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FOCUSED FEASIBILITY STUDY, REVISION 1

CSXT BRAMLETT ROAD SITE

400 East Bramlett Road, Greenville, South Carolina

VCC 16-5857-RP

Prepared for

Duke Energy Carolinas, LLC

526 South Church St.

Charlotte, North Carolina 28202

Prepared by

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Titusville, Florida 32780

Project FR7559C

October 2023

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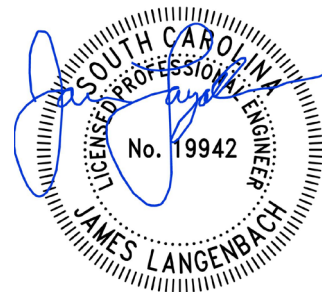
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ACRONYMS AND ABBREVIATIONS

ANFEMP	Air, Noise and Fugitive Emissions Monitoring and Mitigation Plan
ARAR	applicable, relevant, and appropriate requirement
bcy	bank cubic yards
BMP	best management practice
C&D	construction and demolition
COC	constituent of concern
CSM	conceptual site model
CSXT	CSX Transportation
CWG	carbureted water gas
DNAPL	dense nonaqueous-phase liquid
FEMA	Federal Emergency Management Agency
FFS	focused feasibility study
ft	foot/feet
ft amsl	foot/feet above mean sea level
ft bls	foot/feet below land surface
ft/day	foot/feet per day
ft ²	square foot/feet
HHRA	human health risk assessment
ISB	in situ bioremediation
ISCO	in situ chemical oxidation
ISS	in situ stabilization
LECE	Legacy Early College Elementary
LUC	land use controls
MCL	maximum contaminant level
MGP	Manufactured Gas Plant
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
NAPL	nonaqueous-phase liquid
NCP	National Contingency Plan
O&M	operation and maintenance

OSHA	Occupational Safety and Health Administration
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PPE	personal protective equipment
PRG	preliminary remediation goal
psi	pounds per square inch
RAO	remedial action objective
RI	remedial investigation
RIR	remedial investigation report
RIR-A	remedial investigation report addendum
ROD	Record of Decision
RPM10	respirable particulate matter
RSL	regional screening level
RSV	Regional Screening Value
SCDHEC	South Carolina Department of Health and Environmental Control
SVOC	semivolatile organic compound
TBC	to be considered
UCS	unconfined compressive strength
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UDGS	United States Geological Survey
VCC	Voluntary Cleanup Contract
VOC	volatile organic compound

1. INTRODUCTION

This Focused Feasibility Study (FFS) report has been prepared by Geosyntec Consultants, Inc. (Geosyntec) on behalf of Duke Energy Carolinas, LLC (Duke Energy) for the CSXT Bramlett (also spelled Bramlette) Road Site located at 400 East Bramlett Road in Greenville, South Carolina (Site). This FFS report was prepared pursuant to the Responsible Party 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 VCC obligates Duke Energy to prepare and submit for SCDHEC approval a Remedial Investigation Report (RIR). Item 3.C of the VCC also obligates Duke Energy, as determined necessary by SCDHEC, to conduct a feasibility study or other evaluation of remedial and/or removal alternatives for addressing manufactured gas plant (MGP)-related impacts. SynTerra Corp. (SynTerra) completed the RIR for the Site in June 2020 (SynTerra 2020) and a RIR Addendum (RIR-A) in July 2021 (SynTerra 2021). The RIR-A was approved by SCDHEC by letter dated 27 January 2022. The RIR and RIR-A define the nature and extent of impacted media and assess human and ecological risks which are addressed in this FFS.

A work plan for the FFS was submitted to SCDHEC in August 2022 (Geosyntec 2022). In correspondence dated 17 November 2022, SCDHEC approved the FFS work plan and requested that the Site be divided into two operable units (OUs) for remedial evaluation, which included 1) soil and sediment, and 2) surface water and groundwater. As such, OU-1 includes soil and sediment, and OU-2 is defined as surface water and groundwater. Groundwater has been separated into two OUs. OU-2 is defined as surface water and shallow- and transition-zone groundwater (approximately 4–40 feet below land surface [ft bls]). OU-3 is defined as groundwater within the deeper fractured bedrock at depths greater than approximately 40 ft bls. Because there is a limited historical data set for groundwater in the deeper fractured bedrock, OU-3 will be excluded from this FFS and addressed separately in the future following completion of the remedy and a period of post-construction monitoring. This FFS report focuses on OU-1 and OU-2.

1.1 Objectives

This FFS has been prepared in accordance with the August 2022 FFS work plan (Geosyntec 2022) which was approved by SCDHEC in their letter dated 17 November 2022. Objectives of this FFS for each OU are to (i) identify and screen remedial technologies, (ii) develop, screen, evaluate, and compare alternatives to remediate MGP-related impacted media, (iii) provide the SCDHEC with the results of the remedial alternative evaluation, and (iv) support SCDHEC in selecting the most appropriate cleanup action for the Site.

2. BACKGROUND

2.1 General Site Information

The Site location, relative to the surrounding area, is depicted on **Figure 2-1**. The Site setting and history have been covered extensively in prior documents such as the RIR (SynTerra 2020) and the RIR-A (SynTerra 2021). The following subsections summarize key information from the RIR and RIR-A.

2.1.1 Site Description

The Site as defined by the VCC is comprised of five parcels (Parcels 1 through 5) and a portion of the Legacy Early College Elementary (LECE) School property that total approximately 35 acres. The boundary includes the western edge of the LECE School parking lot based on the results of the RIR. The Site is bounded by the CSX Transportation (CSXT) railroad corridor to the north, west, and south, and by West Washington Street and the Greater Greenville Sanitation Department to the east. In addition to the railroad corridor, the Reedy River and Swamp Rabbit Trail also define the western boundary (**Figure 2-2**) (SynTerra 2021). General information for each parcel is provided in **Table 2-1**.

The topography of the area generally slopes south-southwest toward the Reedy River. Parcel 1, which includes the former Bramlette MGP east of the Reedy River, ranges in elevation from 932 to 944 feet above mean sea level (ft amsl) and slopes to the southwest. Parcel 2 elevations vary and slope generally to the west, but the topography is also controlled by drainage ditches that flow from the north to the south under East Bramlett Road. These ditches continue through Parcel 3 and eventually to Parcels 4 and 5, until ultimately joining the Reedy River near Willard Street to the south. The topography of Parcel 3 is altered by the Vaughn landfill. Historically, however, this parcel ranged in elevation from 925 to 930 ft amsl and included low-lying wetlands, with the general slope of the topography being toward the south-southeast. Parcels 4 and 5 are dominated by low-lying wetlands and waters associated with United States Army Corps of Engineers (USACE) jurisdictional wetlands and waters of the United States. Water from these parcels flows to the southeast, where it enters a lined drainage channel and then drains to the Reedy River.

2.1.2 Brief Site History

Southern Public Utilities built the MGP on East Bramlett Road in 1917. Duke Energy, then known as the Duke Power Company, assumed ownership and operation of the MGP in 1939 but then sold it to Piedmont Natural Gas in 1951. Between 1963 and 1967, ownership of Parcels 1–5 was transferred to the Seaboard Coast Line Railroad Company, a predecessor of CSXT.

Gas was manufactured at the Bramlette MGP from 1917 to 1952. A total of 5.5 billion cubic feet of gas was produced, 99% of which was predominantly via the coal gas process and smaller amounts in later years beginning around 1945 via the carbureted water gas (CWG) process. Tar was a byproduct waste stream in both manufacturing processes, with coal tar originating from bituminous coal and CWG tar originating from oil used to carburet the gas. CWG tar was only ~0.3% of the total gas production meaning that nearly all tar production at the MGP was coal tar. Volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) associated with the coal tar and CWG tar have been the main constituents of concern (COCs) subject to

investigation. Both types of tar are non-aqueous phase liquid (NAPL) and are interchangeably referred to as NAPL in this FFS report.

An interim removal action was implemented at the Site by Duke Energy beginning in July 2001 and extending through December 2002. Excavation and backfilling were performed across approximately 3.8 total acres. The extents of the removal action are shown on **Figure 2-1**. Excavated depths ranged from 3 to 12 ft with removal of tar-impacted materials including a tar tank and tar wells associated with the former MGP (SynTerra 2020). In total, 61,088 tons of contaminated soil and debris were excavated, screened and shipped off-Site for treatment and/or disposal. Of this material, 27,144 tons of screened debris material was transported for disposal to the Waste Management – Palmetto Landfill (Welford, South Carolina). Approximately 33,944 tons of soil material was transported to the Southeastern Soil Recovery facility in Laurens County, South Carolina for thermal treatment. In total, approximately 33,926 tons of treated material was then returned for use a backfill (Duke Energy 2003).

2.1.3 Vaughn Landfill History

The Vaughn landfill is an unpermitted construction and demolition (C&D) debris landfill that occupies approximately 6.3 acres on Parcel 3 (**Figure 2-2**). Beginning in 1988, Vaughn Construction created the unpermitted landfill by placing C&D debris (including concrete, brick, wood, plastic, roofing materials, insulation, and glass) onto Parcel 3. During the RI (2019-2020), C&D debris was encountered in the Vaughn landfill area from land surface to a maximum depth of approximately 10 ft bls. Based on the measured depths of landfill materials, an estimated 84,000 cubic yards (or approximately 150,000 tons) of C&D debris is contained in the Vaughn landfill area. Observations from soil borings conducted on the landfill during an initial investigation in 1995 identified NAPL underlying the C&D waste. In some areas of the landfill, the topography and the instability of landfilled materials have limited investigatory access to the underlying soils, sediment, and groundwater on Parcel 3.

In correspondence from SCDHEC to the USACE dated February 26, 2001 regarding the Vaughn landfill, it was noted that removal of the landfill debris was not recommended and only continued groundwater monitoring near the landfill was required from a regulatory perspective. This recommendation was based on SCDHEC’s evaluation of Site characteristics and Site risk conditions known at that time (in 2001). The 2001 letter from SCDHEC included the following summary conclusions:

- The MGP-related NAPL is viscous and relatively non-mobile.
- The areal extent of constituents in groundwater was 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.

As part of a wetland mitigation project, CSXT restored a section of the Long Branch in Greenville to address the unpermitted landfill in the flood plain on Parcel 3, which constituted a Clean Water

Act violation. In 2007, Individual Permit #2004-1V-086 was issued by the USACE for the wetland mitigation work, and CSXT completed the Long Branch stream restoration in 2008.

The RIR and RIR-A investigations provided data which expanded upon the characteristics of the conceptual site model (CSM) since 2001 on several important elements, including the location of the historic drainage ditch system (**Figure 2-3**) and the extent and distribution of NAPL impacts. The amount and extent of MGP-related residuals in sediment, soil, and groundwater media (including the presence of NAPL in bedrock [OU-3]) was not known at the time of the February 2001 SCDHEC letter.¹ Therefore, this FFS report evaluates the removal of a portion of the Vaughn landfill unpermitted debris wastes.

Additional discussion of the nature and extent of impacts is provided in Section 3.2 of this FFS report.

2.1.4 Sediment Forensics and Surface Water

Data collected as part of the RIR-A (SynTerra 2021) included polycyclic aromatic hydrocarbon (PAH) forensics analysis. Multiple sediment samples were collected on and near the Site to determine the source(s) of PAH compounds within sediments at various locations. In general, the objective of the study was to evaluate whether MGP-related environmental impacts were present at off-Site locations within sediment and surface water. Findings from the sampling and forensics analysis are detailed in the *Forensics Analysis of NAPL, Sediments, and Soil Samples Collected from the Former Bramlette Road MGP Site and Surrounding Areas* report prepared by Corporate Environmental Solutions, LLC (December 2020) and are summarized below:

- MGP-related impacts (e.g., NAPL) were observed in some on-Site sediments in ditch assessment samples collected from Parcel 3, Parcel 4, and Parcel 5. Forensic analysis indicated pyrogenic sources consistent with CWG tar and coal tar. Total PAH concentrations in sediments where NAPL is present ranged from approximately 10 to 100 milligrams per kilogram (mg/kg).
- PAHs detected in sediment samples from ditches upgradient of the Site (e.g., along Washington Street) were consistent with urban background concentrations attributable to urban runoff and are unrelated to the former MGP. Total PAH concentrations in these sediments were on the order of approximately 1 to 10 mg/kg.
- PAHs detected in any of the Reedy River or off-Site sediment samples can be attributed to background conditions associated with urban runoff, unrelated to the former MGP. Total PAH concentrations in off-Site Reedy River sediments were generally less than 1 mg/kg.

Surface water monitoring results (inclusive of RIR data and data obtained via semiannual groundwater and surface water monitoring activities conducted following the RIR-A) indicate the following:

¹ The 26 February 2001 correspondence from SCDHEC to CSXT advised the USACE that removal of the C&D debris was not recommended because it would likely result in the destruction of unaltered wetlands. The correspondence also suggested off-site mitigation to address CSXT's Clean Water Act violation.

- Surface water samples collected from the Reedy River have not contained VOCs or SVOCs at concentrations greater than reporting limits or applicable regulatory criteria as discussed in the RIR.
- No VOCs or SVOCs were detected at concentrations greater than method detection limits (MDLs) in surface water samples collected from Parcel 4 and Parcel 5.
- SVOCs (specifically benzo(a)pyrene) were detected in surface water samples collected on Parcel 3, limited to areas adjacent to the Vaughn landfill, at concentrations above the applicable regulatory standards. The detections above applicable standards were limited to two sampling events in 2021 only.
- VOCs and SVOCs in surface water samples collected downstream of the Vaughn landfill continued to be less than screening criteria.

