Mar-99	Active	1103738.846	1574327.052	930.68	934.53	18.0	912.7	13	5	18	925.7	912.7
MW-21BR	SynTerra	Duke Energy	Feb-20	Active	1103722.170	1574332.248	928.00	930.89	44.0	884.0	5	37	42	891.0	886.0
MW-21BRL	SynTerra	Duke Energy	Jan-20	Active	1103719.720	1574342.351	928.48	931.51	125.0	803.5	5	60	65	868.5	863.5
MW-39S	SynTerra	Duke Energy	Nov-19	Active	1103862.135	1574498.529	935.55	938.60	29.0	906.6	15	9	24	926.6	911.6
MW-39BR	SynTerra	Duke Energy	Dec-19	Active	1103861.343	1574509.394	935.25	937.92	52.9	882.4	5	45	50	890.3	885.3
MW-39BRL	SynTerra	Duke Energy	Jan-20	Active	1103868.772	1574504.365	935.17	937.91	80.0	855.2	5	75	80	860.2	855.2
RI-SG-1	SynTerra	Duke Energy	Mar-19	Active	1104444.149	1573969.381	927.79	---	---	---	---	---	---	---	---
RI-SG-2	SynTerra	Duke Energy	Mar-19	Active	1104200.322	1574301.565	930.31	---	---	---	---	---	---	---	---
RI-SG-3	SynTerra	Duke Energy	Mar-19	Active	1103695.769	1574251.979	927.44	---	---	---	---	---	---	---	---
CSXT PARCEL 4 - REEDY RIVER FLOODPLAIN/WETLANDS															
MW-05	AES	CSXT	Mar-96	Active	1103060.693	1574402.095	929.58	929.73	14.0	915.6	10	4	14	925.6	915.6
MW-22	AES	CSXT	Apr-99	Active	1103063.776	1574406.424	930.47	930.30	36.5	894.0	10	25	35	905.5	895.5
MW-38S			not installed												
MW-40BR	SynTerra	Duke Energy	Feb-20	Active	1103053.240	1574410.054	930.17	929.85	80.0	850.2	10	65	75	865.2	855.2

TABLE 6-4
MONITORING WELL CONSTRUCTION DETAILS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Well	Installed By/For		Install Date	Well Status	Northing	Easting	Ground Elevation	TOC Elevation	Total Depth of Boring		Screen Length	Screen Interval			
												Top	Bottom	Top	Bottom
	Consultant	Client/Owner							ft-bls	Elevation	ft	ft-bls		Elevation	
CSXT PARCEL 5 - REEDY RIVER FLOODPLAIN/WETLANDS															
MW-23	Duke Engineering	Duke Power	May-99	Abandoned	1103037.2	1574608.164	922.25	924.63	43.0	879.3	10	32.5	42.5	889.8	879.8
MW-24	Duke Engineering	Duke Power	May-99	Abandoned	1103032.223	1574601.039	922.21	926.13	11.0	911.2	10	0.4	10.4	921.8	911.8
GREENVILLE COUNTY - LEGACY CHARTER ELEMENTARY															
MW-25	Duke Engineering	Duke Power	May-99	Abandoned	---	---	928.53	928.53	16.7	911.8	15	1	16	927.5	912.5
MW-25R	S&ME	Duke Energy	Jul-11	Active	1104577.939	1574384.196	930.79	930.75	16.6	914.2	15	1.6	16.6	929.2	914.2
MW-41S	SynTerra	Duke Energy	Oct-19	Active	1104448.222	1574485.435	930.13	929.93	20	910.1	15	5	20	925.1	910.1
MW-41TZ	SynTerra	Duke Energy	Nov-19	Active	1104443.242	1574476.744	929.94	929.52	55	874.9	10	45	55	884.9	874.9
MW-41BR	SynTerra	Duke Energy	Oct-19	Active	1104435.246	1574465.954	929.92	929.80	99.0	830.9	10	80	90	849.9	839.9
GREENVILLE COUNTY - SWAMP RABBIT TRAIL															
MW-30S	SynTerra	Duke Energy	Dec-18	Active	1104136.705	1573788.946	932.60	932.80	19.9	912.7	15	5	20	927.6	912.6
MW-30TZ	SynTerra	Duke Energy	Dec-19	Active	1104144.363	1573785.995	932.57	932.54	40.0	892.6	5	35	40	897.6	892.6
MW-31S	SynTerra	Duke Energy	Oct-18	Active	1103712.681	1573935.913	932.51	932.11	20.0	912.5	15	5	20	927.5	912.5
MW-31TZ	SynTerra	Duke Energy	Oct-18	Active	1103705.803	1573938.694	932.37	932.07	39.0	893.4	10	28	38	904.4	894.4
MW-32S	SynTerra	Duke Energy	Dec-19	Active	1103909.294	1573859.880	931.98	931.73	35.0	897.0	15	20	35	912.0	897.0
MW-32TZ	SynTerra	Duke Energy	Dec-19	Active	1103904.939	1573861.601	931.74	931.92	66.0	865.7	10	56	66	875.7	865.7
MW-33S	SynTerra	Duke Energy	Dec-19	Active	1104902.020	1573641.427	932.12	932.06	20.0	912.1	15	5	20	927.1	912.1
MW-33TZ	SynTerra	Duke Energy	Dec-19	Active	1104906.515	1573641.307	931.81	931.24	40.0	891.8	5	35	40	896.8	891.8
MW-48S	SynTerra	Duke Energy	Feb-20	Active	1104730.873	1573659.968	932.80	932.56	30.8	902.0	15	15	30	917.8	902.8
MW-48TZ	SynTerra	Duke Energy	Feb-20	Active	1104740.919	1573658.275	932.72	932.66	55.0	877.7	10	45	55	887.7	877.7
REEDY RIVER															
RI-RR-1	SynTerra	Duke Energy	Apr-19	Active	1104357.704	1573609.153	938.68	---	---	---	---	---	---	---	---
RI-RR-2	SynTerra	Duke Energy	Apr-19	Active	1103762.840	1573864.499	934.14	---	---	---	---	---	---	---	---
RI-RR-3	SynTerra	Duke Energy	Apr-19	Active	1102176.144	1575064.152	929.49	---	---	---	---	---	---	---	---
RI-RR-4	SynTerra	Duke Energy	Apr-19	Active	1102266.233	1575034.784	925.81	---	---	---	---	---	---	---	---

Prepared by: VJH/MSM Checked by: JPC

Notes:

'---' Indicates that data is not availible or not applicable

[1] Proposed Hydro-Stratigraphic Well Classifications (Altamont, 2016) based on the following subjective criteria:

Deep Saprolite - Saturated Screen Mid-Point greater than 20± feet below water table surface.

Elevation - Feet relative to North American Vertical Datum (NAVD 1988)

ft - feet

ft-bls - Feet below land surface

Mid-Depth Saprolite - Saturated Screen Mid-Point between 7± and 20± feet below water table surface.

Shallow - Saturated Screen Mid-Point (SSMP) less than 7± feet.

TABLE 6-5
SLUG TEST RESULTS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

SHALLOW ZONE (UNCONFINED)								
Well ID	Slug Test	Slug Test Number	Analytical Solution	Stratigraphic Unit	Hydraulic Conductivity (cm/sec)		Hydraulic Conductivity (ft/day)	
					Measured	Geometric Mean	Measured	Geometric Mean
MW-35S	Falling Head	Test 1	Hvorslev	Fill	6.55E-04	8.53E-04	1.86E+00	2.42E+00
	Rising Head	Test 2	Hvorslev	Fill	1.11E-03		3.15E+00	
MW-36S	Falling Head	Test 1	Hvorslev	Fill	3.71E-04	3.68E-04	1.05E+00	1.04E+00
	Rising Head	Test 2	Hvorslev	Fill	3.64E-04		1.03E+00	
				GEOMETRIC MEAN	**5.60E-04**			**1.59E+00**
				HIGHEST CONDUCTIVITY	**8.53E-04**			**2.42E+00**
				LOWEST CONDUCTIVITY	**3.68E-04**			**1.04E+00**
MW-29S	Rising Head	Test 1	Bouwer-Rice	Alluvium	1.23E-02	1.23E-02	3.49E+01	3.49E+01
	Rising Head	Test 2	Bouwer-Rice	Alluvium	1.23E-02		3.49E+01	
MW-30S	Rising Head	Test 1	Bouwer-Rice	Alluvium	8.01E-03	5.74E-03	2.27E+01	1.63E+01
	Rising Head	Test 2	Bouwer-Rice	Alluvium	4.12E-03		1.17E+01	
MW-32S	Falling Head	Test 1	Hvorslev	Alluvium	3.04E-04	2.34E-04	8.61E-01	6.62E-01
	Rising Head	Test 2	Hvorslev	Alluvium	1.80E-04		5.10E-01	
MW-33S	Falling Head	Test 1	Hvorslev	Alluvium	1.32E-03	1.45E-03	3.75E+00	4.11E+00
	Rising Head	Test 2	Hvorslev	Alluvium	1.59E-03		4.51E+00	
MW-34S	Falling Head	Test 1	Hvorslev	Alluvium	9.06E-04	6.52E-04	2.57E+00	1.85E+00
	Rising Head	Test 2	Hvorslev	Alluvium	4.70E-04		1.33E+00	
MW-39S	Falling Head	Test 1	Springer-Gelhar	Alluvium	3.54E-02	7.19E-03	1.00E+02	2.04E+01
	Rising Head	Test 2	Hvorslev	Alluvium	1.46E-03		4.14E+00	
MW-41S	Falling Head	Test 1	Hvorslev	Alluvium	1.13E-03	9.77E-04	3.20E+00	2.77E+00
	Rising Head	Test 2	Hvorslev	Alluvium	8.46E-04		2.40E+00	
				GEOMETRIC MEAN	**1.96E-03**			**5.55E+00**
				HIGHEST CONDUCTIVITY	**1.23E-02**			**3.49E+01**
				LOWEST CONDUCTIVITY	**2.34E-04**			**6.62E-01**
MW-31S	Rising Head	Test 1	Bouwer-Rice	Saprolite	4.08E-03	2.43E-03	1.16E+01	6.88E+00
	Rising Head	Test 2	Bouwer-Rice	Saprolite	1.45E-03		4.10E+00	
MW-37S	Falling Head	Test 1	Hvorslev	Saprolite	1.12E-03	1.23E-03	3.18E+00	3.49E+00
	Rising Head	Test 2	Hvorslev	Saprolite	1.35E-03		3.84E+00	
MW-42S	Falling Head	Test 1	Hvorslev	Saprolite	9.36E-04	9.15E-04	2.65E+00	2.59E+00
	Rising Head	Test 2	Hvorslev	Saprolite	8.95E-04		2.54E+00	
				GEOMETRIC MEAN	**1.40E-03**			**3.97E+00**
				HIGHEST CONDUCTIVITY	**2.43E-03**			**6.88E+00**
				LOWEST CONDUCTIVITY	**9.15E-04**			**2.59E+00**