2.1.5 Site Operable Units

The RIR and RIR-A concluded that MGP-related impacts at the Site vary in respect to location, media, and physical characteristics. It is important to understand these variations when considering the alternatives presented in this FFS. The remedial alternatives developed in this FFS report include provisions for areas impacted by MGP residuals, except for areas defined as OU-3. A summary of each OU is provided below:

- OU-1: Soil and sediments.
- OU-2: Surface water, and groundwater within the shallow-zone and transition-zone (saturated depths of approximately 4-40 ft bls).
- OU-3: Groundwater within the deeper fractured bedrock (depths greater than approximately 40 ft bls).

The Site is comprised of five parcels and includes a portion of the LECE School property. The parcels are grouped according to similarities in COCs and/or MGP residuals type, location, or media to help develop manageable remedial alternatives for OU-1. Accordingly, the OU-1 media (sediment and soil) have been grouped into the following four areas for subsequent discussion in this FFS, as follows:

- Parcels 1 and 2 include the portion of the Site north of East Bramlett Road.
- Parcel 3 includes the Vaughn landfill and associated CSXT property.
- The LECE School property is the wetland area west of the school building.
- Parcels 4 and 5 include the wetlands and historical drainage ditch area south of Parcel 3, which ultimately discharges via a lined drainage channel to the Reedy River.

OU-2 includes groundwater in the shallow and transition flow zones (approximately 4 to 40 ft bls) and is not defined by parcel boundaries. Because seasonal groundwater level fluctuation results in the shallow zone water table intercepting the land surface in the wetland areas, surface water is

also grouped under OU-2. Groundwater impacted media within the deeper fractured bedrock (greater than 40 ft bls) has been grouped under OU-3 and is not the focus of this FFS report.

2.1.6 Potential Exposures to Human Receptors

The human health risk assessment (HHRA) in Section 7.2 and Appendix L of the RIR (SynTerra 2020) identified populations that could have been exposed to contaminants, including CSXT workers, trespassers, and recreators. The HHRA provides the following CSM characteristics to evaluate risk to human receptors:

- Sources: materials from historical MGP operations, including coal tar and CWG
- Release Mechanisms: percolation, leaching, and flooding (e.g., surface water runoff)
- Transport Media: soil, shallow- and transition-zone groundwater, surface water, sediment, and deep bedrock groundwater
- Potential Exposure Points: nonresidential properties, the Reedy River, and groundwater as a source of drinking water
- Potential Exposure Routes: incidental soil ingestion, incidental groundwater ingestion, dermal contact with groundwater, incidental surface water ingestion, and incidental sediment ingestion of dermal contact with sediment
- Potential Receptors: current and future Site workers, trespassers, and recreators

2.1.7 Potential Exposure to Ecological Receptors

As discussed in Section 7.3 and Appendix L of the RIR (SynTerra 2020), the ecological risk assessment involved an analysis of potential adverse effects on ecological receptors (i.e., species of plants or animals) associated with the Site. An ecological risk assessment identifies and characterizes the toxicities of contaminants of potential ecological concern, potential exposure pathways, potential ecological receptors, and the likelihood of adverse ecological effects under current and reasonably anticipated future land and water use conditions.

The ecological risk assessment used an ecological conceptual exposure model developed for the Site to focus on the most plausible ecological receptors and pathways in an ecological CSM. The ecological risk assessment provides the following CSM characteristics to evaluate potentially complete ecological exposure pathways:

- Sources: materials from MGP operations, including coal tar and CWG
- Release Mechanism: infiltration, stormwater runoff, and migration to surface water and sediment
- Transport Media: soil, groundwater, surface water, and sediment
- Potential Exposure Points: soil, biotic tissue, surface water, and sediment
- Potential Exposure Routes: incidental soil ingestion, direct soil contact, biotic tissue ingestion, surface water ingestion, and direct contact

- Potential Receptors: aquatic and terrestrial receptors

3. SITE CHARACTERISTICS

The following provides a summary of the characteristics. This includes a summary of the geology and hydrology, and the current nature and extent of the COCs.

3.1 Geology and Hydrogeology

3.1.1 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 north of the Reedy River fault zone and within the Sixmile thrust sheet (Willoughby et al. 2005). Bedrock geology in this region consists of granite gneiss and sillimanite-mica schist (Nelson et al. 1998).

In general, the geology of the Piedmont is composed of a regolith-fractured rock system that includes regolith, a transition zone, and bedrock (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 because it is more permeable than the overburden or underlying bedrock (Harned and Daniel 1992).

3.1.2 Site Geology

The Site is within the Reedy River floodplain. Shallow soils include fill overlying alluvial soils consisting of lean clay and sands. Where fill is present, it varies in depth but extends to as deep as 8 ft bls on Parcel 1 where the former MGP was situated and where previous remedial excavation activities took place and on Parcel 2 to support various buildings and structures. On Parcel 3, the fill thickness varies based on the amounts of C&D debris that were landfilled and extends to depths of 10 ft in the south-central portion of the parcel. Fill material is generally absent on Parcel 4 and Parcel 5. Below the fill is alluvium, which is approximately 11 ft thick on average (i.e., from approximately 8 to 19 ft bls). The alluvium is underlain by saprolite, which ranges in thickness from approximately 1 to 21 ft (i.e., from approximately 19 to 40 ft bls). The transition zone, which consists of weathered bedrock present from 25 to 50 ft bls, is underlain by bedrock. The top of the bedrock ranges in depth from 30 to 50 ft bls. Bedrock under the Site consists of interbedded granite and sillimanite-mica schist. Details for each stratigraphic unit encountered are provided below:

Stratigraphic Unit		Flow Zone	Extent	Hydraulic Conductivity (feet per day)
Fill		Shallow (OU-1)	Laterally extensive in Parcel 2 and Parcel 3 (Vaughn landfill). Fill is present from land surface to depths of approximately 8 to 10 ft bls.	1–2.4 (geomean: 1.6)
Regolith	Alluvium	Shallow (OU-2)	Laterally extensive. Lean clay over coarse- to fine-grained sands. Alluvium is present from approximately 8 ft bls to 19 ft bls.	0.7–35 (geomean: 5.6)
	Saprolite	Shallow (OU-2)	Laterally extensive. Consists of weathered bedrock in situ that retains the fabric/structure of the bedrock but is not indurated or competent. Saprolite is generally present at 19 ft bls to 40 ft bls (varying thickness across the Site).	2.6–6.9 (geomean: 4)
Transition Zone		Transition Zone (OU-2)	Transition zone present at depths of 25–50 ft bls. Consists of heavily weathered and decomposed bedrock overlying more competent bedrock. Diminishing thicknesses to absent in the southern portion of the Site.	0.06–100 (geomean: 0.9)
Bedrock		Bedrock (OU-3)	Laterally extensive. Competent, fractured bedrock (granitic origin). Top of bedrock is encountered at depths ranging from 30–50 ft bls and extends to depths greater than 210 ft bls.	0.05–4 (geomean: 0.8)

The varying depths to the upper bedrock contact appear to represent areas where MGP residuals (e.g., NAPL) have accumulated and resulted in transport of contaminant mass vertically through and into bedrock fractures, which have resulted in deep groundwater bedrock impacts (OU-3).

Cross-section views of lithology and hydrostratigraphic units based on RIR and RIR-A data are presented as sections A-A' (Figure 3-1), B-B' (Figure 3-2), C-C' (Figure 3-3), D-D' (Figure 3-4), and E-E' (Figure 3-5).

3.1.3 Regional Hydrogeology

The regional groundwater system is an unconfined, interconnected aquifer system, which is characteristic of the Piedmont, and consists of a regolith-fractured rock network. Groundwater is recharged by drainage and rainfall infiltration in the uplands areas, which discharges to the perennial stream system. Groundwater flow in the regolith is typical of and consistent with porous media, while flow in the bedrock is primarily within secondary porosity features (e.g., fractures).

3.1.4 Site Hydrogeology

Site groundwater flow is generally controlled by the Reedy River, other drainages (on Parcels 4 and 5), and variations in the top of bedrock elevation. Groundwater flow direction is generally

southwest toward the Reedy River from Parcel 1. Groundwater is encountered within the alluvial and unconsolidated deposits from less than 1 ft bls up to approximately 12–14 ft bls. Groundwater occurs closer to the surface in the low-lying drainage that transects Parcel 1 and in and around the wetland environments (i.e., Parcel 3, Parcel 4, and Parcel 5). Groundwater occurs deeper where fill has been placed at the Vaughn landfill and along the banks of the Reedy River (e.g., the Swamp Rabbit Trail). Seasonal groundwater level fluctuation causes the shallow-zone groundwater table to intercept the land surface within the wetland areas during wet months of the year. **Figure 3-6** illustrates the September 2022 water level elevations and potentiometric surface for the shallow-zone groundwater system. **Figure 3-7** illustrates the September 2022 water level elevations and potentiometric surface for the transition-zone groundwater system. The 2022 groundwater gradients and flow directions are consistent with previous RI observations.

Groundwater is recharged by stormwater drainage and rainfall infiltration in the uplands areas and discharges to the perennial stream system. Groundwater flow velocity through the shallow and transition zones is derived from the horizontal hydraulic conductivity, the hydraulic gradient, and the effective porosities for each zone. Groundwater hydraulic conductivity for the shallow zone is calculated as 5.4 feet per day (ft/day) and 1.53 ft/day for the transition zone. Horizontal hydraulic gradients for the shallow groundwater zone and transition zone were calculated to be 0.03 ft/ft and 0.01 ft/ft, respectively (SynTerra 2021). The mean groundwater seepage velocity for the shallow groundwater zone has been calculated to be 0.44 ft/day, and 0.07 ft/day for the transition zone.

Vertical groundwater gradients between flow zones are generally neutral (SynTerra 2020). Long-term pressure transducer monitoring shows that groundwater levels in all flow zones correlate to precipitation events, which indicates a groundwater recharge response (SynTerra 2021). The wells along the Swamp Rabbit Trail appear to correlate with Reedy River staff gauge level changes, indicating connectivity between the shallow flow system and the Reedy River.

Bedrock fractures (OU-3) decrease in frequency and hydraulic aperture with depth (SynTerra 2020, SynTerra 2021). Fractures are predominantly shallow, dipping toward the northeast (SynTerra 2021). The upper 10 ft of the bedrock system is the most transmissive; the largest hydraulic fracture apertures are observed within the upper 10 ft of bedrock, according to Site-specific borehole geophysical data.

The bedrock-zone groundwater underlies the transition-zone groundwater and is connected to the overlying aquifer through fractures that intercept the base of the alluvial deposits and/or transition-zone unit. Overall, the hydraulic conductivity of the bedrock decreases with depth. The hydraulic conductivity of the bedrock ranges from 1.0×10^{-2} ft/day at depths of 20 to 60 ft below the top of bedrock to hydraulic conductivities on the order of 1.0×10^3 ft/day at a depth of approximately 10 ft below the top of bedrock (SynTerra 2020). Flow volumes and patterns are dictated by the degree to which the fractures are connected to each other and the hydraulic aperture widths. The hydraulic aperture width varies with depth but is generally larger in the shallow bedrock. Apertures were measured at approximately 0.024 inches in the upper 10 ft of bedrock as compared to 0.002 inches at a depth of 60 ft below the top of bedrock (SynTerra 2020). However, it should be noted that smaller hydraulic apertures ranging from approximately 0.002 to 0.004 inches were identified in some of the monitoring wells at depths less than 20 ft below top of bedrock (SynTerra 2020). These collective observations suggest that there are some locations where the NAPL transport through shallow bedrock would be limited. The flow of groundwater and, more importantly, the

transport of the COCs are controlled not only by groundwater forces but also by subsurface geology. Specifically, rises in the fractured bedrock surface elevation appear to limit transport of COCs west and south beyond Parcel 3.

There are multiple locations where the groundwater and surface water interface at ground level. Stormwater runoff from upgradient locations flows as surface water flows through a series of natural and manmade ditches, culverts, and wetland areas from upgradient locations. Two natural ditches leading from Parcels 1 and 2 transport surface water generally to the west, where they then turn south under East Bramlett Road and on to Parcel 3. Surface water through Parcel 3 runs through wetlands and natural drainages that have been modified over the years because of the installation of the Vaughn landfill. On Parcel 3, the surface water and groundwater interface frequently because of seasonal water level fluctuations. The course of surface water from Parcel 3 to Parcels 4 and 5 is generally confined to one natural drainage channel that flows to the southeast before turning to the southwest and discharging into the Reedy River via a concrete cloth-lined ditch.

3.1.5 Surface Water Hydrology

The Site's watershed is characterized by ephemeral or intermittent streams and wetlands that discharge rainfall from the surrounding areas to the Reedy River. Two ephemeral tributaries traverse Parcels 1 and 2 and run under East Bramlett Road to Parcel 3, where surface water flows through wetland areas. The two ephemeral streams eventually join in the middle of Parcel 3 and lead generally to the southeast as a single drainage flow through Parcels 4 and 5, ultimately discharging into the Reedy River.

3.2 Nature and Extent of Constituents of Concern

The RIR and RIR-A evaluated the nature and distribution of MGP-related impacts detected in soil, sediment, groundwater, and surface water (SynTerra 2020, SynTerra 2021). This FFS report groups impacted media into three OUs for the purpose of remedial evaluation. OU-1 and OU-2 are included for remedial evaluation in this FFS report. OU-3 (bedrock groundwater) will be evaluated in a separate report.

3.2.1 Operable Unit 1: Soil and Sediments

OU-1 includes soil and sediment on Parcels 1 through 5 and a portion of LECE School Property. A summary of the soil and sediment impacts on the various parcels is provided below. NAPL has been observed in shallow soil at various places throughout the Site, including within historical drainages, on the LECE School property, and below the Vaughn landfill debris material. **Figure 3-8** presents the distribution of NAPL based on RI data and soil borings.

3.2.1.1 Parcel 1 and Parcel 2

Parcels 1 and 2 underwent remediation in 2001–2002 that removed soils and debris impacted by MGP residuals. The footprint of the excavated area is shown on **Figure 3-8**. The United States Environmental Protection Agency (USEPA) industrial and residential regional screening levels (RSLs) are the standards for screening soil (USEPA 2022). NAPL was observed on Parcels 1 and 2, and PAHs were present at concentrations above residential screening criteria.

Parcels 1 and 2 are zoned as Industrial District (I-1) (**Table 2-1**). To evaluate the potential risk of industrial/commercial use of Parcels 1 and 2, human health risk estimation of surface soil data for a construction worker was completed by SynTerra (**Appendix A**). Based on the construction worker risk estimation, the total non-cancer hazard index is less than 1.0 and the cancer risk is 2.88×10^{-8} , which is less than the cancer risk threshold of 1×10^{-6} for Parcels 1 and 2. Parcels 1 and 2 in their current condition, without remedial activities, meet the criteria for industrial/commercial use with land use controls (LUCs).

Furthermore, based on the residential risk estimation scenario, removal and replacement of surficial soil within the 40 by 40-foot area around SA-SB-46 and the RI-SB-15 locations would result in a total non-cancer hazard index which is less than 1.0 and a cancer risk of 1.03×10^{-7} , which is less than the cancer risk threshold of 1×10^{-6} for Parcels 1 and 2. However, this removal is not required based on the current zoning of Parcels 1 and 2.

3.2.1.2 Parcel 3 and Legacy Early College Elementary School

Sediments and soils present on Parcel 3 and the LECE School property contain MGP residuals which include sorbed COCs and NAPL. VOCs and SVOCs are present in sediment samples at concentrations above the USEPA Region 4 sediment Regional Screening Value (RSV) where NAPL is observed. NAPL was identified in sediments in these areas at thicknesses exceeding 4.5 ft.

The nature and extent of MGP-related impacts within and adjacent to the former drainage ditch system (e.g., the drainage that was present during MGP operations) was investigated during the RIR and the RIR-A. **Figure 2-3** illustrates the locations of the former drainage ditch system. The RIR-A provided accumulated data to indicate that the former traces of the ditch system contain MGP-related residuals (e.g., coal tar, clinker, and slag). The results of the RIR-A indicate that the former ditch system is located directly underneath portions of the Vaughn landfill on Parcel 3 and ran through the wetland area of the LECE School property. As of 2001, it was reported that no MGP-related sheens or other signs of visible impacts had been noted or otherwise observed within the ditch system between the Vaughn landfill and the railroad embankment to the west of Parcel 3. However, the RIR and RIR-A assessment work concluded that sediments underneath and adjacent to the western edge of the Vaughn landfill material do contain MGP-related residuals such as NAPL, clinker, and slag. These findings differ from observations made prior to the early 2000's.

3.2.1.3 Parcels 4 and 5

The extent of the impacts on Parcels 4 and 5 are defined by the drainage ditch that enters Parcel 4 from Parcel 3 and exits Parcel 5 via the outfall to the Reedy River. Impacts from MGP residuals to the sediment within Parcels 4 and 5 are limited to COCs exceeding the USEPA Region 4 sediment RSVs and to NAPL, which were identified only in the drainage ditch system at thicknesses up to 4.5 ft. The presence of the NAPL on Parcels 4 and 5 was not characterized in 2001 and represents a significant change to the CSM with respect to the nature and extent of the MGP-related residuals since that time. This area was not part of characterization activities prior to the RI.

3.2.2 Operable Unit 2: Shallow- and Transition-Zone Groundwater and Surface Water

3.2.2.1 Constituents of Concern – Shallow- and Transition-Zone Groundwater

COCs in the shallow- and transition-zone groundwater include benzene, naphthalene, benzo(a)pyrene, and toluene, which are detected in these groundwater zones at concentrations above the drinking water maximum contaminant levels (MCLs) set by SCDHEC (SCDHEC Regulation 61-58 State Primary Drinking Water Standards, effective October 2014, Appendix B MCL and R.61-68, Water Classifications & Standards, effective June 27, 2014, groundwater classification as GB, Human Health drinking water MCLs provided in the Appendix of R.61-68).

NAPL is considered as a COC because NAPL (from the coal gas and CWG processes) contains VOCs and SVOCs that may partition into groundwater as aqueous phase compounds. These aqueous phase constituents include benzene and naphthalene (among other VOCs and SVOCs), which have been measured at concentrations exceeding regulatory cleanup standards. NAPL has been visually observed in monitoring wells and measurable amounts have accumulated in two monitoring wells; dense nonaqueous-phase liquid (DNAPL) has been observed in shallow-zone well MW-03 and transition-zone well MW-20. DNAPL has a propensity to sink below the water table because its overall density is greater than water. The DNAPL will migrate vertically through the unsaturated zone until it encounters the water table. Once the DNAPL 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 the NAPL present within the coarse sand atop the saprolite on Parcels 2 and 3 and the distribution of dissolved COCs within groundwater (SynTerra 2020). Visual observations of NAPL have been identified within the clay deposits near historical ditch traces and within the sandy deposits that directly overlie the saprolite on Parcels 1, 2, and 3. Coarse sand deposits provide a relatively porous overburden matrix for the accumulation of residual NAPL while the less permeable saprolite matrix inhibits additional downward migration. These MGP residual impacts have resulted in the elevated benzene and naphthalene concentrations in groundwater at wells MW-01, MW-02TZ, MW-20, MW-29TZ, and MW-36S.

The RIR and RIR-A provide data and evidence that NAPL is present in soils, saprolite, and bedrock media underlying a portion of the Vaughn landfill. Monitoring wells MW-20, MW-3 and MW-49BR, all located within the footprint of the Vaughn landfill on Parcel 3, have contained NAPL in measurable thicknesses. This FFS will evaluate the feasibility of removing a portion of CSXT's Vaughn landfill materials to remediate the underlying NAPL within sediments (OU-1) and OU-2 (excluding deeper bedrock [OU-3]), which will depend on the remedial alternative ultimately selected by SCDHEC. Duke Energy was not responsible for placing the landfill materials that overlie both the historic drainage ditch system and the native alluvial materials that contain NAPL.

Multiple rounds of groundwater sampling since 2019 have provided data to delineate the extent of impacted shallow-zone groundwater to Parcels 1 and 3 and a small portion of the LECE School property. **Figure 3-9** presents the current distribution of COCs (dissolved phase benzene and naphthalene) within shallow-zone groundwater. **Figure 3-10** presents the current distribution of COCs (dissolved benzene and naphthalene) within transition-zone groundwater. These are the groundwater areas to be considered for remedial evaluation in this FFS report.

Geosyntec conducted Mann-Kendall Tests for statistical trends on 16 monitoring well data sets to quantitatively evaluate the temporal stability of select VOC and PAH compounds (as groundwater concentrations) in the Site aquifers. The trend analyses included the groundwater monitoring data from samples collected starting in 2019 and up through September/October 2022. Benzene and naphthalene were used as VOC and PAH “indicator” compounds, respectively. The analysis assumes that trends associated with benzene and naphthalene are applicable to other Site COCs. The Mann-Kendall trend analyses indicate that benzene and naphthalene concentrations in groundwater (where concentration data sets are currently viable with a minimum of four temporally spaced sampling events) are generally decreasing or stable (Geosyntec 2023). Of the 16 trend analyses completed, 13 of the location/compound pairs have 1 or more compounds with either decreasing or stable trend results. The MW-29TZ location/compound pair had no apparent trend for either constituent. Two bedrock wells (MW-21BRL and MW-29BR) indicated increasing concentrations of one or more compounds based on the data set.

3.2.2.2 Constituents of Concern – Surface Water

Historically, surface water has not contained COCs at concentrations above their respective screening levels, with the exception of two samples at one sample location. At this sample location (SW-5) benzo(a)pyrene was the only constituent detected above SCDHEC’s R.61-68, Water Classifications & Standards, effective June 27, 2014, established drinking water MCL in surface water during RI sampling. The most recent surface water sampling results (conducted in March 2022, September 2022, and March 2023) indicate no current COC exceedances (Geosyntec, 2023).

3.2.3 Operable Unit 3: Bedrock Groundwater

3.2.3.1 Constituents of Concern

The COCs within the bedrock groundwater are consistent with those observed in the shallow- and transition-zone groundwater. Bedrock groundwater included benzene and naphthalene at concentrations that exceed SCDHEC standards (SCDHEC Regulation 61-58 State Primary Drinking Water Standards, effective October 2014, Appendix B MCL and R.61-68, Water Classifications & Standards, effective June 27, 2014, groundwater classification as GB, drinking water Human Health MCLs provided in the Appendix of R.61-68). NAPL is also considered a COC as it has been observed in monitoring wells screened in the bedrock groundwater zone. **Figure 3-11** presents the current distribution of COCs (dissolved phase benzene and naphthalene) within OU-3. Remedial evaluation for bedrock-zone groundwater is not included in this FFS report. Additional semiannual groundwater monitoring for longer-term concentration trends will be required for a detailed analysis of bedrock-zone remedial technologies. Thus, a separate FFS for OU-3 will be developed under separate cover.

4. REMEDIAL ACTION OBJECTIVES AND REMEDIAL GOALS

The following sections present the remedial action objectives (RAOs) for OU-1 (soil and sediment) and OU-2 (shallow- and transition-zone groundwater and surface water), a summary of risk assessment approach and findings, and preliminary remediation goals (PRGs). The RAOs are based on the human health and ecological CSMs which were developed in the RIR. Factors considered in development of the RAOs included the affected media and uses, zoning, and physical locations. The PRGs are derived from the human and ecological risk assessments in the RIR and the chemical-specific applicable, relevant, and appropriate requirements (ARARs).

4.1 Remedial Action Objectives

When the RAOs are achieved, human health and the environment will be adequately protected. The RAOs selected for the Site as a whole will be satisfied when the COCs identified for each parcel in Section 3.2 meet their remedial goals.

4.1.1 OU-1: Soil and Sediments

For the FFS, soils are weathering profiles that develop in place and sediments are from depositional environments or locations where standing water was routinely observed. The Site's operational history and CSM for Parcels 3, 4, 5 and the LECE School property indicate these areas have previously been formed by deposition and that the sorbed COCs and NAPL are in the vicinity of the historical ditch footprint that transported the COCs and NAPL. Therefore, the media contained within these areas is considered sediment rather than soil. For Parcels 1 and 2, the media present developed in place or was placed during backfilling of the remedial efforts on Parcel 1 and is considered soil. These definitions effect the RAOs and PRGs for the various Parcels and areas of the Site.

The RAOs for OU-1 are as follows:

- RAO 1: Soils
 - Parcels 1 and 2: Remediate soil to Industrial/Commercial (I/C) criteria to comply with current land use. Parcels 1 and 2 in their current condition, without remedial activities, meet the criteria for I/C use with land use controls (LUCs). Based on the risk estimation, this RAO will be achieved with the formalization of LUCs.
 - Parcels 3, 4 and 5 and LECE School Property: As discussed earlier in the section, these areas of the Site only contain sediment that is of concern. Therefore, there is no soil RAO for these areas.
- RAO 2: Sediment
 - Parcels 1 and 2: As discussed earlier in the section, these parcels only contain soil that is of concern. Therefore, there is no sediment RAO for Parcels 1 and 2.
 - Parcels 3, 4, and 5 and LECE School Property: Remediate sediment to USEPA Region 4 sediment RSV and comply with current land use by removing sediment containing visual NAPL.

4.1.2 OU-2: Shallow and Transition Zone Groundwater and Surface Water

The RAOs for OU-2 are as follows:

- RAO 1: Prevent ingestion and/or contact with groundwater or surface water containing COCs at concentrations exceeding applicable MCLs or Site-specific remediation standards and restore the groundwater to unrestricted use, where practicable.
- RAO 2: Prevent groundwater containing COCs from impacting surface water at concentrations exceeding applicable MCLs or Site-specific remediation standards.

4.1.3 OU-3: Bedrock Groundwater

The groundwater impacts within the bedrock, inclusive of NAPL observations, were only recently identified during the RI. Because there is limited temporal data on the bedrock groundwater, this FFS does not include remedial alternatives to address impacts in the bedrock. Additional groundwater monitoring will be conducted by Duke Energy following completion of the remedy and a period of post-construction monitoring to obtain relevant COC trend and geochemical attenuation/degradation data for remedial evaluation of OU-3.

4.2 Preliminary Remediation Goals

This section presents the PRGs for sediment and groundwater for Parcels 3, 4, and 5 and LECE School Property, which are predicated on the screening levels provided in the RIR and RIR-A. The risk estimate completed indicated that the surficial soils for the combined area of Parcels 1 and 2, have an acceptable total hazard index and cancer risk for the construction worker scenario. Therefore, no PRGs have been established for soil or sediment on Parcels 1 and 2. PRGs are not final cleanup levels. Final cleanup levels will be set in the Record of Decision (ROD).

4.2.1 Sediment

NAPL is visibly present in the drainage ditches and wetlands on Parcels 3, 4, and 5 and the wetlands on the LECE School property. The greatest accumulation is within a low-lying depositional area of a wetland near the southern end of the Vaughn landfill. Based on the sampling completed during the RIR-A, visible NAPL is an indicator that there may be USEPA Region 4 sediment RSVs exceedances in sediment. Therefore, removal of visual NAPL from sediment will achieve the RAO and is considered the PRG.