TABLE 6-5
SLUG TEST RESULTS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

TRANSITION ZONE (UNCONFINED)								
Well ID	**Slug Test**	**Slug Test Number**	**Analytical Solution**	**Flow Zone**	**Hydraulic Conductivity (cm/sec)**		**Hydraulic Conductivity (ft/day)**	
					Measured	**Geometric Mean**	**Measured**	**Geometric Mean**
MW-02TZ	Falling Head	Test 1	Hvorslev	Transition Zone	9.45E-04	9.53E-04	2.68E+00	2.70E+00
	Rising Head	Test 2	Hvorslev	Transition Zone	9.61E-04		2.73E+00	
MW-29TZ	Rising Head	Test 1	Hvorslev	Transition Zone	8.22E-05	9.60E-05	2.33E-01	2.72E-01
	Rising Head	Test 2	Hvorslev	Transition Zone	1.12E-04		3.18E-01	
MW-30TZ	Falling Head	Test 1	Hvorslev	Transition Zone	9.16E-05	9.13E-05	2.60E-01	2.59E-01
	Rising Head	Test 2	Hvorslev	Transition Zone	9.11E-05		2.58E-01	
MW-31TZ	Rising Head	Test 1	Hvorslev	Transition Zone	2.00E-04	1.94E-04	5.67E-01	5.50E-01
	Rising Head	Test 2	Hvorslev	Transition Zone	1.88E-04		5.32E-01	
MW-32TZ	Falling Head	Test 1	Springer-Gelhar	Transition Zone	2.72E-02	3.56E-02	7.71E+01	1.01E+02
	Rising Head	Test 2	Springer-Gelhar	Transition Zone	4.66E-02		1.32E+02	
MW-33TZ	Falling Head	Test 1	Hvorslev	Transition Zone	2.47E-05	5.39E-05	7.01E-02	1.53E-01
	Rising Head	Test 2	Hvorslev	Transition Zone	1.18E-04		3.33E-01	
MW-34TZ	Falling Head	Test 1	Hvorslev	Transition Zone	9.00E-04	7.93E-04	2.55E+00	2.25E+00
	Rising Head	Test 2	Hvorslev	Transition Zone	6.99E-04		1.98E+00	
MW-35TZ	Falling Head	Test 1	Hvorslev	Transition Zone	3.64E-04	1.29E-04	1.03E+00	3.66E-01
	Rising Head	Test 2	Hvorslev	Transition Zone	4.58E-05		1.30E-01	
MW-36TZ	Falling Head	Test 1	Hvorslev	Transition Zone	3.77E-03	3.73E-03	1.07E+01	1.06E+01
	Rising Head	Test 2	Hvorslev	Transition Zone	3.69E-03		1.05E+01	
MW-37TZ	Falling Head	Test 1	Hvorslev	Transition Zone	3.33E-05	3.43E-05	9.45E-02	9.71E-02
	Rising Head	Test 2	Hvorslev	Transition Zone	3.52E-05		9.98E-02	
MW-41TZ	Falling Head	Test 1	Hvorslev	Transition Zone	2.05E-05	1.95E-05	5.81E-02	5.53E-02
	Rising Head	Test 2	Hvorslev	Transition Zone	1.86E-05		5.27E-02	
MW-42TZ	Falling Head	Test 1	Hvorslev	Transition Zone	1.01E-03	1.01E-03	2.86E+00	2.86E+00
	Rising Head	Test 2	Hvorslev	Transition Zone	1.01E-03		2.86E+00	
					GEOMETRIC MEAN	**3.10E-04**		**8.80E-01**
					HIGHEST CONDUCTIVITY	**3.56E-02**		**1.01E+02**
					LOWEST CONDUCTIVITY	**1.95E-05**		**5.53E-02**

TABLE 6-5
SLUG TEST RESULTS
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

BEDROCK ZONE (CONFINED)								
Well ID	Slug Test	Slug Test Number	Analytical Solution	Flow Zone	Hydraulic Conductivity (cm/sec)		Hydraulic Conductivity (ft/day)	
					Measured	Geometric Mean	Measured	Geometric Mean
MW-02BR	Falling Head	Test 1	Hvorslev	Bedrock	2.65E-04	1.11E-04	7.50E-01	3.14E-01
	Rising Head	Test 2	Hvorslev	Bedrock	4.64E-05		1.32E-01	
MW-03BR	Rising Head	Test 1	Hvorslev	Bedrock	1.90E-05	1.87E-05	5.38E-02	5.29E-02
	Rising Head	Test 2	Hvorslev	Bedrock	1.84E-05		5.21E-02	
MW-03BRL	Falling Head	Test 1	Hvorslev	Bedrock	9.57E-04	3.81E-04	2.71E+00	1.08E+00
	Rising Head	Test 2	Hvorslev	Bedrock	1.52E-04		4.30E-01	
MW-21BR	Falling Head	Test 1	Hvorslev	Bedrock	1.49E-03	1.47E-03	4.21E+00	4.17E+00
	Rising Head	Test 2	Hvorslev	Bedrock	1.46E-03		4.13E+00	
MW-21BRL	Falling Head	Test 1	Hvorslev	Bedrock	5.26E-04	5.19E-04	1.49E+00	1.47E+00
	Rising Head	Test 2	Hvorslev	Bedrock	5.12E-04		1.45E+00	
MW-29BR	Falling Head	Test 1	Hvorslev	Bedrock	8.87E-05	9.05E-05	2.51E-01	2.56E-01
	Rising Head	Test 2	Hvorslev	Bedrock	9.23E-05		2.62E-01	
MW-34BR	Falling Head	Test 1	Hvorslev	Bedrock	6.26E-05	6.28E-05	1.78E-01	1.78E-01
	Rising Head	Test 2	Hvorslev	Bedrock	6.29E-05		1.78E-01	
MW-36BR	Falling Head	Test 1	Hvorslev	Bedrock	1.65E-03	1.48E-03	4.68E+00	4.19E+00
	Rising Head	Test 2	Hvorslev	Bedrock	1.33E-03		3.76E+00	
MW-37BR	Falling Head	Test 1	Hvorslev	Bedrock	4.97E-04	4.75E-04	1.41E+00	1.35E+00
	Rising Head	Test 2	Hvorslev	Bedrock	4.55E-04		1.29E+00	
MW-39BR	Falling Head	Test 1	Hvorslev	Bedrock	2.82E-04	2.80E-04	7.98E-01	7.94E-01
	Rising Head	Test 2	Hvorslev	Bedrock	2.79E-04		7.91E-01	
MW-39BRL	Falling Head	Test 1	Hvorslev	Bedrock	3.73E-04	4.48E-04	1.06E+00	1.27E+00
	Rising Head	Test 2	Hvorslev	Bedrock	5.38E-04		1.52E+00	
MW-41BR	Falling Head	Test 1	Hvorslev	Bedrock	2.10E-04	2.17E-04	5.94E-01	6.15E-01
	Rising Head	Test 2	Hvorslev	Bedrock	2.25E-04		6.37E-01	
MW-42BR	Falling Head	Test 1	Hvorslev	Bedrock	1.50E-03	1.24E-03	4.24E+00	3.51E+00
	Rising Head	Test 2	Hvorslev	Bedrock	1.02E-03		2.90E+00	
					GEOMETRIC MEAN	**2.85E-04**		**8.07E-01**
					HIGHEST CONDUCTIVITY	**1.48E-03**		**4.19E+00**
					LOWEST CONDUCTIVITY	**1.87E-05**		**5.29E-02**