4.2.2 Groundwater

NAPL is visibly present within the shallow-zone, transition-zone, and bedrock groundwater systems. Groundwater is classified as Class GB, or suitable for drinking water without treatment. Unless site-specific remediation standards are developed (see Section 4.2.4), the PRGs for Class GB groundwater for organic and inorganic chemicals are the drinking water MCLs as set forth in R.61-58, State Primary Drinking Water Regulations, R.61-68, Water Classifications & Standards, or concentration promulgated by the SCDHEC, if no PRG is available (e.g., naphthalene and methyl t-butyl ether). **Table 4-1** presents the PRGs for the analytes that were detected during the RI in groundwater at concentrations above applicable MCLs set by R.61-58, R61-68, or above standards promulgated by the SCDHEC if no PRG is available. For analytes that were not detected above the screening criteria during the RI, no PRGs are proposed.

4.2.3 Surface Water

The surface water is classified as freshwater in accordance with SCDHEC regulation document R.61-68, Water Classifications and Standards, effective June 27, 2014. Human health MCLs for freshwater are provided in R.61-68 E.14.b(1). Since 2019, only benzo(a)pyrene was detected at a concentration greater than the freshwater human health MCL, in one sampling location near the Vaughn landfill (SW-5) during two sampling events (March 23, 2021, and September 15, 2021). No analytes were detected in the surface water at concentrations above the freshwater human health MCL during the most recent sampling events (semiannual sampling conducted during March 2022, September 2022, and March 2023), and MGP-related constituent concentrations above analytical reporting limits were not detected in the Reedy River. Therefore, a PRG for benzo(a)pyrene (0.2 µg/L) is proposed for surface water. Based on recent sampling, surface water currently meets this PRG. For analytes that were not detected above the screening criteria, no PRGs are proposed.

4.2.4 Site-Specific Remediation Standards

Depending on the selected remedial alternative, the use of site-specific standards will be evaluated during the remedial design process. South Carolina's Amendment to Section 44-56-200, Hazardous Waste Cleanup, provides a mechanism for site-specific remediation standards for soil and groundwater.

For groundwater, natural attenuation can be considered a site-specific remediation standard, provided that (i) the current and probable future use is identified, (ii) site-specific sources of contaminants and potential receptors are identified, and (iii) potential receptors are protected, controlled, or eliminated.

For soil, site-specific remediation standards for carcinogens can be established for exposures that represent an excess lifetime cancer risk of 10^{-6} , provided that soils are remediated to levels that are no longer a continuing source of groundwater impacts in excess of the site-specific standards and remediated to residential or commercial standards dependent on property zoning. These remediation standards would not apply where remediation is impractical because of preexisting structures. Where such removal is impractical, engineering and institutional controls that are sufficient to protect public health, safety, and welfare and the environment must be implemented.

5. DEVELOPMENT OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This FFS has developed chemical-specific, location-specific, and action-specific ARARs , which are included as **Table 5-1**, **Table 5-2**, and **Table 5-3**. The ARARs are potential until selected as part of the final ROD. Potential ARARs have been classified as either “applicable” or “relevant and appropriate.”

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance, are well-suited to a particular site because they address problems or situations sufficiently similar. In addition, non-promulgated criteria advisories or guidance that do not meet the ARAR definition but may assist in determining what is necessary to be protective are listed as “to be considered” (TBC).

Three types of ARARs and the TBC criteria were considered as part of this FFS to further clarify how to identify and comply with environmental requirements: chemical-specific, action-specific, and location-specific.

- Chemical-specific ARARs are concentration limits in the environment promulgated by government agencies. Where such limits do not exist and there is a concern with their health or environmental impacts, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations require the development, where possible, of health-based, site-specific levels for chemicals or media. A list of chemical-specific ARARs that may be pertinent to OU-1 and OU-2 is presented in **Table 5-1**.
- Location-specific ARARs must consider federal, state, and local requirements that reflect physiographical and environmental characteristics. Remedial actions may be restricted or precluded depending on the characteristics of a location and the resulting requirements. A list of location-specific ARARs that are potentially pertinent to OU-1 and OU-2 is presented in **Table 5-2**.
- Action-specific ARARs set controls or restriction on the design, performance, and other aspects of implementation of specific remedial activities. Examples include Resource Conservation and Recovery Act regulations for off-site disposal of hazardous materials and the Clean Water Act standards for discharge of treated groundwater. A list of action-specific ARARs that may be pertinent to OU-1 and OU-2 is presented in **Table 5-3**. The following also may be applicable or relevant and appropriate: (i) design standards affecting the construction of a remedy; (ii) performance standards affecting operation of a remedy

(specifically, treatment requirements and management of residuals); and (iii) discharge standards for a particular process.

6. IDENTIFICATION AND SCREENING OF TECHNOLOGY TYPES AND PROCESS OPTIONS FOR OU-1 SOIL AND SEDIMENT

This section evaluates the technology types and process options for each parcel group. Technology types and process options are specific to the COCs in OU-1. Each technology type and process option will be evaluated for effectiveness, implementability, and cost. Based on this evaluation, the technology type and process option will be retained for inclusion in the combined remedial alternatives or not retained for further consideration. A summary of the identification and screening of technology types and process options for each parcel group is presented in **Table 6-1**.

6.1 Parcels 1 and 2

LUCs will be implemented for Parcels 1 and 2. The goal of the remedy for soils in Parcels 1 and 2 is to record land use restrictions that are compatible with their current land use. These parcels are zoned for industrial/commercial land use. Potential exposure to impacted soils left in place above risk-based criteria will be addressed through LUCs.

6.2 Common Elements – Parcels 3, 4, 5 and LECE School Property

6.2.1 No Action

The No Action alternative leaves the Site as-is, with no provision for future monitoring or LUCs. This alternative is evaluated to provide a baseline for comparison to other remedial alternatives. The National Contingency Plan (NCP) requires an evaluation of the No Action alternative (USEPA 1992).

6.2.1.1 Effectiveness

No Action would not be effective at meeting the RAOs. Although the toxicity of the contaminants would likely reduce over time, there would be no monitoring to verify this decrease.

6.2.1.2 Implementability

There are no implementability concerns because no remedial action would be implemented.

6.2.1.3 Cost

The only cost associated with the No Action alternative would be the cost of continuing 5-year reviews.

6.2.1.4 Conclusion

No Action is retained as a baseline for a comparison of other remedial alternatives.

6.2.2 Land Use Controls

LUCs, typically in the form of deed restrictions or environmental covenants, are necessary for a remedy when material above health or risk-based levels is left in place. LUCs are institutional or administrative measures that govern future development (e.g., soil disturbances) and protection and maintenance of engineering controls.

6.2.2.1 Effectiveness

LUCs alone will not be effective at reducing the toxicity, mobility, and volume of COCs and NAPL in sediments. However, LUCs would be effective at limiting the types of activities conducted (e.g.,

use of groundwater) and limiting the types of land uses (e.g., limiting the property use to industrial through deed restrictions).

6.2.2.2 Implementability

LUCs can be readily implemented at each parcel and can be used in combination with other remedial alternatives and can provide additional protection throughout the lifecycle.

6.2.2.3 Cost

The costs associated with LUCs would be low. Costs consist of the administrative cost of preparing and filing the deed restrictions and the cost of periodic (annual) inspections to ensure compliance.

6.2.2.4 Conclusion

LUCs are retained to be used in conjunction with other technologies for the development of remedial alternatives.

6.3 Parcel 3 and LECE School Property

In addition to No Action and LUC alternatives discussed in Sections 6.2.1 and 6.2.2, the following remedial alternatives will be evaluated for Parcel 3 and the LECE School Property:

- Excavation (NAPL-focused or including complete removal of Vaughn landfill)
- Selective excavation with containment and capping
- In situ stabilization

6.3.1 Excavation

Under this scenario, the sediment with observed NAPL, including (a) the portion of the Vaughn landfill with underlying NAPL or (b) the overall landfill, will be excavated and disposed at a Duke Energy approved Subtitle D landfill. The excavated Vaughn landfill is assumed to be disposed of at a permitted C&D landfill. Depending on the Vaughn landfill excavation strategy (NAPL-focused or complete removal), the portion of Vaughn landfill that does not overlay NAPL could remain in place. A temporary barrier wall (i.e., sheet piling) could be used for excavation stability and reduction of groundwater infiltration into excavation areas. Clean fill will be brought in for backfilling. This scenario can result in the complete removal of NAPL-impacted sediments. It is likely that LUCs will only be required for the impacted groundwater. Excavated wetland areas and the excavated Vaughn landfill will be replanted and restored as a wetland. Limited areas of excavation outside the wetland areas will be restored to match existing grade.

6.3.1.1 Effectiveness

Excavation is a well-proven, easily implemented, and effective remedy for removing NAPL. Backfilling with clean soil would restore the wetlands to their original condition, and there would be no unacceptable risk to human health or the environment.

6.3.1.2 Implementability

Excavation of the observed NAPL, including the overall Vaughn landfill or only the portion of the Vaughn landfill with underlying NAPL, can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required as well as equipment utilized for the installation of temporary sheet piling. During

excavation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of a USACE Nationwide 38 permit and South Carolina’s erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (e.g., hay bales, silt fence) would be required during construction.

Managing truck traffic would be one of the most challenging aspects of the excavation. Thousands of loads of impacted material would be trucked out of Parcel 3 and the LECE School property through neighboring streets. The excavation and truck traffic could last several years. The material would be disposed of at an off-Site Subtitle D landfill.

6.3.1.3 Cost

The cost of excavating observed NAPL, including the portion of the Vaughn landfill with underlying NAPL or the overall landfill (including area without NAPL) would be high.

6.3.1.4 Conclusion

Excavation of the observed NAPL, including the portion of the Vaughn landfill with underlying NAPL or the overall landfill (including area without NAPL), will be retained and used in conjunction with other alternatives.

6.3.2 Selective Excavation with Containment and Capping

Under this scenario, selective excavation is defined as the sediments within the wetland areas with NAPL impacts, excluding most of the Vaughn landfill with underlying NAPL. A small portion (approximately 0.3 acres) of Vaughn landfill will be excavated to access the underlying NAPL on the southwestern portion of the Vaughn landfill. Sediments will be excavated and disposed at a Duke Energy approved Subtitle D landfill. The excavation of a portion of Vaughn landfill is assumed and will be disposed of at a permitted C&D landfill. The unexcavated portion of Vaughn landfill will remain in place. A temporary barrier wall (i.e., sheet piling) could be used for excavation stability and reduction of groundwater infiltration into the excavation area. Clean fill will be brought in to restore the excavated wetlands. NAPL beneath the Vaughn landfill would remain in place. Additional sheet piling and landfill capping in combination with pumping (via mechanical groundwater extraction [initially] and engineered phytoremediation) could be used for containment of the remaining NAPL beneath the Vaughn landfill. Landfill capping in combination with containment and pumping would reduce the overall downward hydrostatic pressure by minimizing the infiltration into the subsurface in combination with removal via active (initially) and passive pumping.

6.3.2.1 Effectiveness

Selective excavation is a well-proven, easily implemented, and effective remedy for removing the majority of NAPL. Similarly, capping in combination with containment and hydraulic control is a proven effective technology, which would also be anticipated to have a long-term positive impact on groundwater, as discussed in Section 7.4.2. Backfilling with clean soil would restore the wetlands to their original condition and there would be no unacceptable risk to human health or the environment.

6.3.2.2 Implementability

Selective excavation of the observed NAPL can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required as well as equipment utilized for the installation of approximately 1,000 feet of temporary sheet piling on the LECE School property and 1,135 feet of sheet piling which would remain in place on Parcel 3 to provide containment. Additionally, as a component of selective excavation, engineered phytoremediation using TreeWell® or equivalent, with an initial period of mechanical pumping from two extraction wells during the establishment period of phytoremediation would be implemented. Hydraulic control via engineered phytoremediation is further discussed and described in Section 7.4.2.

During implementation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of the USACE Nationwide 38 permit and South Carolina's erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (e.g., hay bales, silt fence) would be required during construction.

Managing truck traffic would be one of the most challenging aspects of the selective excavation. Thousands of loads of impacted material would be trucked out of Parcel 3 and the LECE School property through neighboring streets and the community. The excavation and truck traffic could last two to three years. The material would be disposed of at an off-Site Subtitle D landfill.

6.3.2.3 Cost

The cost of the selective excavation of the observed NAPL with containment and landfill capping would be high.

6.3.2.4 Conclusion

Selective excavation of the observed NAPL in combination with containment and landfill capping will be retained and used in conjunction with other alternatives.

6.3.3 In Situ Stabilization

Under this scenario, targeted areas with observed NAPL will be stabilized or encapsulated using in situ stabilization (ISS). ISS typically involves adding a stabilizer to the sediment (e.g., Portland cement) which binds COCs within the sediment matrix and reduces hydraulic conductivity to minimize COC leaching to groundwater. The swell from ISS will be excavated and disposed of off-Site before restoring the wetlands. This remedial technology may be combined with excavation or on-Site containment.

6.3.3.1 Effectiveness

Geosyntec completed an ISS treatability study to evaluate the effectiveness and practicality of implementing ISS for the sediments in the wetlands/uplands and to provide design basis information for the development of remedial alternatives during the preparation of a feasibility study, if practical.

Based on the results of the ISS mix design testing, no ISS mix design was greater than the primary defining unconfined compressive strength (UCS) criteria of 50 pounds per square inch (psi) after 28 days of curing. Therefore, hydraulic conductivity and leach testing were not conducted. Mix

design 3A for each soil composite (i.e., total cement additions $\geq 24\%$ by dry mass of soil) was evaluated in an attempt to determine whether a commercially viable mix design could be developed for ISS implementation. These mixes were not above the lower bound of the UCS criteria (50 psi) at 28 days for each soil composite. As a result, ISS implementation as a remedial alternative is not recommended.

6.3.3.2 Implementability

ISS of the observed NAPL can be implemented. ISS equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required. During ISS implementation, it would be necessary to comply with Site-specific health and safety procedures and regulations to ensure that the exposure of the workers to COCs is minimized. The substantive requirements of the USACE Nationwide 38 permit and South Carolina's erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (i.e., hay bales, silt fence) would be required during construction activities.

6.3.3.3 Cost

ISS of the observed NAPL would have a moderate cost.

6.3.3.4 Conclusion

Based on the results of the treatability study, ISS implementation as a remedial alternative is not retained.

6.4 Parcels 4 and 5

In addition to No Action and LUC alternatives discussed in sections 6.2.1 and 6.2.2, the only alternative proposed for Parcels 4 and 5 will be excavation of NAPL located in the drainage ditch. No other technology types or process options will be considered.

6.4.1 Excavation

Under this scenario, sediments with observed NAPL within the ditch will be excavated and disposed at a Duke Energy approved Subtitle D landfill. Clean fill will be brought in to restore the excavated wetlands. This scenario can result in both Parcels 4 and 5 meeting residential standards for OU-1. Sediment management controls (e.g., riprap or sediment traps) will be installed within drainage ditches to further minimize potential sediment transport toward the Reedy River.

6.4.1.1 Effectiveness

Excavation is a well-proven, easily implemented, and effective remedy for removing NAPL from the parcels. Backfilling with clean soil would restore the wetlands and ditch banks to their original condition and there would be no unacceptable risk to human health or the environment.

6.4.1.2 Implementability

Excavation of the observed NAPL can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required. During excavation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of a USACE Nationwide 38 permit and South Carolina's erosion and sedimentation control

regulations would need to be followed. Temporary erosion and sedimentation controls (e.g., hay bales, silt fence) would be required during construction activities.

Managing truck traffic would be one of the most challenging aspects of the excavation. Hundreds of loads of impacted material would be trucked out of Parcels 4 and 5 through neighboring streets. The excavation and truck traffic could last two to three months. Material would be disposed of at an off-Site Subtitled D landfill.

6.4.1.3 Cost

Selective excavation of the observed NAPL will be retained and used in conjunction with other alternatives.

6.4.1.4 Conclusion

Excavation of sediment with observed NAPL in Parcel 4 and 5 will be retained and used in conjunction with other alternatives.

7. IDENTIFICATION AND SCREENING OF TECHNOLOGY TYPES AND PROCESS OPTIONS FOR OU-2 SURFACE WATER AND GROUNDWATER

This section evaluates the technology types and process options for each parcel group. The alternatives evaluated here are specific to the COCs in OU-2. Each technology type and process option will be evaluated for effectiveness, implementability, and cost. Based on this evaluation, the technology type and process option will be retained for inclusion in the combined remedial alternatives or not retained for further consideration. A summary of the identification and screening of technology types and process options for each parcel group is presented in **Table 7-1**.

7.1 No Action

The No Action alternative leaves the Site as-is with no provision for future monitoring or LUCs. This alternative is evaluated to provide a baseline for comparison of other remedial alternatives. Evaluation of the No Action alternative is required under the NCP (USEPA 1992).

7.1.1 Effectiveness

No Action would not be effective at meeting the RAOs. The toxicity of the contaminants would likely reduce over time, but there would be no monitoring to verify this decrease.

7.1.2 Implementability

There would be no implementability concerns because remedial action would not be implemented.

7.1.3 Cost

The only cost associated with the No Action alternative would be continuing to conduct 5-year reviews.

7.1.4 Conclusion

No Action is retained as a baseline for comparison of other remedial alternatives.

7.2 Land Use Controls

LUCs, typically in the form of deed restrictions or environmental covenants, are a necessary component of a remedy when material above health or risk-based levels is left in place. LUCs are institutional or administrative measures that govern future development (e.g., no use of groundwater) and the protection and maintenance of engineering controls.

7.2.1 Effectiveness

LUCs alone will not be effective at reducing the toxicity, mobility, and volume of COCs and NAPL in surface water and groundwater. However, LUC would be effective by limiting use of groundwater and limiting the types of land uses (e.g., limiting the property use to industrial through deed restrictions).

7.2.2 Implementability

LUCs controls can be readily implemented at each parcel and, when used in combination with other remedial alternatives, can provide additional protection throughout the lifecycle.

7.2.3 Cost

The costs associated with LUCs would be low. Costs consist of the administrative cost of preparing and filing the deed restrictions and the cost of periodic (annual) inspections to ensure compliance

7.2.4 Conclusion

LUCs are retained to be used in conjunction with other technologies for the development of remedial alternatives.

7.3 Surface Water

Impacts to surface water are minimal with only one sample location near Vaughn landfill to date exhibiting a COC, benzo(a)pyrene, with a concentration above applicable screening criteria during two semiannual monitoring events in 2021. During the last three semiannual events, detections above applicable screening criteria were not observed. Surface water samples collected from the six locations along the Reedy River have not contained VOCs or SVOCs at concentrations greater than reporting limits or applicable regulatory criteria as discussed in the RIR-A. These six surface water locations are generally located west of the Site along the Reedy River, with one of the surface water sample locations immediately downgradient of the outfall from Parcel 5 that discharges into the Reedy River. The historical impacts to surface water (limited to an area adjacent to the Vaughn landfill) are expected to be addressed via successful remediation of source material in sediment and groundwater.

7.4 Shallow and Transition Groundwater Zones

In addition to the No Action and LUC alternatives discussed in Sections 7.1 and 7.2, the following remedial alternatives will be evaluated for the shallow and transition groundwater zones:

- MNA
- Hydraulic control
- In situ chemical oxidation

7.4.1 Monitored Natural Attenuation

EPA defines MNA as the “reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. The ‘natural attenuation processes’ that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in sediment or groundwater. These *in-situ* processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants.”

7.4.1.1 Effectiveness

MNA would not be effective for NAPL that remains in the groundwater but could be effective for the dissolved phase of the benzene and naphthalene plume. Trend analyses performed on the current groundwater data set indicate that the groundwater plume is mostly stable and or shrinking where NAPL is not present in OU-2 or OU-3. Groundwater modeling and ongoing statistical trend analysis would likely be required to document and support effectiveness of MNA.

7.4.1.2 Implementability

MNA can easily be implemented though long-term access agreements will be required. Aside from groundwater sampling equipment, no special equipment is required.

7.4.1.3 Cost

Cost associated with MNA would be low.

7.4.1.4 Conclusion

MNA is retained to be used in conjunction with other technologies for the development of remedial alternatives.

7.4.2 Hydraulic Control

Under this scenario, hydraulic control measures (groundwater extraction wells or TreeWell[®] installation [or similar phytoremediation technology], or both) will be evaluated to induce a hydraulic gradient that restricts COC migration. The need to treat extracted groundwater and obtain discharge permits will be evaluated. Hydraulic control of the shallow zone may complement some of the containment approaches for impacted sediments discussed in Section 6. Hydraulic control will be coupled with MNA within the capture zone to monitor contaminant degradation.

Engineered phytoremediation via TreeWell[®] is a plant-based remediation technology where the tree serves as the “pump” and offers a cost-effective alternative to more traditional pumping wells and provides an aesthetically pleasing approach to site cleanup, with the potential for significant cost savings compared to active remediation systems.

Engineered phytoremediation systems such as TreeWell[®] transpire water equivalent to a forest canopy at the time of canopy closure, which is estimated at 5 years. Cottonwood and willow, the two species most likely to be employed for this alternative, have been documented to achieve average transpiration rates of approximately 5,200 gallons per acre per day (Schaeffer, et al., 2000). This is consistent with the industry “rule of thumb” of between 1 and 1.5 million gallons per acre per year (annual average) for forested land. The approximately 1.5-acre capped area within the barrier wall where the engineered phytoremediation system would be applied would be anticipated to provide a net extraction rate (based on the average transpiration rate, and assuming a nine-month season of active transpiration) of over 2 million gallons per year (equivalent to approximately 4 gallons per minute). Installation of an engineered phytoremediation system in C&D material does present some minor implementation challenges; however, installations have been successfully completed under similar conditions at multiple sites throughout the United States.

7.4.2.1 Effectiveness

Hydraulic control will be highly effective at limiting potential migration of COCs in groundwater. Hydraulic control can be achieved through the installation of groundwater extraction wells or TreeWell® installation (or similar phytoremediation technology). Typical pumping rates are low, removing just enough water to limit the flow of groundwater. Hydraulic control is also effective at maintaining an upward groundwater gradient from lower groundwater zones (e.g., bedrock groundwater zone).

7.4.2.2 Implementability

Hydraulic control uses groundwater extraction wells that are readily implementable and do not require specialty contractors or equipment that is not readily accessible. The use of TreeWell® systems is implementable, but it typically takes time (~5 years) for the trees to become established and capture the required volume of water to maintain hydraulic control. Therefore, it is common to install groundwater extraction wells and plant trees at the start of the remedial action and to use the extraction wells until the trees are established before transitioning to trees only.

7.4.2.3 Cost

The short-term costs are low to moderate. However, once the transition is made to using only trees, the costs become low.

7.4.2.4 Conclusion

Hydraulic control, through the use of pumping wells and TreeWell® systems, is retained to be used in conjunction with other technologies for the development of remedial alternatives.

7.4.3 In Situ Chemical Oxidation

In situ chemical oxidation (ISCO) is a remedial approach that uses commercially available reagents to oxidize COCs. To distribute the reagents in the subsurface, technologies such as injection wells or direct push technology would be used. Persulfate and permanganate are two of the more common reagents.

7.4.3.1 Effectiveness

For ISCO to be highly effective, the reagents must come into contact with the target dissolved phase COCs. Thus, delivery and distribution are critical factors for success. However, ISCO is not as effective for NAPL since the COCs must be in the dissolved phase. Where NAPL is present, multiple injections or application of ISCO reagents may be required to achieve measurable COC concentration reductions.

7.4.3.2 Implementability

The equipment required to inject oxidizing chemicals into the groundwater is readily available. The chemicals that would be used to oxidize benzene and naphthalene are commonly available in the manufacturing and chemical industries. However, achieving effective distribution in the subsurface could be challenging, because much of the COCs and NAPL is in areas that are difficult to access (i.e., wetlands).

7.4.3.3 Cost

The cost for ISCO is moderate to high, depending on the implementation.

7.4.3.4 Conclusion

Because of the difficulty of implementation, ISCO will not be retained.

8. FEASIBILITY STUDY EVALUATION CRITERIA

USEPA guidance provides nine criteria, divided into three broader categories, to consider when screening remedial alternatives (USEPA 1988). The nine criteria and their associated categories are presented below.

8.1 Threshold Criteria

- *Overall Protection of Human Health and the Environment.* The assessment for this criterion describes how each alternative achieves and maintains adequate protection of human health and the environment.
- *Compliance with ARARs.* The assessment for this criterion describes how each alternative complies with potential federal and state ARARs. In addition, the assessment addresses other information from advisories, criteria, and guidance that may be applicable to the Site.

8.2 Balancing Criteria

- *Long-Term Effectiveness and Permanence.* The assessment for this criterion evaluates the long-term effectiveness of alternatives in maintaining protection of human health and the environment after response objectives have been met.
- *Reduction of Toxicity, Mobility, and Volume through Treatment.* The assessment for this criterion evaluates the alternative with respect to how well it can permanently and significantly reduce toxicity, mobility, and volume of impacted media.
- *Short-Term Effectiveness.* The assessment for this criterion evaluates the alternative with respect to its effects on human health and the environment during construction and implementation of the remedial action.
- *Implementability.* The assessment for this criterion evaluates the technical and administrative feasibility of each alternative and the availability of materials and services required during its implementation.
- *Cost.* This assessment evaluates estimated capital and operation and maintenance (O&M) costs of each alternative. In accordance with the USEPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, a level four cost estimate was developed for each combined alternative in Section 9.3 (USEPA, October 1988). The cost estimate has a goal to meet a plus 50 percent and minus 30 percent accuracy level. For post-construction costs, a present value approach was utilized which applied a seven percent discount factor, consistent with *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (USEPA, July 2000).

8.3 Modifying Criteria

- *State Acceptance.* This criterion pertains to the potential technical and administrative issues and concerns the state may have regarding each alternative.
- *Community Acceptance.* This criterion pertains to the potential issues and concerns the public may have regarding each of the alternatives.

9. DESCRIPTION AND DETAILED ANALYSIS OF COMBINED OU-1 AND OU-2 REMEDIAL ALTERNATIVES

9.1 Remedial Alternatives

Based on the retained technology types and process options presented in Section 6 and Section 7, the following four combined OU-1 and OU-2 remedial alternatives have been developed for the Site.

- Combined Remedial Alternative 1: No Action
- Combined Remedial Alternative 2: MNA and LUCs
- Combined Remedial Alternative 3: Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and LUCs
- Combined Remedial Alternative 4: Excavation, MNA, and LUCs
- Combined Remedial Alternative 5: Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs

In the following sections, each combined OU-1 and OU-2 remedial alternative is compared to the nine USEPA guidance criteria: threshold, balancing, and modifying criteria. A numerical evaluation of the alternatives and guidance criteria is provided in **Table 9-1**. A comparative summary with descriptions of each alternative relative to the strengths and weaknesses of each evaluation criteria is provided in **Table 9-2** and discussed in Section 9.4

9.2 Constructability Review

Due to the complexity of the proposed combined remedial alternatives, Duke Energy contracted with highly qualified remediation contractors to complete a constructability review for Combined Remedial Alternatives 3 through 5, described in Sections 9.3.3 through 9.3.5, respectively. The objective of the review was to identify if some part or all of an alternative may not be physically possible without significant risks to the community and/or the environment.