Prepared by: TAW Checked by: TDP

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)										
	Analytical Parameter	Benzene	Ethylbenzene	Toluene	Xylene			MTBE	1,4-Dichlorobenzene	2-Butanone (MEK)	2-Hexanone	Acetone	Bromodichloromethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	Styrene	Trichloroethene	Vinyl Chloride
					m&p-Xylene	o-Xylene	Total Xylene												
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	5	700	1,000	NE	NE	10,000	40	75	NE	NE	NE	NE	80	NE	NE	100	NE	2
Sample ID	Sample Collection Date	Analytical Results							Analytical Results										
MW-01	03/20/2019	**25.8**	**44.9**	**11.2**	**35.4**	**27.8**	**63.3**	<10	<10	<50	<50	<250	<10	<50	<10	<10	<10	<10	<10
MW-01	02/17/2020	**29.9**	**42.4**	**12.4**	**43.3**	**28.3**	**71.5**	<10	<10	<50	<50	<250	<10	<50	<10	<10	<10	<10	<10
MW-02	03/20/2019	**3.4 D6,S1**	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-02	02/17/2020	**0.37 j**	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-02BR	11/25/2019	**1,100**	**274**	**89.2**	**143**	**82.5**	**226**	<25	<25	<125	<125	<625	<25	<125	<25	<25	**9.6 j**	<25	<25
MW-02BR	02/17/2020	**964**	**92.8**	**69**	**72.8**	**45.5**	**118**	<12.5	<12.5	<62.5	<62.5	<312	<12.5	<62.5	<12.5	<12.5	<12.5	<12.5	<12.5
MW-02TZ	02/17/2020	**817**	**109**	<12.5	**28**	**4.9 j**	**28**	<12.5	<12.5	<62.5	<62.5	<312	<12.5	<62.5	<12.5	<12.5	<12.5	<12.5	<12.5
MW-03BR	04/10/2019	**620**	**128**	**251**	**118**	**61.9**	**180**	<10	<10	<50	<50	<250	<10	<50	<10	<10	**59.1**	<10	<10
MW-03BR	02/17/2020	**595**	**136**	**266**	**150**	**83**	**233**	<10	<10	<50	<50	<250	<10	<50	<10	<10	**69.8 S1**	<10	<10
MW-03BRL	02/18/2020	**588**	**146**	**124**	**110**	**64.6**	**175**	<10	<10	<50	<50	<250	<10	<50	<10	<10	**38.5**	<10	<10
MW-05	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-05	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-07R	03/22/2019	**25.5**	**0.75 j**	<1	**1.7 j**	**0.25 j**	<1	**1.5**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-07R	02/13/2020	**22**	**4.7**	<1	**2.8**	**0.33 j**	**2.8**	**1.1**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-09R	03/22/2019	<1	<1	<1	<2	<1	<1	**2.3**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-09R	02/13/2020	<1	<1	<1	<2	<1	<1	**1.7**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-13R	03/21/2019	<1	<1	<1	<2	<1	<1	**1.2**	<1	<5	<5	<25	<1	<5	<1	<1	<1	**0.72 j**	<1
MW-13R	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-15	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	**1**	<1	<1	<1
MW-15	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	**0.77 j**	<1	<1	<1
MW-16	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-16	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-21	03/20/2019	**30.4**	**4.8**	**8.9**	**2.8**	**7.2**	**9.9**	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-21	02/18/2020	**4.8**	**0.92 j**	**1.1 S1**	<2	**0.98 j, S1**	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-21BR	02/18/2020	**3.6 j**	**53.2**	**43.5**	**43**	**23.2**	**66.2**	<5	<5	<25	<25	<125	<5	<25	<5	<5	**7**	<5	<5
MW-21BRL	02/18/2020	<1	**2.1**	**5.3**	**6.6**	**2.7**	**9.3**	<1	<1	<5	<5	<25	<1	<5	<1	<1	**6**	<1	<1
MW-22	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-22	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-25R	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-25R	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-26	03/21/2019	<1	<1	<1	<2	<1	<1	**0.48 j**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-26	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-27	03/21/2019	<1	<1	<1	<2	<1	<1	**1.8**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-27	02/10/2020	<1	<1	<1	<2	<1	<1	**0.41 j**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-28	03/22/2019	<1	<1	<1	<2	<1	<1	**2**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-28	02/13/2020	<1	<1	<1	<2	<1	<1	**1.1**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-29BR	02/11/2020	**151**	**11.2**	**109**	**25.1**	**12.8**	**37.8**	<2.5	<2.5	<12.5	<12.5	<62.5	<2.5	<12.5	<2.5	<2.5	**27.7**	<2.5	<2.5
MW-29S	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-29S	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-29TZ	03/21/2019	**1,920**	**411**	**66.3**	**181**	**109**	**290**	<25	<25	<125	<125	<625	<25	<125	<25	<25	<25	<25	<25
MW-29TZ	02/13/2020	**1,680**	**242**	**18.1 j**	**119**	**79.3**	**198**	<25	<25	<125	<125	<625	<25	<125	<25	<25	<25	<25	<25
MW-30S	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
MW-30S	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-30S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-30TZ	02/17/2020	**2.9**	**0.62 j**	<1	<2	**0.31 j**	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-31S	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
MW-31S	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-31S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-31TZ	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
MW-31TZ	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-31TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-32S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-32TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-33S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-33TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	**3.4 j**	<5	**18.3 j**	<1	<5	<1	<1	<1	<1	<1
MW-34BR	02/11/2020	**6.6**	**0.37 j**	**4.2**	**1.2 j**	**0.63 j**	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	**1.1**	<1	<1
MW-34S	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-34TZ	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	**4.9**	<1	<1	**0.57 j**
MW-35S	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)																	
	Analytical Parameter	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	25	NE	NE	NE	NE	NE	10	0.2	10	NE	10	10	10	NE	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results																	
MW-01	03/20/2019	**1,700 M1**	**491**	**479**	**225**	<10	**10.5**	<10	<10	<10	<10	<10	<10	<10	**3 j**	**66.1**	<10	**56.3**	**4.2 j**
MW-01	02/17/2020	**1,970**	**462**	**476**	**207**	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	**66.7 j**	<96.2	**74.2 j**	<96.2
MW-02	03/20/2019	**2.3 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-02	02/17/2020	**2.4 j,B**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-02BR	11/25/2019	**3,900 M1**	**259**	**432**	**203 E**	**20.7**	**4.9 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	**36.7**	<9.9	**34.3**	<9.9
MW-02BR	02/17/2020	**1,160**	**46.5**	**59.8**	**28.7**	**3.6 j**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	**6.2 j**	<9.8	**5.8 j**	<9.8
MW-02TZ	02/17/2020	**1,590**	**180**	**224**	**94.9 j**	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99
MW-03BR	04/10/2019	**2,910**	**226 E**	**367 E**	**24.6**	**167 E**	**2.9 j**	<10	<10	<10	<10	<10	<10	<10	<10	**24.7**	<10	**17**	<10
MW-03BR	02/17/2020	**1,430**	**35.8 j**	**49.7 j,S1**	<98	**28.1 j**	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98
MW-03BRL	02/18/2020	**2,430 M1**	**126**	**193**	**29.4 j**	**80.3 j**	<98	<98	<98	<98	<98	<98	<98	<98	<98	**20.2 j**	<98	**21.5 j**	<98
MW-05	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-05	02/18/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-07R	03/22/2019	**33.8**	**6.5 j**	**6.3 j**	**2.3 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-07R	02/13/2020	**51.7**	**4 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-09R	03/22/2019	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-09R	02/13/2020	<1	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-13R	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-13R	02/10/2020	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-15	03/22/2019	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-15	02/12/2020	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-16	03/22/2019	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-16	02/12/2020	<1	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-21	03/20/2019	**57.5**	**21**	<9.8	**27.8**	**1.8 j**	**4.1 j**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	**3.9 j**	**12.8**	<9.8	**2.2 j**	**2.9 j**
MW-21	02/18/2020	<9.8	**2.2 j**	<9.8	**4.6 j**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	**3 j**	<9.8	**2 j**	<9.8
MW-21BR	02/18/2020	**752**	**20.1**	**17.5**	**8.4 j**	**7.1 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	**3.7 j**	<9.9	**4.1 j**	<9.9
MW-21BRL	02/18/2020	**105**	**3.1 j**	**5.5 j**	<10	**2.5 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-22	03/21/2019	**0.65 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-22	02/18/2020	**1.8 j**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-25R	03/21/2019	**1.5 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-25R	02/13/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-26	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-26	02/10/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-27	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-27	02/10/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-28	03/22/2019	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-28	02/13/2020	**2.6 j,S1**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29BR	02/11/2020	**306**	**13**	**21.1**	<9.9	**7.2 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-29S	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-29S	02/11/2020	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29TZ	03/21/2019	**4,060**	**258 E**	**412 E**	**109 E**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**19.3**	<10	**9.5 j**	<10
MW-29TZ	02/13/2020	**3,200**	**322 E**	**211**	**142 E**	<9.6	**3.1 j**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	**28.7**	<9.6	**18.2**	<9.6
MW-30S	12/12/2018	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-30S	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-30S	02/17/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-30TZ	02/17/2020	**2 j,B**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31S	12/12/2018	<1	<10	<10	**2.8 j,L2,M0**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31S	03/21/2019	<1	<10	<10	**3 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31S	02/17/2020	**2.8 j,B**	<10	<10	**2.8 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31TZ	12/12/2018	**0.38 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31TZ	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31TZ	02/17/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-32S	02/17/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-32TZ	02/17/2020	**2.7 j,B**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-33S	02/17/2020	**6.1 j,B**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-33TZ	02/17/2020	**2.9 j,B**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-34BR	02/11/2020	**2.2 j**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-34S	02/11/2020	**0.73 j**	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-34TZ	02/11/2020	**0.42 j**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-35S	02/13/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (Other SVOC)										
	Analytical Parameter	1,2-Dichlorobenzene	1,3-Dichlorobenzene	2,4-Dimethylphenol	2,4-Dinitrotoluene	2-Methylphenol(o-Cresol)	3&4-Methylphenol(m&p Cresol)	bis(2-Ethylhexyl)phthalate	Dibenzofuran	Di-n-butylphthalate	Hexachloro-1,3-butadiene	Phenol
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	600	NE	NE	NE	NE	NE	6	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results										
MW-01	03/20/2019	<10	<10	<10	<10	<10	<10	<6	**22.5**	<10	<10	<10
MW-01	02/17/2020	<10	<10	<96.2	<96.2	<96.2	<96.2	<57.7	**23.2 j**	<96.2	<10	<96.2
MW-02	03/20/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-02	02/17/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-02BR	11/25/2019	<25	<25	**62.2**	<9.9	<9.9	<9.9	**81.5**	**10.7**	<9.9	**22.4 j,B,C8**	<9.9
MW-02BR	02/17/2020	<12.5	<12.5	**24.8**	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<12.5	<9.8
MW-02TZ	02/17/2020	<12.5	<12.5	<99	<99	<99	<99	<59.4	<99	<99	<12.5	<99
MW-03BR	04/10/2019	<10	<10	**75.2**	<10	**4.8 j,L2**	**7 j,L2**	<6	**7.5 j**	**5.3 j**	<10	<10
MW-03BR	02/17/2020	<10	<10	**49.8 j**	<98	<98	<98	<58.8	<98	<98	<10	<98
MW-03BRL	02/18/2020	<10	<10	<98	<98	<98	<98	<58.8	<98	<98	<10	<98
MW-05	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-05	02/18/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-07R	03/22/2019	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-07R	02/13/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-09R	03/22/2019	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-09R	02/13/2020	<1	<1	<9.7	<9.7	<9.7	<9.7	<5.8	<9.7	<9.7	<1	<9.7
MW-13R	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-13R	02/10/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-15	03/22/2019	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-15	02/12/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-16	03/22/2019	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-16	02/12/2020	<1	<1	<9.7	<9.7	<9.7	<9.7	<5.8	<9.7	<9.7	<1	<9.7
MW-21	03/20/2019	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	**11.3**	<9.8	<1	<9.8
MW-21	02/18/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	**2 j**	<9.8	<1	<9.8
MW-21BR	02/18/2020	<5	<5	<9.9	<9.9	<9.9	<9.9	<5.9	**2.5 j**	<9.9	<5	<9.9
MW-21BRL	02/18/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-22	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-22	02/18/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-25R	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-25R	02/13/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-26	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-26	02/10/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-27	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-27	02/10/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-28	03/22/2019	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-28	02/13/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-29BR	02/11/2020	<2.5	<2.5	**2.2 j**	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<2.5	<9.9
MW-29S	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-29S	02/11/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-29TZ	03/21/2019	<25	<25	**174 E**	<10	**8.8 j**	**13.9 L1**	<6	**6.2 j**	<10	<25	**11.1 L2**
MW-29TZ	02/13/2020	<25	<25	**230 E**	<9.6	<9.6	**21.8**	<5.8	**9.5 j**	<9.6	<25	**5.9 j**
MW-30S	12/12/2018	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-30S	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-30S	02/17/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-30TZ	02/17/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-31S	12/12/2018	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-31S	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-31S	02/17/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-31TZ	12/12/2018	<1	<1	<10	**5.3 j,L2**	<10	<10	<6	<10	<10	<1	<10
MW-31TZ	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-31TZ	02/17/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-32S	02/17/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-32TZ	02/17/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-33S	02/17/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-33TZ	02/17/2020	<1	<1	<9.8	<9.8	<9.8	**3.2 j**	<5.9	<9.8	<9.8	<1	<9.8
MW-34BR	02/11/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-34S	02/11/2020	<1	<1	<9.7	<9.7	<9.7	<9.7	<5.8	<9.7	<9.7	<1	<9.7
MW-34TZ	02/11/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-35S	02/13/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)										
					Xylene														
	Analytical Parameter	**Benzene**	**Ethylbenzene**	**Toluene**	**m&p-Xylene**	**o-Xylene**	**Total Xylene**	**MTBE**	**1,4-Dichlorobenzene**	**2-Butanone (MEK)**	**2-Hexanone**	**Acetone**	**Bromodichloromethane**	**Chloroform**	**Chloromethane**	**cis-1,2-Dichloroethene**	**Styrene**	**Trichloroethene**	**Vinyl Chloride**