Each contractor identified significant constructability issues, including storm water management, truck and traffic routing, and sediment and material handling (stabilization and odor control). It was generally agreed that management of stormwater in the rainy season would propose a significant risk due to potential flooding issues, therefore, it was assumed that the remedial activities could only be actively performed eight months of the year (May through December). The January through April shut-down period was based upon a review of the United States Geological Survey (USGS) gauge, discharge, and precipitation station data from the last 10 years for the Reedy River and the visual identification of this period of time via direct Site experience as having a higher preponderance for flooding conditions and elevated water levels within the wetlands area which would impact operations in the project area. **Table 9-3** includes USGS gauging station data which supports a basis for establishing a seasonal schedule.

Truck and traffic routing was identified as a significant risk and disruption to the surrounding community. Since Combined Alternative 3 has less truck trips and a shorter schedule, it was thought to be less disruptive to the community. Due to the high potential for nuisance odors while

excavating the NAPL from the LECE School property, it has been assumed that a sprung structure may be constructed over the excavation to mitigate this risk. A sprung structure is a high-performance tensioned membrane structure, typically with aluminum arches that can be rapidly erected over a large footprint (typical size of 20,000+ square feet) and moved, as needed. Remediation work is performed inside the sprung structure with an associated air collection and treatment system to provide odor management (see photograph inset included on **Figure 9-1**). These constructability issues have been factored into the analysis of the combined alternatives below and the numerical evaluation presented in Section 9.4.

9.3 Analysis of Combined Alternatives

9.3.1 Combined Remedial Alternative 1: No Action

9.3.1.1 Description

The No Action alternative maintains the Site in its current condition (i.e., as-is). This alternative has been retained to provide a baseline for comparison to other alternatives.

9.3.1.2 Overall Protection of Human Health and the Environment

Combined OU-1 and OU-2 Remedial Alternative 1 does not involve any remedial actions and the Site would remain in its current condition. No land use restrictions would be placed on any of the parcels or the LECE School property. This alternative does not protect human health and the environment.

9.3.1.3 Compliance with ARARs

This alternative would not comply with the chemical-specific ARARs because no action would be taken to reduce contaminant concentrations. Because no remedial action would be taken, there are no action-specific ARARs. No location-specific ARARs are relevant to this alternative.

9.3.1.4 Long-Term Effectiveness and Permanence

This alternative would have no long-term effectiveness or permanence. COCs may attenuate over time, but there would be no method to monitor this trend. Because there are no LUCs, there would be no method to protect future Site occupants.

9.3.1.5 Reduction of Toxicity, Mobility, and Volume through Treatment

This alternative would have no reduction of toxicity, mobility, or volume because there would be no treatment. COCs may attenuate over time, but there would be no method to monitor this trend.

9.3.1.6 Short-Term Effectiveness

Because there would be no remedial action, there would be no risk to human health and the environment during construction and implementation of the remedial action; however, the timeframe to achieve remedial objectives would be an extended period.

9.3.1.7 Implementability

This alternative is readily implementable. The technical and administrative feasibility this alternative and the availability of materials and services required during its implementation are not relevant.

9.3.1.8 Cost

Under this alternative, there would be no capital or O&M construction costs.

- Construction Costs (Capital) \$0
- 30-Year O&M Costs (Present Value) \$22,000
- Total \$22,000
- Cost Range (-30% to +50%) \$15,000 - \$33,000

9.3.2 Combined Remedial Alternative 2: MNA and LUCs

9.3.2.1 Description

The MNA and LUCs alternative maintains the Site in its current condition (i.e., as-is) with continued monitoring for a period of 30 years. Soil, sediment, and groundwater LUCs will be implemented on the parcels and LECE School property.

9.3.2.2 Overall Protection of Human Health and the Environment

Combined OU-1 and OU-2 Remedial Alternative 2 does not involve active remedial actions and the Site would remain in its current condition with LUCs that would be placed on the parcels and the LECE School property. The LUCs would not align with the current use of the LECE School property or Parcel 4. This alternative does not protect human health and the environment since impacted media remain in place on Parcels 3, 4, 5, and the LECE School property.

9.3.2.3 Compliance with ARARs

This alternative would likely not comply with the chemical-specific ARARs because no active remediation would be taken to reduce or contain the source of the contaminant concentrations. Since the Site will be maintained “as is”, there are no action-specific ARARs. No location-specific ARARs are relevant to this alternative.

9.3.2.4 Long-Term Effectiveness and Permanence

This alternative would have minimal long-term effectiveness or permanence. COCs may attenuate over time, but without plume source removal, contaminant concentrations are not likely to significantly decrease within the 30-year timeframe. The needed soil sediment LUC would not align with the current use of the LECE School Property or Parcel 4.

9.3.2.5 Reduction of Toxicity, Mobility, and Volume through Treatment

Because there would be no active treatment, this alternative would not significantly reduce the toxicity, mobility, or volume of impacted NAPL, but could be effective for the dissolved phase of the groundwater benzene and naphthalene plume. Reduction of the toxicity and volume of COCs in the soils, sediment, and groundwater will occur through natural attenuation, but without plume source removal (NAPL), contaminant concentrations are not likely to significantly decrease.

9.3.2.6 Short-Term Effectiveness

Because the remedial action requires continued routine groundwater monitoring, there would be minimal risk to human health and the environment during implementation of the remedial action; however, the timeframe to achieve remedial objectives would be an extended period.

9.3.2.7 Implementability

This alternative is readily implementable. The technical and administrative feasibility of this alternative and the availability of materials and services required during its implementation are not relevant.

9.3.2.8 Cost

Under this alternative, there would be capital construction costs for the implementation of the proposed remedy. Other costs for this alternative are associated with the O&M as follows:

- | | |
|-------------------------------------|-------------------------|
| • Construction Costs (Capital) | \$150,000 |
| • 30-Year O&M Costs (Present Value) | \$1,200,000 |
| • Total | \$1,350,000 |
| • Cost Range (-30% to +50%) | \$950,000 - \$2,000,000 |

A summary of the Remedial Alternative 2 costs is provided in **Table 9-4**.

9.3.3 Combined Remedial Alternative 3: Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and LUCs

9.3.3.1 Description

Remedial Alternative 3 would include the following primary components:

- Selective excavation on Parcel 3, 4, 5, and LECE
- Installation of a barrier wall in combination with capping of a portion of the Vaughn landfill
- Hydraulic control of the shallow- and transition-zone groundwater via mechanical pumping (~5 years) and engineered phytoremediation on the capped portion of the Vaughn landfill
- MNA of groundwater, and implementation of LUCs for long-term effectiveness

A description of each element in this alternative is provided below and shown graphically on **Figures 9-1** through **9-4**.

Selective Excavation: Overview

It is likely that dewatering and surface water management will be required during the selective excavations described above. The excavations will be backfilled with clean sediment to match the existing elevations and restored to its preconstruction condition (i.e., wetlands). This option meets the RAOs for the LECE School property and facilitates the removal of the majority of the NAPL-impacted sediments identified in the RIR-A.

Selective Excavation: LECE School Property

This alternative includes the excavation of the sediments within the wetlands with visible NAPL, including a portion of the turnaround/parking area on LECE School property, to a depth of 16 ft bls based on the RIR-A (SynTerra 2021). The total areal extent of excavation is approximately 1.02 acres as identified on **Figure 9-1**. To excavate to this depth, it has been assumed that a 1,000

ft long temporary, sheet pile wall would be installed to an estimated depth of 25 ft at the location shown on **Figure 9-1**. The estimated volume of sediment for Alternative 3 is 26,400 bcy.

Excavation of MGP materials has the potential to cause unwanted emissions. Potential emissions include vapor phase organic compounds, respirable particulate matter (RPM10), dust, odor, and noise. It is anticipated that mitigation of potential air and noise will include implementation of an Air, Noise and Fugitive Emissions Monitoring and Mitigation Plan (ANFEMP) and may include the construction of a temporary moveable sprung structure over the LECE School excavation area. The ANFEMP will summarize the roles and responsibilities for mitigation of air and fugitive emissions and noise; detail monitoring requirements, period of monitoring anticipated, and frequency/methodology of analysis. The temporary sprung structure, if needed, is a large enclosure that can be placed over the LECE school property excavation area (in phases) and kept at a negative air pressure to facilitate capture of air emissions. The area where a temporary sprung structure would be placed (and moved as necessary during implementation) is shown on **Figure 9-1** and corresponds directly to the area to be excavated. Challenges associated with the use of a sprung structure on the LECE school property include: (i) construction and placement of the structure within a wetland environment, (ii) logistics associated with moving and anchoring the structure in the wetland setting, and (iii) maintaining and/or moving the structure during or in response to storm events/flooding conditions.

Selective Excavation: Parcel 3

Parcel 3 is divided into two areas, north and south excavation areas as illustrated on **Figure 9-2**. The total areal extent of the excavation for north and south excavation areas is 0.5 and 1.35 acres, respectively. Parcel 3 south excavation area includes approximate 0.3 acres of the Vaughn landfill. This area has been included because the majority of the area has thicker NAPL-impacted sediments present (remaining area which was not included was identified as visually observed trace NAPL in the RIR-A) and the overlying Vaughn landfill is relatively thin, making the NAPL more accessible. To minimize the extent of removal of the Vaughn landfill, the excavation will be limited to the area shown on **Figure 9-2**. At an expected maximum depth of 7 ft of NAPL, the estimated sediment excavation volumes of NAPL for north and south excavation areas are approximately 5,700 and 15,300 bcy, respectively. At an expected maximum depth of 10 ft bls, the estimated sediment excavation volumes of the Vaughn landfill for the south area are approximately 3,900 bcy. The proposed excavation will be completed based on the estimated depth in the RIR and on visual observation with standard excavation equipment and a dewatering/treatment system. The excavation would be backfilled with clean sediment, along with the restoration of the wetland vegetation (**Figure 9-4**). BMPs (e.g., silt fences, sediment tubes, rock ditch check, and turbidity curtains) will be placed to prevent the migration of sediment off-Site during construction.

Selective Excavation: Parcels 4 and 5

The total areal extents of the excavation for Parcels 4 and 5 are 0.24 and 0.20 acres, respectively as shown on **Figure 9-2**. At an expected maximum depth of 7 ft bls, the estimated sediment excavation volume for Parcels 4 and 5 are approximately 2,800 and 2,300 bcy, respectively. The proposed sediment excavation will be completed based on the estimated depth in the RIR-A and on visual observation using standard excavation equipment. BMPs (e.g., silt fences, sediment

tubes, rock ditch check and turbidity curtains) will be placed to prevent sediment from migrating off-Site during construction.

Barrier Wall, Capping, and Hydraulic Control

To prevent remaining sorbed COCs and NAPL, which will remain in place, from migrating from beneath the Vaughn landfill, an approximately 1,425 ft long permanent barrier wall (e.g., sheet pile) will be installed in the northwestern portion of the Vaughn landfill to the top of the transition zone (depth of approximately 25 ft bls) as shown on **Figure 9-3**. Leaving the Vaughn landfill in place in this area (beneath the cap and within the barrier wall), would (i) allow the current monitoring well network to remain in place and/or to be re-installed following construction, (ii) allow for the installation of a groundwater hydraulic control system, and (iii) significantly reduce construction schedule, the amount of truck traffic, and impact to the surrounding community.

To control infiltration of precipitation within the barrier wall, a low-permeability engineered cap (e.g., geomembrane with drainage layer and 2 ft of soil) will be installed within the limits of the barrier wall.

To prevent the buildup of groundwater within the barrier wall and create an upward hydraulic head on the transition and bedrock zones of groundwater, a groundwater extraction system will be installed that consists of approximately 100 TreeWell[®] installations and two groundwater extraction wells. The groundwater extraction wells would be operated until the trees have been established.

MNA and LUCs

Based on the results of the groundwater sampling, MNA is a viable alternative for the remediation of the shallow- and transition-zone groundwater. LUCs would be required to (i) prevent or limit the use of groundwater until the groundwater reaches PRGs, (ii) protect and maintain the barrier, cap and hydraulic control (e.g., TreeWell[®]), and (iii) maintain current property zoning.

9.3.3.2 Overall Protection of Human Health and the Environment

Select excavation of the majority of NAPL on Parcel 3, and the identified NAPL on Parcel 4, and 5 and on the LECE School property would aid in protecting human health and the environment because the NAPL-impacted material would be excavated and disposed of off-Site. Additionally, the barrier wall would prevent the migration of impacted groundwater and NAPL; and the cap area would be fenced and provide protection from contact with landfill materials on the capped portion of Vaughn landfill. LUCs would provide an additional layer of protection.

9.3.3.3 Compliance with Applicable or Relevant and Appropriate Requirements

This alternative would meet location- and action-specific ARARs. Chemical-specific ARARs would be met over time through MNA.

9.3.3.4 Long-Term Effectiveness and Permanence

Excavation would permanently remove the NAPL from the wetlands on Parcels 3, 4, and 5 and on LECE School property. A limited area of NAPL would be contained within the barrier wall and visually observed trace NAPL would be left under a portion of the Vaughn landfill to remain. This alternative would provide long-term effectiveness. Installation of the barrier wall, cap, and TreeWell[®] systems would require routine O&M to protect human health and the environment after response objectives have been met. The mechanical groundwater extraction component would

require routine (monthly at a minimum) O&M until the trees reach a size where groundwater uptake by the trees is high enough to facilitate shutting down the mechanical pumping system. Once the mechanical pumping system is shut down, O&M and inspection would be required (cap inspection and maintenance and tree inspection and pruning); however, the frequency would be on an annual basis or after a major storm event.