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	**5**	**700**	**1,000**	**NE**	**NE**	**10,000**	**40**	**75**	**NE**	**NE**	**NE**	**NE**	**80**	**NE**	**NE**	**100**	**NE**	**2**
Sample ID	**Sample Collection Date**	**Analytical Results**							**Analytical Results**										
MW-35TZ	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-36BR	02/12/2020	<1	<1	<1	<2	<1	<1	**0.32 j**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-36S	02/12/2020	**9.4**	**51**	**11.7**	**54.8**	**33.3**	**88.2**	<4	<4	<20	<20	<100	<4	<20	<4	<4	<4	<4	<4
MW-36TZ	02/12/2020	<1	<1	<1	<2	<1	<1	**1.8**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-37BR	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-37S	02/10/2020	<1	<1	<1	<2	<1	<1	**0.38 j**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-37TZ	02/11/2020	<1	<1	**0.52 j**	<2	<1	<1	**1.6**	<1	<5	<5	<25	<1	**2.3 j**	<1	<1	<1	<1	<1
MW-39BR	02/18/2020	<1	<1	<1	<2	<1	<1	<1	**0.43 j**	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-39BRL	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-39S	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-40BR	04/30/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-41S	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-41TZ	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	**1.2**	**5.3**	<1	<1	<1	<1	<1
MW-41BR	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-42BR	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-42S	02/13/2020	<1	<1	<1	<2	<1	<1	**2.2**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-42TZ	02/12/2020	<1	<1	<1	<2	<1	<1	**0.36 j**	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-48S	04/30/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-48TZ	04/30/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
QC Sample Results																			
EQB	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	**3.7 j**	**0.58 j**	**18.6 j**	<1	<1	<1	<1	<1	<1	<1
EQB-01	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
EQB-1	03/20/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EQB-2	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-01	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EQB-3	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB	04/10/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	**5.1**	<1	<1	<1	<1
EQB-1	11/12/2019	NA	NA	NA	NA	NA	NA	NA	<9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQB-2	11/13/2019	NA	NA	NA	NA	NA	NA	NA	<9.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQB-3	11/14/2019	NA	NA	NA	NA	NA	NA	NA	<9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQB-4	11/15/2019	NA	NA	NA	NA	NA	NA	NA	<9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB-01_WQ_20200210	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-02_WQ_20200211	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-03_WQ_20200212	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-04_WQ_20200213	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-05-WQ-20200217	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-06_WQ_20200218	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-01_WQ_20200301	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-02_WQ_20200301	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-01_WQ_20200302	03/02/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-01_WQ_20200309	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-WQ-20200410	04/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
EB-01_WQ_20200430	04/30/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	**34.9**	<1	<5	<1	<1	<1	<1	<1
FB 1	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	**3.6 j**	**0.56 j**	**18.4 j**	<1	<1	<1	<1	<1	<1	<1
FB-01	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
MSMD-03_WQ_20200218	02/18/2020	**5.7**	**1.1**	**1.9**	**0.79 j**	**1.3**	**1.3**	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
FD-01 (MW-02)	03/20/2019	**1.5 D6,S1**	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-03BR DUP	02/17/2020	**576**	**103**	**266**	**107**	**59.5**	**166**	<20	<20	<100	<100	<500	<20	<100	<20	<20	**48.3 S1**	<20	<20
FD-02 (MW-13R)	03/21/2019	<1	<1	<1	<2	<1	<1	**1.1**	<1	<5	<5	<25	<1	<5	<1	<1	<1	**0.57 j**	<1
MW-21 DUP	02/18/2020	**6.7**	**1.2**	**2.3 S1**	**0.87 j**	**1.5 S1**	**1.5 S1**	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
MW-30S DUP	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
MW-42BR DUP	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	12/12/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
TRIP BLANK	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<1	<1	<1	<1	<1	<1
TRIP BLANK	03/12/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	03/14/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	03/15/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK_SED	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK_Soil	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)																	
	Analytical Parameter	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	25	NE	NE	NE	NE	NE	10	0.2	10	NE	10	10	10	NE	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results																	
MW-35TZ	02/13/2020	**1.4 j,S1**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-36BR	02/12/2020	<1	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-36S	02/12/2020	**368**	**26.6**	**18**	**17.8**	**6.7 j**	**3.2 j**	<10	<10	<10	<10	<10	<10	<10	**3.1 j**	**11.6**	<10	**9.3 j**	<10
MW-36TZ	02/12/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-37BR	02/11/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-37S	02/10/2020	<1	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-37TZ	02/11/2020	<1	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-39BR	02/18/2020	**2.2 j**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-39BRL	02/18/2020	**3.8 j**	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-39S	02/18/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-40BR	04/30/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-41S	02/13/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-41TZ	02/13/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-41TZL	02/13/2020	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-42BR	02/12/2020	<1	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-42S	02/13/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-42TZ	02/12/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-48S	04/30/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-48TZ	04/30/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
QC Sample Results																			
EQB	12/12/2018	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EQB-01	12/19/2018	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
EQB-1	03/20/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQB-2	03/21/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB-01	03/22/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EQB-3	03/22/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB	04/10/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EQB-1	11/12/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
EQB-2	11/13/2019	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
EQB-3	11/14/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
EQB-4	11/15/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
EB-01_WQ_20200210	02/10/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-02_WQ_20200211	02/11/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-03_WQ_20200212	02/12/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-04_WQ_20200213	02/13/2020	**1.5 j**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
EB-05-WQ-20200217	02/17/2020	<1	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
EB-06_WQ_20200218	02/18/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-01_WQ_20200301	03/01/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-02_WQ_20200301	03/01/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-01_WQ_20200302	03/02/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-01_WQ_20200309	03/09/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-WQ-20200410	04/10/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-01_WQ_20200430	04/30/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
FB 1	12/12/2018	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
FB-01	12/19/2018	<1	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4
MSMD-03_WQ_20200218	02/18/2020	<10 H2,R0	<10 H2,R0	<10 H2,R0	**2.6 j,H2,R0**	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0
FD-01 (MW-02)	03/20/2019	**0.98 j,S1**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-03BR DUP	02/17/2020	**1,770**	**69.2 j**	**102 S1**	<97.1	**53.9 j**	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1
FD-02 (MW-13R)	03/21/2019	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-21 DUP	02/18/2020	<9.6	**1.7 j**	<9.6	**3.2 j**	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	**1.8 j**	<9.6	<9.6	<9.6
MW-30S DUP	12/12/2018	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-42BR DUP	02/12/2020	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TRIP BLANK	12/12/2018	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	12/19/2018	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/12/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/14/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/15/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK_SED	03/19/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK_Soil	03/19/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (Other SVOC)										
	Analytical Parameter	1,2-Dichlorobenzene	1,3-Dichlorobenzene	2,4-Dimethylphenol	2,4-Dinitrotoluene	2-Methylphenol(o-Cresol)	3&4-Methylphenol(m&p Cresol)	bis(2-Ethylhexyl)phthalate	Dibenzofuran	Di-n-butylphthalate	Hexachloro-1,3-butadiene	Phenol
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	600	NE	NE	NE	NE	NE	6	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results										
MW-35TZ	02/13/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-36BR	02/12/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-36S	02/12/2020	<4	<4	<10	<10	<10	<10	<6	**14**	<10	<4	<10
MW-36TZ	02/12/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-37BR	02/11/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-37S	02/10/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-37TZ	02/11/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-39BR	02/18/2020	**0.85 j**	<10	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-39BRL	02/18/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-39S	02/18/2020	<1	**0.26 j**	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-40BR	04/30/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<10	<10
MW-41S	02/13/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-41TZ	02/13/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
MW-41TZL	02/13/2020	<1	<1	<9.8	<9.8	<9.8	<9.8	<5.9	<9.8	<9.8	<1	<9.8
MW-42BR	02/12/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-42S	02/13/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-42TZ	02/12/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-48S	04/30/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<10	<10
MW-48TZ	04/30/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<10	<10
QC Sample Results												
EQB	12/12/2018	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EQB-01	12/19/2018	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
EQB-1	03/20/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
EQB-2	03/21/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
EB-01	03/22/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EQB-3	03/22/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
EB	04/10/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EQB-1	11/12/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<9.6	<9.6
EQB-2	11/13/2019	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<5.8	<9.7	<9.7	<9.7	<9.7
EQB-3	11/14/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<9.6	<9.6
EQB-4	11/15/2019	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<9.6	<9.6
EB-01_WQ_20200210	02/10/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-02_WQ_20200211	02/11/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-03_WQ_20200212	02/12/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-04_WQ_20200213	02/13/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
EB-05-WQ-20200217	02/17/2020	<1	<1	<9.9	<9.9	<9.9	<9.9	<5.9	<9.9	<9.9	<1	<9.9
EB-06_WQ_20200218	02/18/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-01_WQ_20200301	03/01/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-02_WQ_20200301	03/01/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-01_WQ_20200302	03/02/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-01_WQ_20200309	03/09/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-WQ-20200410	04/10/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
EB-01_WQ_20200430	04/30/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<10	<10
FB 1	12/12/2018	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
FB-01	12/19/2018	<1	<1	<9.4	<9.4	<9.4	<9.4	<5.7	<9.4	<9.4	<1	<9.4
MSMD-03_WQ_20200218	02/18/2020	<1	<1	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<6 H2,R0	<10 H2,R0	<10 H2,R0	<1	<10 H2,R0
FD-01 (MW-02)	03/20/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-03BR DUP	02/17/2020	<20	<20	**50.8 j**	<97.1	<97.1	<97.1	<58.3	<97.1	<97.1	<20	<97.1
FD-02 (MW-13R)	03/21/2019	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-21 DUP	02/18/2020	<1	<1	<9.6	<9.6	<9.6	<9.6	<5.8	<9.6	<9.6	<1	<9.6
MW-30S DUP	12/12/2018	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
MW-42BR DUP	02/12/2020	<1	<1	<10	<10	<10	<10	<6	<10	<10	<1	<10
TRIP BLANK	12/12/2018	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	12/19/2018	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/12/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/14/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/15/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK_SED	03/19/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK_Soil	03/19/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)										
	Analytical Parameter	Benzene	Ethylbenzene	Toluene	Xylene			MTBE	1,4-Dichlorobenzene	2-Butanone (MEK)	2-Hexanone	Acetone	Bromodichloromethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	Styrene	Trichloroethene	Vinyl Chloride
					m&p-Xylene	o-Xylene	Total Xylene												
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	5	700	1,000	NE	NE	10,000	40	75	NE	NE	NE	NE	80	NE	NE	100	NE	2
Sample ID	Sample Collection Date	Analytical Results							Analytical Results										
QC Sample Results (Continued)																			
TRIP BLANK_SW	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	03/21/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB_SED	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK_GW	03/22/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	03/29/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB	04/10/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK-1	11/13/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
Trip Blank	11/15/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TRIP BLANK	11/25/2019	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-01_WQ_20200210	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-02_WQ_20200211	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-03_WQ_20200212	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-04_WQ_20200213	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-05-WQ-20200217	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-06_WQ_20200218	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-01_WQ_20200301	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-01_WQ_20200302	03/02/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-01_WQ_20200309	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-WQ-20200410	04/10/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1
TB-01_WQ_20200430	04/30/2020	<1	<1	<1	<2	<1	<1	<1	<1	<5	<5	<25	<1	<5	<1	<1	<1	<1	<1

Prepared by: MAG Checked by: JPC

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.

- Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.8 of the RIWP-A

< - Concentration not detected at or above the adjusted reporting limit.

µg/L - Micrograms per liter

B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.

C8 - Result may be biased high due to carryover from previously analyzed sample.

D6 - The precision between the sample and sample duplicate exceeded laboratory control limits.

E - Analyte concentration exceeded the calibration range. The reported result is estimated.

H2 - Extraction of preparation conducted outside EPA method holding time.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

L1 - Analyte recovery in the laboratory control sample was above quality control limits. Results may be biased high.

L2 - Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.

MTBE - Methyl-tert-butyl ether

NA - Not analyzed

NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.

PAH - Polycyclic aromatic hydrocarbon

R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

S1 - Data review findings indicate result may be biased, however, data is usable.

VOA - Volatile organic aromatics

VOC - Volatile organic compound

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)																	
	Analytical Parameter	**Naphthalene**	**1-Methylnaphthalene**	**2-Methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Phenanthrene**	**Pyrene**
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	**25**	**NE**	**NE**	**NE**	**NE**	**NE**	**10**	**0.2**	**10**	**NE**	**10**	**10**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**																	
QC Sample Results (Continued)																			
TRIP BLANK_SW	03/19/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/21/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB_SED	03/22/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/22/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK_GW	03/22/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	03/29/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB	04/10/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK-1	11/13/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	11/15/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRIP BLANK	11/25/2019	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200210	02/10/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-02_WQ_20200211	02/11/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-03_WQ_20200212	02/12/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-04_WQ_20200213	02/13/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-05-WQ-20200217	02/17/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-06_WQ_20200218	02/18/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200301	03/01/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200302	03/02/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200309	03/09/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-WQ-20200410	04/10/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200430	04/30/2020	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Prepared by: MAG Checked by: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.8 of the RIWP-A
< - Concentration not detected at or above the adjusted reporting limit.
µg/L - Micrograms per liter
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
C8 - Result may be biased high due to carryover from previously analyzed sample.
D6 - The precision between the sample and sample duplicate exceeded laboratory control limits.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
H2 - Extraction of preparation conducted outside EPA method holding time.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L1 - Analyte recovery in the laboratory control sample was above quality control limits. Results may be biased high.
L2 - Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
S1 - Data review findings indicate result may be biased, however, data is usable.
VOA - Volatile organic aromatics
VOC - Volatile organic compound

TABLE 6-6
ANALYTICAL RESULTS SUMMARY - GROUNDWATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (Other SVOC)										
	Analytical Parameter	1,2-Dichlorobenzene	1,3-Dichlorobenzene	2,4-Dimethylphenol	2,4-Dinitrotoluene	2-Methylphenol(o-Cresol)	3&4-Methylphenol(m&p Cresol)	bis(2-Ethylhexyl)phthalate	Dibenzofuran	Di-n-butylphthalate	Hexachloro-1,3-butadiene	Phenol
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	600	NE	NE	NE	NE	NE	6	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results										
QC Sample Results (Continued)												
TRIP BLANK_SW	03/19/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/21/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB_SED	03/22/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/22/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK_GW	03/22/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	03/29/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB	04/10/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK-1	11/13/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
Trip Blank	11/15/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TRIP BLANK	11/25/2019	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-01_WQ_20200210	02/10/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-02_WQ_20200211	02/11/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-03_WQ_20200212	02/12/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-04_WQ_20200213	02/13/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-05-WQ-20200217	02/17/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-06_WQ_20200218	02/18/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-01_WQ_20200301	03/01/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-01_WQ_20200302	03/02/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-01_WQ_20200309	03/09/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-WQ-20200410	04/10/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA
TB-01_WQ_20200430	04/30/2020	<1	<1	NA	NA	NA	NA	NA	NA	NA	<1	NA

Prepared by: MAG Checked by: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.8 of the RIWP-A
< - Concentration not detected at or above the adjusted reporting limit.
µg/L - Micrograms per liter
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
C8 - Result may be biased high due to carryover from previously analyzed sample.
D6 - The precision between the sample and sample duplicate exceeded laboratory control limits.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
H2 - Extraction of preparation conducted outside EPA method holding time.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L1 - Analyte recovery in the laboratory control sample was above quality control limits. Results may be biased high.
L2 - Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
S1 - Data review findings indicate result may be biased, however, data is usable.
VOA - Volatile organic aromatics
VOC - Volatile organic compound

TABLE 6-7
ANALYTICAL RESULTS SUMMARY - SURFACE WATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)	8270D (PAH)					
					Xylene										
	Analytical Parameter	Benzene	Ethylbenzene	Toluene	m&p-Xylene	o-Xylene	Total Xylene	MTBE	Chloromethane	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	5	700	1,000	NE	NE	10,000	40	NE	25	NE	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results							Analytical Results	Analytical Results					
SW-01	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-02	03/19/2019	<1	<1	<1	<2	<1	<1	<1	**4.4**	<1	<10	<10	<10	<10	<10
SW-03	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-04	03/19/2019	**2.3**	**0.5 j**	<1	<2	<1	<1	<1	**13.2**	<10	<10	<10	<10	<10	<10
SW-05	03/19/2019	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-06	03/19/2019	<1	<1	<1	<2	<1	<1	<1	**10.5**	<1	<10	<10	<10	<10	<10
SW-07	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
SW-07	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-08	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
SW-08	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-09	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
SW-09	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-10	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
SW-10	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-11	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
SW-11	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-12	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-12	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-13	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-14	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-15	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
SW-16	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10
QC SAMPLE RESULTS															
SW-DUP1 (SW-12)	12/19/2018	<1	<1	<1	<2	<1	<1	<1	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
SW-15 DUP	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10

Prepared by: MAG Checked by: JPC

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.

- Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.8 of the RIWP-A

< - Concentration not detected at or above the adjusted reporting limit.

µg/L - Micrograms per liter

j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MTBE - Methyl-tert-butyl ether

NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.

PAH - Polycyclic aromatic hydrocarbon

VOA - volatile organic aromatics

VOC - volatile organic compound

TABLE 6-7
ANALYTICAL RESULTS SUMMARY - SURFACE WATER
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

		8270D (PAH)											
	Analytical Parameter	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Phenanthrene**	**Pyrene**
	Reporting Units	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
	Regulatory Standard	**10**	**0.2**	**10**	**NE**	**10**	**10**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**											
SW-01	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-02	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-03	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-04	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-05	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-06	03/19/2019	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-07	12/19/2018	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
SW-07	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-08	12/19/2018	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
SW-08	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-09	12/19/2018	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
SW-09	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-10	12/19/2018	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
SW-10	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-11	12/19/2018	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
SW-11	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-12	12/19/2018	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-12	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-13	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-14	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-15	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SW-16	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
QC SAMPLE RESULTS													
SW-DUP1 (SW-12)	12/19/2018	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
SW-15 DUP	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Prepared by: MAG Checked by: JPC

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.

- Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.8 of the RIWP-A

< - Concentration not detected at or above the adjusted reporting limit.

µg/L - Micrograms per liter

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MTBE - Methyl-tert-butyl ether

NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.