9.3.3.5 Reduction of Toxicity, Mobility, and Volume Through Treatment

Because there would be no active treatment, this alternative would not reduce the toxicity or volume of impacted media overall, though it would reduce it at the Site. The excavated sediment would be disposed at a Duke Energy approved Subtitle D landfill without treatment which would provide for a reduction in mobility, since it is a lined landfill. Reduction of the toxicity and volume of COCs and NAPL in the remaining capped areas and groundwater will occur through natural attenuation over the course of an extended period of time (likely greater than 30 years).

9.3.3.6 Short-Term Effectiveness

Short-term risks for this alternative would include (i) exposure to impacted media by Site workers, (ii) impacts to the community from the work on the LECE School property and the high volume of truck traffic, and (iii) short-term impacts to the community from fugitive dust and odors. The potential for exposure to workers would be minimized by implementing engineering controls, wearing appropriate PPE, and complying with OSHA regulations and Site-specific health and safety procedures.

Any potential negative short-term impacts to the surrounding community and environment from fugitive emissions or spillage of impacted sediment could be minimized by implementing appropriate engineering controls (e.g., dust control, perimeter air monitoring, spill prevention procedures).

The most significant short-term impacts would most likely be from truck traffic and odors. Negative impacts from truck traffic could be minimized by limiting when trucks can operate and identifying the least disruptive truck routing plan. Negative impacts from odors would be minimized through BMPs such as the temporary sprung structure. The estimated construction schedule and truck frequency is approximately two to three years and requiring approximately 9,400 truck trips (assuming 30 trucks/day). The schedule assumes only a portion of the year (8 months) would be available, due to weather and flooding conditions within the wetlands, to conduct the combined remedial alternative construction activities.

9.3.3.7 Implementability

Excavation of the observed NAPL can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required and the installation, maintenance, and movement of a sprung structure on the LECE school property would be challenging. During excavation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of USACE Nationwide 38 permit and South Carolina's erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (e.g., hay bales, silt fence) would be required during construction activities. The material would be disposed of at an off-Site Duke Energy approved Subtitle D landfill.

9.3.3.8 Cost

Under this alternative, there would be capital construction costs for the implementation of the proposed remedy. Other costs for this alternative are associated with the O&M as follows:

Alternative 3

• Construction Costs (Capital)	\$17,300,000
• 30-Year O&M Costs (Present Value)	\$1,300,000
• Total	\$18,600,000
• Cost Range (-30% to +50%)	\$13,000,000 - \$28,000,000

A summary of the Remedial Alternative 3 costs is provided in **Table 9-5**.

9.3.4 Combined Remedial Alternative 4: Excavation, MNA, and LUCs

9.3.4.1 Description

Alternative 4 would include the excavation of the portion of the Vaughn landfill with underlying NAPL; excavation of the impacted sediments on Parcels 3, 4, and 5 and LECE School property; MNA of groundwater; and implementation of LUCs for long term effectiveness. A description of each element in this alternative is provided below and shown on **Figure 9-5**. **Figure 9-6** shows the key features following implementation of Combined Remedial Alternative 4.

Parcel 3: Excavation

This alternative would include the excavation of Parcel 3 NAPL impacted areas, including the portion of the Vaughn landfill with underlying NAPL. The excavation areal extent of Parcel 3 totals approximately 4.8 acres. At an expected maximum depth of 7 ft of NAPL, the estimated sediment excavation volumes for Parcel 3 within the wetlands area is 21,000 bcy. Assuming the thickness of the Vaughn landfill C&D debris is 10 ft and the thickness of underlying NAPL is 10 ft, the volume of excavated C&D debris and NAPL are both 50,700 bcy (101,400 bcy total). The excavations would be backfilled with clean soil and sediment along with the restoration of the wetland vegetation. During restoration, the excavation within the Vaughn landfill footprint would be backfilled to match the existing contours of the wetlands area on either side of Vaughn landfill. BMPs (e.g., silt fences, sediment tubes, rock ditch check, and turbidity curtains) will be placed to prevent sediment from migrating off-Site during construction.

Parcels 4 and 5: Excavation

The total areal extents of the excavation for Parcels 4 and 5 are 0.24 and 0.20 acres, respectively. At an expected maximum depth of 7 ft bls, the estimated sediment excavation volumes for Parcels 4 and 5 are approximately 2,800 and 2,300 bcy, respectively. The proposed sediment excavation will be completed based on the estimated depth in the RIR and on visual observation using standard excavation equipment. BMPs (e.g., silt fences, sediment tubes, rock ditch check, and turbidity curtains) will be placed to prevent sediment from migrating off-Site during construction.

LECE School Property: Excavation

This alternative includes the excavation of the sediments within the wetlands and uplands that are visibly stained with NAPL to a depth of 16 ft bls. This alternative includes the parking area on LECE School property. The total areal extent of excavation is approximately 1.02 acres.

As described above, excavation on the LECE School property would require the implementation of an AFEMP to address noise and air and fugitive dust emissions. Additionally, the use a temporary sprung structure, if needed, over the excavation area would further reduce potential impacts to the LECE School property during the excavation.

Dewatering and surface water management will likely be required during the excavation. The excavation will be backfilled with soil to match the existing elevations and restored to its preconstruction condition. This alternative meets the RAOs for the LECE School property and facilitates the removal of the NAPL that the RIR identifies in this area, excluding the parking area on LECE School property.

MNA and LUCs

Following excavation activities, the remedy for the shallow- and transition-zone groundwater will be MNA. The removal of a portion of the landfill with restoration as wetlands will limit the area available for the installation of monitoring wells and assessing natural attenuation over time. Based on the results of the groundwater sampling and the proposed removal of NAPL, MNA is a viable alternative for groundwater remediation over the course of an extended period of time (likely greater than 30 years). LUCs would be required to prevent or limit the use of groundwater until the groundwater reaches PRGs and to maintain current property zoning.

9.3.4.2 Overall Protection of Human Health and the Environment

Excavation of impacted sediment on Parcels 3, 4, and 5 and the LECE School property would help to protect human health and the environment because the NAPL-impacted material would be excavated and removed from the Site. LUCs would also provide an additional layer of protection.

9.3.4.3 Compliance with Applicable or Relevant and Appropriate Requirements

This alternative would meet location- and action-specific ARARs. Chemical-specific ARARs would be met over time through MNA.

9.3.4.4 Long-term Effectiveness and Permanence

Excavation would permanently remove the NAPL from the wetlands on Parcels 3, 4, and 5, the LECE School property and from beneath the Vaughn landfill. This alternative would provide long-term effectiveness. Additionally, Federal Emergency Management Agency (FEMA) flood insurance maps would need to be updated for the partial removal of Vaughn landfill. Select monitoring wells would need to be reinstalled to establish and continue long-term groundwater monitoring (for OU-2 and OU-3).

9.3.4.5 Reduction of Toxicity, Mobility, or Volume Through Treatment

The toxicity, mobility, and volume of waste would be reduced at the Site through excavation. However, because the excavated impacted media would be disposed of at a Duke Energy approved Subtitle D landfill without treatment, there is no overall reduction in toxicity or volume of waste. The mobility would be reduced due to placement in an engineered waste containment cell at the landfill. Reduction of the toxicity and volume of COCs and NAPL in the groundwater will occur

through natural attenuation over the course of an extended period of time (likely greater than 30 years).

9.3.4.6 Short-Term Effectiveness

Short-term risks for this alternative would include (i) exposure to impacted media by Site workers, (ii) potential impacts to the community from the work on the LECE School property and the high volume of truck traffic, and (iii) short-term impacts to the community from fugitive dust and odors. The risk of exposure to workers would be minimized by implementing engineering controls, wearing appropriate PPE, and complying with OSHA regulations and Site-specific health and safety procedures. Any potential negative short-term impacts to the surrounding community and environment could be minimized by implementing appropriate engineering controls (e.g., dust control, perimeter air monitoring, spill prevention procedures).

Because of the large volume of excavated material (153,900 bcy), Alternative 4 could have significant negative impacts from truck traffic. It is estimated that approximately 18,500 trucks trips would be required and the timeframe for completion would be approximately 5 to 6 years. The schedule assumes only a portion of the year (8 months) would be available, due to weather and flooding conditions, to conduct the combined remedial alternative construction activities. The disruption to the community could be minimized by limiting when trucks can operate and identifying the least disruptive truck routing plan.

9.3.4.7 Implementability

Excavation of the observed NAPL, including the portion of the Vaughn landfill, can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands would be required and the installation, maintenance, and movement of a sprung structure on the LECE school property would be challenging. During excavation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of USACE Nationwide 38 permit and South Carolina’s erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (e.g., hay bales, silt fence) would be required during construction. The material would be disposed of at an off-Site Subtitle D landfill.

9.3.4.8 Cost

Under this alternative, there would be capital construction costs for the implementation of the remedy. Other costs for this alternative are associated with the 5-year review as follows:

- | | |
|-------------------------------------|-----------------------------|
| • Construction Costs (Capital) | \$32,200,000 |
| • 30-Year O&M Costs (Present Value) | \$1,100,000 |
| • Total | \$33,300,000 |
| • Cost Range (-30% to +50%) | \$23,300,000 - \$50,000,000 |

A summary of the Remedial Alternative 4 costs is provided in **Table 9-6**.

9.3.5 Combined Remedial Alternative 5: Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs

9.3.5.1 Description

Alternative 5 would include the excavation of the overall Vaughn landfill (areas with and without underlying NAPL); excavation of the impacted sediments on Parcels 3, 4, and 5 and LECE School property; MNA of groundwater; and implementation of LUCs for long term effectiveness. A description of each element in this alternative is provided below and shown on **Figure 9-7**. **Figure 9-8** shows the key features following implementation of Combined Remedial Alternative 5.

Parcel 3: Excavation

This alternative would include the excavation of the NAPL on Parcel 3 as shown on **Figure 9-7**, in addition to the overall Vaughn landfill (including the area which is not underlain by NAPL). The excavation areal extents of Parcel 3 wetlands areas, portion of the Vaughn landfill underlain by NAPL, and area not impacted by NAPL are approximately 1.63, 3.14, and 3.15 acres, respectively. At an expected maximum depth of 7 ft of NAPL, the estimated sediment excavation volume for Parcel 3 wetlands area is approximately 21,000 bcy. Assuming the thickness of the Vaughn landfill C&D debris is 10 ft and the thickness of the area with underlying NAPL is 10 ft, the estimated volume of excavated C&D debris and NAPL are both 50,700 bcy (101,400 bcy total). Assuming a thickness of the Vaughn landfill C&D debris is 10 ft in the area which is not underlain by NAPL, the estimated volume is 50,900 bcy. The excavations would be backfilled with clean soil and sediment along with the restoration of the wetland vegetation. During restoration, the Vaughn landfill footprint would be backfilled to match the existing contours of the surrounding wetlands area. BMPs (e.g., silt fences, sediment tubes, rock ditch check, and turbidity curtains) will be placed to prevent sediment from migrating off-Site during construction.

Parcels 4 and 5: Excavation

The total areal extents of the excavation for Parcels 4 and 5 are 0.24 and 0.20 acres, respectively. At an expected maximum depth of 7 ft bls, the estimated sediment excavation volumes for Parcels 4 and 5 are approximately 2,800 and 2,300 bcy, respectively. The proposed sediment excavation will be completed based on the estimated depth in the RIR-A and on visual observation using standard excavation equipment. BMPs (e.g., silt fences, sediment tubes, rock ditch check, and turbidity curtains) will be placed to prevent sediment from migrating off-Site during construction.

LECE School Property: Excavation

This alternative includes the excavation of the sediments within the wetlands and uplands that are visibly stained with NAPL to a depth of 16 ft bls. This alternative includes a portion of the parking area on LECE School property. The total areal extent of excavation is approximately 1.02 acres, and the estimated volume is 26,400 bcy.

As described above, excavation on the LECE School property would require the implementation of an ANFEMP to address noise and air and fugitive dust emissions. Additionally, the use a temporary sprung structure, if needed, over the excavation area would further reduce potential impacts to the LECE School property during the excavation.

Dewatering and surface water management will likely be required during the excavation. The excavation will be backfilled with soil to match the existing elevations and restored to its preconstruction condition. This alternative meets the RAOs for the LECE School property and

facilitates the removal of the NAPL that the RIR identifies in this area, excluding the parking area on LECE School property.

MNA and LUCs

The remedy for the shallow- and transition-zone groundwater will be MNA; however, with the footprint of the Vaughn landfill being returned to wetlands, due to access constraints the monitoring well network will need to be focused around the Site periphery (outside the wetlands footprint). Based on the results of groundwater sampling and the proposed removal of NAPL-impacted soil and sediments, MNA is a viable alternative for groundwater remediation over the course of an extended period of time (likely greater than 30 years). LUCs would be required to prevent or limit the use of groundwater until the groundwater reaches PRGs and to maintain current property zoning.

9.3.5.2 Overall Protection of Human Health and the Environment

Excavation of the impacted sediment on Parcels 3, 4, and 5 and the LECE School property would help to protect human health and the environment because the NAPL-impacted material would be excavated and removed from the Site. LUCs would also provide an additional layer of protection.

9.3.5.3 Compliance with Applicable or Relevant and Appropriate Requirements

This alternative would meet location- and action-specific ARARs. Chemical-specific ARARs would be met over time through MNA.