PAH - Polycyclic aromatic hydrocarbon

VOA - volatile organic aromatics

VOC - volatile organic compound

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**1-Methylnaphthalene**	**2,6,10-Trimethyldodecane (1380)**	**2,6,10-Trimethyltridecane (1470)**	**2-Methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benz(a)anthracene**	**Benzo(a)fluoranthene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(e)pyrene**	**Benzo(g,h,i)perylene**
SS-01_SS_20190424	04/24/2019	27.8	<781	<781	61.7	58.2	17.6	26.7	65.7	18.7	85.4	74	66.7	58.1
SS-02_SS_20190424	04/24/2019	15.9	<833	<833	33.5	13	2.63 j	9.4 j	11 j	<12.5	12.7	24.4	18.8	13.7
SS-03_SS_20190424	04/24/2019	24.1	<694	<694	57.9	19.9	<10.4	7.58 j	2.54 j	<10.4	4.32 j	3.41 j	3.18 j	3.5 j
QC SAMPLE RESULTS														
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**Benzo(j)+(k)fluoranthene**	**Benzothiophene**	**Biphenyl**	**C1-Benzo(b)thiophenes**	**C1-Chrysenes**	**C1-Decalins**	**C1-Dibenzothiophenes BS**	**C1-Fluoranthenes/Pyrenes**	**C1-Fluorenes**	**C1-Naphthalenes**	**C1-Naphthobenzothiophenes**	**C1-Phenanthrenes/Anthracenes**	**C2-Benzo(b)thiophenes**	**C2-Chrysenes BS**
SS-01_SS_20190424	04/24/2019	81.7	<11.7	25.8	16.3	36.3	<11.7	8.41 j	55.8	15.9	61.1	8.09 j	53.6	5.8 j	17.5
SS-02_SS_20190424	04/24/2019	21	<12.5	12.1 j	8.69 j	7.69 j	<12.5	<12.5	9.92 j	5.16 j	33.9	3.52 j	16.1	<12.5	6.32 j
SS-03_SS_20190424	04/24/2019	3.6 j	<10.4	24.2	12.5	2.23 j	<10.4	4.91 j	4.82 j	8.9 j	56.1	<10.4	22.9	3.8 j	<10.4
QC SAMPLE RESULTS															
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	Sample Collection Date	C2-Decalins	C2-Dibenzothiophenes	C2-Fluoranthenes/Pyrenes	C2-Fluorenes	C2-Naphthalenes	C2-Naphthobenzothiophenes	C2-Phenanthrenes/Anthr BS	C3-Benzo(b)thiophenes	C3-Chrysenes	C3-Decalins	C3-Dibenzothiophenes	C3-Fluoranthenes/Pyrenes	C3-Fluorenes	C3-Naphthalenes
SS-01_SS_20190424	04/24/2019	5.38 j	12.9	36.9	28.5	78.7	11.1 j	26.7	7.73 j	20.5	6.12 j	8.6 j	19	26.6	47.6
SS-02_SS_20190424	04/24/2019	7.06 j	5.01 j	11.1 j	12.4 j	35.2	11.5 j	6.51 j	4.67 j	<12.5	7.26 j	5.82 j	6 j	14.8	17.6
SS-03_SS_20190424	04/24/2019	<10.4	7.33 j	3.76 j	20.6	63.8	<10.4	6.67 j	6.08 j	<10.4	<10.4	4.96 j	<10.4	16.4	33.7
QC SAMPLE RESULTS															
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**C3-Naphthobenzothiophenes**	**C3-Phenanthrenes/Anthracenes**	**C4-Benzo(b)thiophenes**	**C4-Chrysenes**	**C4-Decalins**	**C4-Dibenzothiophenes**	**C4-Fluoranthenes/Pyrenes**	**C4-Naphthalenes**	**C4-Naphthobenzothiophenes**	**C4-Phenanthrenes/Anthracenes**	**Chrysene**	**cis/trans-Decalin**	**Dibenz(a,h)+(a,c)anthracene**
SS-01_SS_20190424	04/24/2019	7.4 j	16.1	4.39 j	<11.7	15.3	<11.7	12.1	23.8	<11.7	9.13 j	85.6	<5.86	15.9
SS-02_SS_20190424	04/24/2019	4.47 j	4.6 j	<12.5	<12.5	14.6	<12.5	9.56 j	9.9 j	<12.5	<12.5	33.6	<6.25	4.28 j
SS-03_SS_20190424	04/24/2019	<10.4	3.52 j	<10.4	<10.4	10.7	<10.4	3.09 j	17	<10.4	<10.4	3.84 j	<5.21	<10.4
QC SAMPLE RESULTS														
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
μg/L - Micrograms per liter
μg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**Dibenzofuran**	**Dibenzothiophene**	**DRO (C10-C28)**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Naphthalene**	**Naphthobenzothiophenes**	**n-Decane (C10)**	**n-Docosane (C22)**	**n-Dodecane (C12)**	**n-Dotriacontane (C32)**	**n-Eicosane (C20)**	**n-Heneicosane (C21)**	**n-Hentriacontane (C31)**
SS-01_SS_20190424	04/24/2019	103	17.4	64100	133	36.4	48.1	33.8	11.5 j	<781	159 j	<781	1270	162 j	152 j	2760
SS-02_SS_20190424	04/24/2019	45.4	6.94 j	66300	36.2	16.8	11.8 j	24.1	5.66 j	<833	132 j	<833	3310	<833	169 j	9390
SS-03_SS_20190424	04/24/2019	95.6	12.1	46100	28	28.1	2.89 j	29.4	<10.4	<694	111 j	<694	2130	109 j	<694	2480
QC SAMPLE RESULTS																
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**n-Heptatriacontane (C37)**	**n-Hexacosane (C26)**	**n-Hexadecane (C16)**	**n-Hexatriacontane (C36)**	**n-Nonacosane (C29)**	**n-Nonadecane (C19)**	**n-Nonane (C9)**	**n-Nonatriacontane (C39)**	**n-Octacosane (C28)**	**n-Octadecane (C18)**	**n-Octatriacontane (C38)**	**Norpristane (1650)**	**n-Pentacosane (C25)**
SS-01_SS_20190424	04/24/2019	1250	702 j	202 j	658 j	2710	<781	<781	397 j	1090	919	471 j	<781	1110
SS-02_SS_20190424	04/24/2019	1860	1680	<833	2210	7620	<833	<833	1130	2540	928	1280	<833	2240
SS-03_SS_20190424	04/24/2019	1260	1100	199 j	1910	3440	<694	<694	978	1700	835	903	<694	1260
QC SAMPLE RESULTS														
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	**Sample Collection Date**	**n-Tetracontane (C40)**	**n-Tetracosane (C24)**	**n-Tetradecane (C14)**	**n-Tetratriacontane (C34)**	**n-Triacontane (C30)**	**n-Tricosane (C23)**	**n-Tridecane (C13)**	**n-Tritriacontane (C33)**	**n-Undecane (C11)**	**Perylene**	**Phenanthrene**	**Phytane**	**Pristane**	**Pyrene**	**Retene**
SS-01_SS_20190424	04/24/2019	294 j	262 j	187 j	1360	1500	388 j	<781	1780	<781	24.6	233	<781	<781	110	2.9 j
SS-02_SS_20190424	04/24/2019	958	533 j	<833	3040	3100	607 j	<833	5320	<833	6.45 j	114	<833	<833	23	<12.5
SS-03_SS_20190424	04/24/2019	820	447 j	203 j	1920	2140	319 j	<694	2050	<694	3.22 j	195	<694	<694	14.2	<10.4
QC SAMPLE RESULTS																
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**Total Petroleum Hydrocarbons (C9-C44)**	**Total Saturated Hydrocarbons**	**1,1,4-Trimethylcyclohexane**	**1,1-Dimethylcyclopentane**	**1,2,3,4-Tetramethylbenzene**	**1,2,3,5-Tetramethylbenzene**	**1,2,3-Trimethylbenzene**	**1,2,4,5-Tetramethylbenzene**	**1,2,4-Triethylbenzene**	**1,2,4-Trimethylbenzene**
SS-01_SS_20190424	04/24/2019	173000	26000 j	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	236000	60500 j	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	119000	32800 j	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS											
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**1,2-Dichloroethane**	**1,2-Diethylbenzene**	**1,2-Dimethyl-3-Ethylbenzene**	**1,2-Dimethyl-4-ethylbenzene**	**1,2-Dimethylcyclohexane (cis)**	**1,2-Dimethylcyclohexane (trans)**	**1,3,5-Triethylbenzene**	**1,3,5-Trimethylbenzene**	**1,3-Diethylbenzene**	**1,3-Dimethyl-2-Ethylbenzene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS											
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**1,3-Dimethyl-4-ethylbenzene**	**1,3-Dimethyl-5-Ethylbenzene**	**1,3-Dimethyl-5-tert-Butylbenzene**	**1,3-Dimethylcyclopentane (cis)**	**1,3-DMCP (trans)/2-Methyl-1-hexene**	**1,4-Dimethyl-2-Ethylbenzene**	**1,4-Dimethylcyclohexane (trans)**	**1-Decene**	**1-Heptene/1,2-DMCP (trans)**	**1-Hexene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<714000	<357000	<357000	<357000	<714000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<385000	<192000	<192000	<192000	<385000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<500000	<250000	<250000	<250000	<500000	<250000
QC SAMPLE RESULTS											
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**1-Methyl-2-ethylbenzene**	**1-Methyl-2-isopropylbenzene**	**1-Methyl-2-n-propylbenzene**	**1-Methyl-3-ethylbenzene**	**1-Methyl-3-isopropylbenzene**	**1-Methyl-3-n-propylbenzene**	**1-Methyl-4-Ethylbenzene**	**1-Methyl-4-Isopropylbenzene**	**1-Methyl-4-N-Propylbenzene**	**1-Nonene**	**1-Octene**	**1-Pentene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<893000	<893000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<481000	<481000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<625000	<625000	<250000
QC SAMPLE RESULTS													
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**2,2,3-Trimethylbutane**	**2,2,3-Trimethylpentane**	**2,2-Dimethylbutane**	**2,2-Dimethylhexane**	**2,2-Dimethylpentane**	**2,3,3-Trimethylpentane**	**2,3,4-Trimethylpentane**	**2,3-Dimethylbutane**	**2,3-Dimethylheptane**	**2,3-Dimethylhexane**	**2,3-Dimethylpentane**	**2,4-Dimethylhexane**	**2,4-Dimethylpentane**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS														
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**2,5-Dimethylheptane**	**2,5-Dimethylhexane**	**2-Ethylthiophene**	**2-Methyl-1-Butene**	**2-Methyl-2-pentene**	**2-Methylheptane**	**2-Methylhexane**	**2-Methylnonane**	**2-Methyloctane**	**2-Methylpentane**	**2-Methylthiophene**	**2-Nonene**	**3,3-Diethylpentane**	**3,3-Dimethylheptane**	**3,3-Dimethyloctane**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<893000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<481000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<625000	<250000	<250000	<250000
QC SAMPLE RESULTS																
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**3,3-Dimethylpentane**	**3,4-Dimethylheptane**	**3,5-Dimethylheptane**	**3-Ethylhexane**	**3-Ethylpentane**	**3-Methyl-1-butene**	**3-Methylheptane**	**3-Methylhexane**	**3-Methylnonane**	**3-Methyloctane**	**3-Methylpentane**	**3-Methylthiophene**	**4-Methyl-1-pentene**	**4-Methylheptane**	**4-Methyloctane**	**Benzene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS																	
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**Benzothiophene**	**cis-2-Heptene**	**cis-2-Hexene**	**cis-2-Octene**	**cis-2-Pentene**	**cis-3-Nonene**	**Cyclohexane**	**Cyclopentane**	**Decane (C10)**	**Dodecane (C12)**	**Ethylbenzene**	**Ethylcyclopentane**	**Ethylene dibromide**	**Ethyl-Tert-Butyl-Ether**	**Heptane**	**Hexylbenzene**	**Indane**	**Indene**	**Isobutylbenzene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<893000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<481000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<625000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS																				
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

Reporting Units		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**Isobutylcyclohexane**	**Isooctane**	**Isopentane**	**Isoprene**	**Isopropyl Ether**	**Isopropylbenzene**	**Isopropylcyclohexane**	**Isopropylcyclopentane**	**Methylcyclohexane**	**Methylcyclopentane**	**Methyl-tert-butyl ether**	**MMT**	**n-Butylbenzene**	**n-Hexane**	**Nonane (C9)**	**N-Pentylbenzene**	**n-Propylbenzene**	**Octane**	**o-Xylene**
SS-01_SS_20190424	04/24/2019	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<893000	<357000	<357000	<357000	<357000	<357000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<481000	<192000	<192000	<192000	<192000	<192000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<625000	<250000	<250000	<250000	<250000	<250000	<250000	<250000
QC SAMPLE RESULTS																				
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-8
ANALYTICAL RESULTS SUMMARY - SHEEN
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREEVILLE, SC

	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample ID	**Sample Collection Date**	**p/m-Xylene**	**Pentadecane**	**Pentane**	**sec-Butylbenzene**	**Styrene**	**tert-Butylbenzene**	**Tertiary Butanol**	**Tertiary-Amyl Methyl Ether**	**Tetradecane (C14)**	**Thiophene**	**Toluene**	**trans-2-Heptene**	**trans-2-Hexene**	**trans-2-Pentene**	**trans-3-Heptene**	**trans-3-Nonene**	**Tridecane**	**Undecane**	**Xylene (Total)**
SS-01_SS_20190424	04/24/2019	<714000	<893000	<357000	<357000	<357000	<357000	<4460000	<357000	<893000	<357000	<357000	<357000	<357000	<357000	<357000	<357000	<893000	<357000	<357000
SS-02_SS_20190424	04/24/2019	<385000	<481000	<192000	<192000	<192000	<192000	<2400000	<192000	<481000	<192000	<192000	<192000	<192000	<192000	<192000	<192000	<481000	<192000	<192000
SS-03_SS_20190424	04/24/2019	<500000	<625000	<250000	<250000	<250000	<250000	<3120000	<250000	<625000	<250000	<250000	<250000	<250000	<250000	<250000	<250000	<625000	<250000	<250000
QC SAMPLE RESULTS																				
EB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20190424	04/24/2019	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Prepared by: MM Checked by: TP

Notes:
< - concentration not detected at or above the adjusted reporting limit.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
NA - Not analyzed
µg/L - Micrograms per liter
µg/kg - Micrograms per liter
mg/kg - Milligrams per kilogram
% - percent

TABLE 6-9
ANALYTICAL RESULTS SUMMARY - SEDIMENT
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		ASTM D2974-87	8260B (VOA and MTBE)						
Analytical Parameter		Percent Moisture	Benzene	Ethylbenzene	Toluene	Xylene: m&p-Xylene	Xylene: o-Xylene	Xylene: Xylene (Total)	MTBE
Reporting Units		%	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EPA RSL for Industrial Soil		NE	5,100	25,000	47,000,000	2,400,000	2,800,000	2,500,000	210,000
EPA RSL for Residential Soil		NE	1,200	5,800	4,900,000	560,000	650,000	580,000	47,000
Sample ID	Sample Collection Date	Analytical Results	Analytical Results						
SW-01-SED	03/19/2019	55.8	<9.6	<9.6	<9.6	<19.3	<9.6	<19.3	<9.6
SW-02-SED	03/22/2019	55.4	<12.1	<12.1	<12.1	<24.2	<12.1	<24.2	<12.1
SW-03-SED	03/19/2019	29.2	<7.8	<7.8	<7.8	<15.6	<7.8	<15.6	<7.8
SW-04-SED	03/19/2019	66.5	<19.8	<19.8	<19.8	<39.6	<19.8	<39.6	<19.8
SW-05-SED	03/19/2019	64.7	<13.2	<13.2	<13.2	<26.5	<13.2	<26.5	<13.2
SW-06-SED	03/19/2019	55.9	<13	<13	<13	<26	<13	<26	<13
SW-07-SED	12/19/2018	26.9	<7.8	<7.8	<7.8	<15.5	<7.8	<15.5	<7.8
SW-08-SED	12/19/2018	21.4	<4.9	<4.9	<4.9	<9.8	<4.9	<9.8	<4.9
SW-09-SED	12/19/2018	20.7	<6.2	<6.2	<6.2	<12.4	<6.2	<12.4	<6.2
SW-10-SED	12/19/2018	20.6	<4.4	<4.4	<4.4	<8.9	<4.4	<8.9	<4.4
SW-11-SED	12/19/2018	26.7	<5	<5	<5	<10.1	<5	<10.1	<5
SW-12-SED	12/19/2018	20.3	<4.4	<4.4	<4.4	<8.8	<4.4	<8.8	<4.4
SW-13 (0-0.5)	03/02/2020	30.5	<12.1	<12.1	<12.1	<24.2	<12.1	<24.2	<12.1
SW-13 (0.5-1)	03/02/2020	30.3	<8.5	<8.5	<8.5	<17	<8.5	<17	<8.5
SW-13 (1-2)	03/02/2020	34.6	<8.2	<8.2	<8.2	<16.3	<8.2	<16.3	<8.2
SW-13A (0-0.5)	03/02/2020	74.4	<21.8	<21.8	<21.8	<43.7	<21.8	<43.7	<21.8
SW-13A (0.5-1)	03/02/2020	64	<20.1	<20.1	<20.1	<40.2	<20.1	<40.2	<20.1
SW-14 (0-0.5)	03/02/2020	34.9	<9.9	<9.9	<9.9	<19.7	<9.9	<19.7	<9.9
SW-14 (0.5-1)	03/02/2020	34.1	<7.7	<7.7	<7.7	<15.5	<7.7	<15.5	<7.7
SW-14 (1-2)	03/02/2020	24.4	<9.1	<9.1	<9.1	<18.1	<9.1	<18.1	<9.1
SW-14 (2-3)	03/02/2020	32	NA	NA	NA	NA	NA	NA	NA
SW-14A (0-0.5)	03/02/2020	75.4	<31.3	<31.3	<31.3	<62.5	<31.3	<62.5	<31.3
SW-15 (0-0.5)	03/01/2020	57.8	<13.7	<13.7	<13.7	<27.5	<13.7	<27.5	<13.7
SW-15 (0.5-1)	03/01/2020	49.4	<10.1	<10.1	<10.1	<20.1	<10.1	<20.1	<10.1
SW-16 (0-0.5)	03/01/2020	50.3	<19.6	<19.6	<19.6	<39.3	<19.6	<39.3	<19.6
SW-16 (0.5-1)	03/01/2020	39.3	<20.6	<20.6	<20.6	<41.2	<20.6	<41.2	<20.6
SW-16 (1-2)	03/01/2020	31.4	<6.2	<6.2	<6.2	<12.4	<6.2	<12.4	<6.2
SW-16 (2-3)	03/01/2020	28.8	<7.5	<7.5	<7.5	<14.9	<7.5	<14.9	<7.5
SW-17 (0-.0.5)	04/10/2020	14	<5.1	<5.1	<5.1	<10.3	<5.1	<10.3	<5.1
SW-17 (0.5-1.0)	04/10/2020	26.5	<4.7	<4.7	<4.7	<9.4	<4.7	<9.4	<4.7
SW-17 (1.0-2.0)	04/10/2020	27.8	<5.1	<5.1	<5.1	<10.3	<5.1	<10.3	<5.1
QC Sample Results									
SW-DUP1-SED (SW-12)	12/19/2018	20.1	<4.4	<4.4	<4.4	<8.7	<4.4	<8.7	<4.4
SW-13A (0-0.5) DUP	03/02/2020	71.8	<22.1	<22.1	<22.1	<44.2	<22.1	<44.2	<22.1

	8260B (Other VOC)							8270D (PAH)			
Analytical Parameter	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Chloroform	Methylene chloride	p-Isopropyltoluene	Styrene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene
Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EPA RSL for Industrial Soil	190,000,000	140,000,000	670,000,000	1,400	1,000,000	NE	NE	17,000	73,000	3,000,000	45,000,000
EPA RSL for Residential Soil	27,000,000	33,000,000	61,000,000	320	57,000	NE	NE	3,800	18,000	240,000	3,600,000
Sample ID	Analytical Results							Analytical Results			
SW-01-SED	**12.7 j**	**12 j,B**	**211**	**4.3 j,B**	**18.2 j**	**5.2 j**	<9.6	**2.7 j,B**	**7.5 j,M1**	**12.3 j,M1**	**10 j,M1**
SW-02-SED	<242	<121	**35.8 j**	<12.1	<48.5	<12.1	<12.1	**8 j**	**4 j**	**5.9 j**	**2.5 j**
SW-03-SED	<156	**10.5 j,B**	**251**	<7.8	<31.3	<7.8	<7.8	**2.7 j**	**57.2**	**90.5**	**218**
SW-04-SED	**31.1 j**	<198	**738**	**9.1 j,B**	**62.3 j**	<19.8	<19.8	**14.4 j**	**11.3 j**	**11.5 j**	**28.5 j**
SW-05-SED	**17.1 j**	<132	**455**	**5.9 j,B**	**14.8 j**	<13.2	<13.2	**14.2 j,B**	**8.6 j**	**9.3 j**	<28.7
SW-06-SED	**11.5 j**	<130	**183 j**	**5.2 j,B**	**14.1 j**	<13	<13	<13	**54.7**	**83.9**	**55.5**
SW-07-SED	<155	<77.7	<155	<7.8	<31.1	<7.8	<7.8	<7.8	<451	<451	<451
SW-08-SED	<97.6	<48.8	<97.6	<4.9	<19.5	<4.9	<4.9	<4.9	<420	<420	<420
SW-09-SED	<124	<62.1	<124	<6.2	<24.8	<6.2	<6.2	<6.2	<423	<423	<423
SW-10-SED	<88.8	<44.4	<88.8	<4.4	<17.8	<4.4	<4.4	<4.4	<420	<420	<420
SW-11-SED	<101	<50.3	<101	<5	<20.1	<5	<5	<5	<449	<449	<449
SW-12-SED	<88.1	<44.1	<88.1	<4.4	<17.6	<4.4	<4.4	<411	<411	<411	<411
SW-13 (0-0.5)	<242	<121	**68.3 j**	<12.1	<48.4	<12.1	<12.1	**192 j**	<470	<470	<470
SW-13 (0.5-1)	<170	<85.2	<170	<8.5	<34.1	<8.5	<8.5	<8.5	<482	<482	<482
SW-13 (1-2)	<163	<81.7	<163	<8.2	<32.7	<8.2	<8.2	<8.2	<510	<510	<510
SW-13A (0-0.5)	<437	<218	**65.5 j**	<21.8	<87.4	<21.8	<21.8	**379 j**	<1,300	<1,300	<1,300
SW-13A (0.5-1)	<402	<201	**59.5 j**	<20.1	<80.3	<20.1	<20.1	<933	<933	<933	<933
SW-14 (0-0.5)	<197	<98.7	<197	<9.9	<39.5	<9.9	<9.9	<9.9	<514	<514	<514
SW-14 (0.5-1)	<155	<77.3	**81.2 j**	<7.7	<30.9	<7.7	<7.7	<7.7	<504	<504	<504
SW-14 (1-2)	<181	<90.6	**252**	<9.1	<36.2	<9.1	<9.1	<9.1	<429	<429	<429
SW-14 (2-3)	NA	NA	NA	NA	NA	NA	NA	<487	<487	<487	<487
SW-14A (0-0.5)	<625	<313	<625	<31.3	<125	<31.3	<31.3	**2,180 j**	<6,640	<6,640	<6,640
SW-15 (0-0.5)	<275	<137	**48.8 j**	<13.7	<54.9	<13.7	<13.7	<13.7	<789	<789	<789
SW-15 (0.5-1)	<201	<101	**39 j**	<10.1	<40.3	<10.1	<10.1	<10.1	<3,230	<3,230	<3,230
SW-16 (0-0.5)	<393	<196	**184 j**	<19.6	<78.6	<19.6	<19.6	**240 j**	<657	<657	<657
SW-16 (0.5-1)	<412	<206	**104 j**	<20.6	<82.3	**23.3**	<20.6	<20.6	<553	<553	<553
SW-16 (1-2)	<124	<62	<124	<6.2	<24.8	<6.2	<6.2	<6.2	<488	<488	<488
SW-16 (2-3)	<149	<74.5	**21.7 j**	<7.5	<29.8	<7.5	<7.5	<7.5	<467	<467	<467
SW-17 (0-.0.5)	<103	<51.4	<103	<5.1	<20.6	<5.1	<5.1	<5.1	<3,900	<3,900	<3,900
SW-17 (0.5-1.0)	<94	<47	**23.6 j,M1**	<4.7	<18.8	<4.7	<4.7	<4.7	<2,270	<2,270	<2,270
SW-17 (1.0-2.0)	<103	<51.4	**37.6 j**	<5.1	<20.6	<5.1	**2.7 j**	<5.1	<462	<462	<462
QC Sample Results											
SW-DUP1-SED (SW-12)	<87.1	<43.5	<87.1	<4.4	<17.4	<4.4	<4.4	<4.4	<419	<419	<419
SW-13A (0-0.5) DUP	<442	<221	<442	<22.1	<88.4	<22.1	<22.1	<22.1	<1170	<1170	<1170

Prepared by: DAA Checked by: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Orange shading indicates that the compound was detected above the USEPA RSL industrial screening level
- Blue shading indicates that the compound was detected above the USEPA RSL residential screening level
% - Percent
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L2 - Analyte recovery in the laboratory control sample was below quality control limits. Results for this analyte in associated samples may be biased low.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
RSL - Regional Screening Level
S1 - Data review findings indicate result may be biased, however, data is usable.
USEPA - United States Environmental Protection Agency
VOA - volatile organic aromatics
VOC - volatile organic compound

TABLE 6-9
ANALYTICAL RESULTS SUMMARY - SEDIMENT
REMEDIAL INVESTIGATION REPORT
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)														8270D (Other SVOC)	
Analytical Parameter		Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	bis(2-Ethylhexyl)phthalate	Dibenzofuran
	Reporting Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
	EPA RSL for Industrial	NE	230,000,000	21,000	2,100	21,000	NE	210,000	2,100,000	2,100	30,000,000	30,000,000	21,000	NE	23,000,000	160,000	1,000,000
	EPA RSL for Residential	NE	18,000,000	1,100	110	1,100	NE	11,000	110,000	110	2,400,000	2,400,000	1,100	NE	1,800,000	39,000	73,000
Sample ID	Sample Collection Date	Analytical Results														Analytical Results	
SW-01-SED	03/19/2019	**113 M1**	**60.2 M1**	**296 M1**	**295 M1**	**358 M1**	**189 M1**	**155 M1**	**266 M1**	**57.1 M1**	**351 M1**	**17.2 j,M1**	**169 M1**	**91 M1**	**488 M1**	<7,390	<7,390
SW-02-SED	03/22/2019	**15 j**	**15.4 j**	**63.9**	**61.5**	**77.7**	**27.4**	**31.4**	**66.5**	**9.7 j**	**90.2**	**3.8 j**	**26.6**	**32.9**	**88.2**	<7,390	<7,390
SW-03-SED	03/19/2019	**31.8**	**459**	**909**	**599**	**1,050**	**334**	**321**	**890**	**132**	**1,910**	**259**	**328**	**1,730**	**1,450**	<4,740	<4,740
SW-04-SED	03/19/2019	**140**	**90.4**	**432**	**415**	**537**	**210**	**212**	**421**	**65.2**	**628**	**35.1**	**188**	**195**	**776**	<4,960	<4,960
SW-05-SED	03/19/2019	**139**	**115**	**1,030**	**584**	**813**	**278**	**281**	**1,240**	**110**	**889**	**26.7 j**	**224**	**850**	**1,980**	<9,350	<9,350
SW-06-SED	03/19/2019	**418**	**714**	**2,160**	**1,840**	**2,170**	**733**	**715**	**1,910**	**256**	**3,400**	**207**	**772**	**2020**	**2,990**	<7,600	<7,600
SW-07-SED	12/19/2018	<451	<451	<451	<451	<451	<451	<451	<451	<451	**106 j,L2**	<451	<451	<451	**90 j,L2**	<451	<451
SW-08-SED	12/19/2018	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420
SW-09-SED	12/19/2018	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423	<423
SW-10-SED	12/19/2018	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420	<420
SW-11-SED	12/19/2018	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449	<449
SW-12-SED	12/19/2018	**106 j,L2,M0**	**167 j,L2,M0**	**503 j,S1,L2,M0**	**435 L2,M0,S1**	**562 L2,M0,S1**	**183 j,L2,M0**	**236 j,L2,M0**	**490 L2,M0,S1**	<411	**822 L2,M0,S1**	<411	**186 j,L2,M0**	**217 j,L2,M0**	**791 L2,M0,S1**	<411	<411
SW-13 (0-0.5)	03/02/2020	**287 j**	**490**	**1,720**	**1,680**	**1,870**	**1,030**	**748**	**1,530**	<470	**3,010**	<470	**876**	**1,280**	**2,860**	<470	<470
SW-13 (0.5-1)	03/02/2020	**142 j**	<482	**597**	**615**	**683**	**391 j**	**279 j**	**529**	<482	**942**	<482	**326 j**	**201 j**	**819**	<482	<482
SW-13 (1-2)	03/02/2020	<510	<510	**172 j**	<510	<510	<510	<510	**163 j**	<510	**301 j**	<510	<510	<510	**269 j**	<510	<510
SW-13A (0-0.5)	03/02/2020	**516 j**	**1,100 j**	**1,990**	**1,860**	**2,160**	**1,040 j**	**902 j**	**1,810**	<1,300	**4,530**	**449 j**	**898 j**	**2,380**	**4,060**	<1,300	<1,300
SW-13A (0.5-1)	03/02/2020	<933	<933	**432 j**	**421 j**	**469 j**	<933	<933	**396 j**	<933	**875 j,R1**	<933	<933	**389 j**	**901 j,R1**	<933	<933
SW-14 (0-0.5)	03/02/2020	<514	<514	<514	<514	<514	<514	<514	<514	<514	**182 j**	<514	<514	<514	**192 j**	<514	<514
SW-14 (0.5-1)	03/02/2020	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504
SW-14 (1-2)	03/02/2020	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429
SW-14 (2-3)	03/02/2020	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487
SW-14A (0-0.5)	03/02/2020	**3,360 j**	**10,500**	**22,800**	**20,800**	**23,200**	**11,400**	**8,810**	**19,700**	<6,640	**44,500**	**3,230 j**	**10,400**	**28,600**	**43,400**	<6,640	<6,640
SW-15 (0-0.5)	03/01/2020	<789	<789	**593 j**	**573 j**	**613 j**	<789	<789	**515 j**	<789	**968**	<789	<789	**296 j**	**879**	<789	<789
SW-15 (0.5-1)	03/01/2020	**1,540 j**	**3,580**	**8,320**	**8,060**	**8,970**	**4,600**	**3,390**	**7,280**	<3,230	**16,300**	**1,420 j**	**4,040**	**10,400**	**16,100**	<3,230	<3,230
SW-16 (0-0.5)	03/01/2020	**566 j**	**1,910**	**4,710**	**3,970**	**4,540**	**2,210**	**2,070**	**4,040**	<657	**11,400**	**412 j**	**2,000**	**6,630**	**8,250**	<657	**242 j**
SW-16 (0.5-1)	03/01/2020	<553	<553	**824**	**739**	**827**	**337 j**	**358 j**	**720**	<553	**1,080**	<553	**338 j**	**143 j**	**962**	<553	<553
SW-16 (1-2)	03/01/2020	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488
SW-16 (2-3)	03/01/2020	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	**246 j**	<467
SW-17 (0-.0.5)	04/10/2020	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900	<3,900
SW-17 (0.5-1.0)	04/10/2020	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270	<2,270
SW-17 (1.0-2.0)	04/10/2020	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462	<462
QC Sample Results																	
SW-DUP1-SED (SW-12)	12/19/2018	<419	<419	**145 j,S1,L2,M0**	**162 j,L2,M0,S1**	**213 j,L2,M0,S1**	**124 j,L2,M0**	**92 j,L2,M0**	**141 j,L2,M0,S1**	<419	**230 j,L2,M0,S1**	<419	**104 j,L2,M0**	<419	**197 j,L2,M0,S1**	<419	<419
SW-13A (0-0.5) DUP	03/02/2020	**342 j**	**520 j**	**1,020 j**	**978 j**	**976 j**	**545 j**	<1,170	**935 j**	<1,170	**2,340**	<1,170	<1,170	**1,060 j**	**1860**	<1170	<1170

Prepared by: DAA Checked by: JPC

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Orange shading indicates that the compound was detected above the USEPA RSL industrial screening level
- Blue shading indicates that the compound was detected above the USEPA RSL residential screening level
% - Percent
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
B - Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to blank contamination.
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
L2 - Analyte recovery in the laboratory control sample was below quality control limits. Results for this analyte in associated samples may be biased low.
M0 - Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Polycyclic aromatic hydrocarbon
RSL - Regional Screening Level
S1 - Data review findings indicate result may be biased, however, data is usable.
USEPA - United States Environmental Protection Agency
VOA - volatile organic aromatics
VOC - volatile organic compound