9.3.5.4 Long-term Effectiveness and Permanence

Excavation would permanently remove the NAPL from the wetlands on Parcels 3, 4, and 5, the LECE School property and from beneath the Vaughn landfill. This alternative would provide long-term effectiveness. Additionally, FEMA flood insurance maps would need to be updated for the overall removal of Vaughn landfill. Select monitoring wells (around the periphery of the wetland area) would need to be installed to establish and continue long-term groundwater monitoring (for OU-2 and OU-3).

9.3.5.5 Reduction of Toxicity, Mobility, or Volume Through Treatment

The toxicity, mobility, and volume of waste would be reduced at the Site through excavation. However, because the excavated impacted media would be disposed of at a Duke Energy approved Subtitle D landfill without treatment, there is no overall reduction in toxicity or volume of waste. The mobility would be reduced due to placement in an engineered waste containment cell at the landfill. Reduction of the toxicity and volume of COCs and NAPL in the groundwater will occur through natural attenuation over the course of an extended period of time (likely greater than 30 years).

9.3.5.6 Short-Term Effectiveness

Short-term risks for this alternative would include (i) exposure to impacted media by Site workers, (ii) potential impacts to the community from the work on the LECE School property and the high volume of truck traffic, and (iii) short-term impacts to the community from fugitive dust and odors. The risk of exposure to workers would be minimized by implementing engineering controls, wearing appropriate PPE, and complying with OSHA regulations and Site-specific health and safety procedures. Any potential negative short-term impacts to the surrounding community and

environment could be minimized by implementing appropriate engineering controls (e.g., dust control, perimeter air monitoring, spill prevention procedures).

Because of the large, estimated volume of excavated material (183,800 bcy), Alternative 5 will have the greatest negative impacts from truck traffic. It is estimated that approximately 22,700 trucks trips would be required and the timeframe for completion would be approximately 6 to 7 years. The schedule assumes only a portion of the year (8 months) would be available, due to weather and flooding conditions, to conduct the combined remedial alternative construction activities. The disruption to the community could be minimized by limiting when trucks can operate and identifying the least disruptive truck routing plan.

9.3.5.7 Implementability

Excavation of the observed NAPL, including the overall Vaughn landfill including the area which is not underlain by NAPL, can be implemented. Excavation equipment and contractors are readily available. Some specialized equipment for working in the wetlands and for the installation of sheet-piling and operations of dewatering and treatment systems would be required and the installation, maintenance, and movement of a sprung structure on the LECE school property would be challenging. During excavation, it would be necessary to comply with Site-specific health and safety procedures and regulations to minimize the risk of exposing workers to COCs. The substantive requirements of USACE Nationwide 38 permit and South Carolina's erosion and sedimentation control regulations would need to be followed. Temporary erosion and sedimentation control (e.g., hay bales, silt fence) would be required during construction. The material would be disposed of at an off-Site Subtitle D landfill.

9.3.5.8 Cost

Under this alternative, there would be capital construction costs for the implementation of the remedy. Other costs for this alternative are associated with the 5-year review as follows:

• Construction Costs (Capital)	\$38,400,000
• 30-Year O&M Costs (Present Value)	\$1,100,000
• Total	\$39,500,00
• Cost Range (-30% to +50%)	\$27,700,000 - \$59,300,000

A summary of the Remedial Alternative 5 costs is provided in **Table 9-7**.

9.4 Evaluation of Alternatives

A numerical evaluation and comparative discussion of the alternatives is provided below.

9.4.1 Numerical Evaluation and Alternatives Ranking

Table 9-1 provides a numerical evaluation of the relative score of 1 through 6 for each criteria, with 6 being the highest score (i.e., excellent) and 1 being the lowest score (i.e., unacceptable). Scores were assigned to rank the evaluation criterion for each alternative, with the exception of cost. The criteria scores were then summed to give a total score for each alternative for ranking purposes. The rankings for each alternative are listed below:

Alternative	Ranking
Combined Remedial Alternative 1: No Action	11
Combined Remedial Alternative 2: MNA, and LUCs	15
Combined Remedial Alternative 3: Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and LUCs	23
Combined Remedial Alternative 4: Excavation, MNA, and LUCs	30
Combined Remedial Alternative 5: Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs	30

9.4.2 Comparative Evaluation of Alternatives

Table 9-2 presents a comparative summary with descriptions of each alternative relative to the strengths and weaknesses of each evaluation criteria. Alternative 1 was typically considered unacceptable when evaluating the criteria and provided a baseline against which the other combined remedial alternatives could be compared. Alternative 2 scores higher in a few evaluation criteria, when compared to Alternative 1; however, scores are lower when compared to Alternatives 3 through 5, which include incrementally more aggressive actions to address the NAPL. Relative to Alternatives 3 through 5, the only areas in which Alternative 1 and 2 score high are related to implementability, because the actions required to implement these alternatives are minimal.

When comparing the three highest-scoring alternatives, Alternatives 3 through 5, scores are the same for Alternatives 4 and 5 and slightly lower for Alternative 3. Alternative 3 tends to score lower because trace NAPL impacts are not removed from under a portion of the Vaughn landfill, where NAPL impacts would remain underneath the engineered cap and within the barrier wall on a portion of the Vaughn landfill. Alternative 3 also scores lower than Alternatives 4 and 5 because the long-term effectiveness and permanence and overall protection of human health and the environment is anticipated to be less due to the remaining NAPL and the O&M requirements associated with the pumping of groundwater and maintenance of the cap. Additionally, there is more immediate reduction in toxicity, mobility, and volume of NAPL impacts provided by Alternatives 4 and 5 than with Alternative 3.

The major difference between Alternatives 4 and 5 is the complete removal of Vaughn landfill. Since the scope, timeframe, and remedial technologies are similar, these alternatives are scored the same for all categories.

10. REFERENCES

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TABLES

Table 2-1
Site Parcel Information
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Tax Map Serial Number	Parcel ID	Zoning Classification	Land Use	Current Owner
140000300300	Parcel 1	I-1, Industrial District	Vacant lot and location of former MGP operations	Seaboard Coast Line Railroad Company
140000300200	Parcel 2	I-1, Industrial District	Active rail operations, location of a former asphalt manufacturing plant, and debris pile	Seaboard Coast Line Railroad Company
Portion of 0138000100300	Legacy Early College Elementary School	R-6, Single Family Residential	The jurisdictional wetland adjacent to CSXT's Vaughn landfill and a portion of the Legacy Early College Elementary School parking lot	Legacy School Properties LLC
138000100100	Parcel 3	I-1, Industrial District	Vaughn landfill, the jurisdictional wetland adjacent to Vaughn landfill to the west, active rail operations and location of CSX field office, and numerous sewer lines and access manholes	Seaboard Coast Line Railroad Company
54000300100	Parcel 4	R-6, Single Family Residential	Jurisdictional wetland; vacant lot	Seaboard Coast Line Railroad Company
54000600100	Parcel 5	S-1, Services District	Jurisdictional wetland; vacant lot	Seaboard Coast Line Railroad Company

Notes:

1. Tax Map Serial Numbers, Owner information, and zoning obtained from Greenville County Property Appraiser. Last accessed on 31 May 2023.
2. Greenville County Property Appraiser database: gcgis.org/apps/greenvillejs/
3. Seaboard Coast Line Railroad was acquired by CSXT.

Table 4-1
Shallow and Transition Zone Groundwater Preliminary Remediation Goals
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Analyte	Regulatory Standard (µg/L)	Preliminary Remedial Goal (PRG) (µg/L)
Shallow and Transition Zones		
Benzene	5 ¹	5
Naphthalene	25 ²	25
Toluene	1000	1000
Benzo(a)pyrene	0.2	0.2
Styrene	100	100

Notes:

1 - Class GB Groundwater, R.61-58, State Primary Drinking Water Regulations Regulation 61-68, Water Classifications and Standards.

2 - Risk Based Screening Level (RBSL) referenced in Appendix D, Table 1 of the South Carolina Department of Environmental Health and Control (SCDHEC) Quality Assurance Program Plan for the Underground Storage Tank (UST) Management Division.

µg/L - microgram per liter

Table 5-1
Potential Chemical-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC Greenville, SC

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Cleanup of Contaminated Soil (OU1)	Potential State ARAR	<p>For soil, the soil shall be remediated to levels that are no longer a continuing source of groundwater contamination in excess of the site-specific standards. Soil shall be remediated to residential use standards on residential property with the following exceptions:</p> <p>(a) For mixed-use developments where ground level uses are nonresidential and all potential exposure to contaminated soil has been eliminated, the department may allow soil to remain on-site in excess of unrestricted use standards.</p> <p>(b) If soil remediation is impractical because of preexisting structures or if removal is impractical, then all areas of the real property where a person may come into contact with soil must be remediated to unrestricted use standards. All other areas of the real property engineering and institutional controls that are sufficient to protect public health, safety, and welfare and the environment must be implemented.</p>	To Be Considered	Title 44 Chapter 56 Section 200.E.5.
Cleanup of Contaminated Soil (OU1)	Potential State ARAR	<p>For known or suspected carcinogens, site-specific remediation standards shall be established at exposures that represent an excess lifetime cancer risk of one in one million. The site-specific remediation standard may depart from the one-in-one million risk level based on the criteria set out in 40 C.F.R. Section 300.430(e)(9). The cumulative excess lifetime cancer risk to an exposed individual shall not be greater than one in ten thousand based on the sum of carcinogenic risk posed by each contaminant present.</p>	Relevant and appropriate	Title 44 Chapter 56 Section 200.E.7.
Cleanup of Contaminated Sediment (OU1)	Potential Federal ARAR	<p>Based on the sampling completed during the RIR-A, visible NAPL is an indicator that there may be USEPA Region 4 sediment RSVs exceedances in sediment. Removal of impacted sediment for Parcels 3, 4 and 5 and the LECE School property, shall be based on the visual observed NAPL.</p>	Relevant and appropriate	USEPA Region 4 Ecological Risk Assessment Supplemental Guidance, Table 2c, March 2018
Cleanup of Shallow and Transition Zone	Potential State ARAR	<p>Unless site-specific remediation standards are developed per South Carolina's Amendment to Section 44-56-200, Hazardous Waste Cleanup, groundwater quality shall meet the Class GB</p>	Relevant and appropriate	S.C. Code Ann. §§ 41-1-150, Regulation 61-68 Water Classifications and Standards,

Table 5-1
Potential Chemical-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC Greenville, SC

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Groundwater (OU2)		groundwater for organic and inorganic chemicals.		June, 2020. Maximum contaminated levels as set forth in R.61-58, State Primary Drinking Water Regulations, December 2022
Cleanup of Surface Water (OU2)	Potential State ARAR	Unless site-specific remediation standards are developed per South Carolina's Amendment to Section 44-56-200, Hazardous Waste Cleanup, surface water quality shall meet the freshwater classification, human health drinking water MCL for benzo(a)pyrene (0.2 µg/L).	Relevant and appropriate	S.C. Code Ann. §§ 41-1-150, Regulation 61-68 Water Classifications and Standards, June, 2020. Human health drinking water MCLs defined in R.61-68 E.14.b(1)

Notes:

ARAR: applicable, relevant, and appropriate requirement
 COC: constituent of concern
 MCLs: maximum contaminant levels
 MGP: manufactured gas plant
 SC: South Carolina
 TBC: to be considered
 USEPA: United States Environmental Protection Agency

Table 5-2
Potential Location-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Location	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Presence of floodplain designated as such on a map	Federal ARAR	<p>Shall notify, in riverine situations, adjacent communities and State Coordinating Office prior to any alteration or relocation of a watercourse and submit copies of such notification to the Federal Insurance Administrator.</p> <p>Assure that flood carrying capacity within the altered or relocated portion of any watercourse is maintained.</p>	Relevant and applicable	44 C.F.R. § 60.3 (b) (6) and (7)
Presence of floodplain designated as such on a map	Local ARAR	<p>Application for a development permit shall be made to the local administrator. The application permit shall include:</p> <p>A description of the extent of watercourse alteration.</p> <p>An engineering report utilizing detailed methods accepted by the Federal Emergency Management Agency (FEMA), United States Army Corps of Engineers (USACE), and any other applicable federal or state regulatory agencies, on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and, a map showing location of the proposed watercourse alteration or relocation, and notification of the proposal to the appropriate authorities of all affected agencies.</p> <p>An application shall submit to the local administrator any applicable federal or state approval or permits including a conditional letter of map revision (CLOMR).</p> <p>Within 60 days of completion of an alteration of a watercourse, the applicant shall submit as-built certification, by a SC Registered Professional Engineer, to the Local Administrator, FEMA, National Flood Insurance Program as a Letter of Map Revision, and the State of South Carolina, Department of Natural Resources, Flood Mitigation Program.</p> <p>If the configuration of the watercourse, floodway, or base flood elevation for which a detailed Flood Insurance Study has been developed, the applicant shall apply for and must receive approval for a CLOMR with the FEMA National Flood Insurance Program. The floodplain development permit will not be issued until FEMA</p>	Relevant and applicable	Chapter 8, Article II of the Code of Greenville County, South Carolina Entitled "Floods and Flood Control" Sections 8-29.1, 8-29.1.1, 8-29.1.2, 8-29.1.3, 8-29.1.4, 8-29.1.5, 8-29.1.6, 8-29.1.9 and 8-29.1.10

Table 5-2
Potential Location-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Location	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
		<p>has issued the CLOMR. When a CLOMR has been issued for a project, the following shall apply. Within 30 calendar days of completion of construction activities, the applicant shall apply to FEMA for a Letter of Map Revision (LOMR). The applicant is responsible for all technical submissions and fees required to obtain the CLOMR/LOMR.</p> <p>Upon completion of the development, a SC Registered Professional Engineer, Land Surveyor, or Architect (whichever professional is appropriate) shall certify that an alteration was completed in accordance with the submitted plans and previous predevelopment certifications.</p>		
Presence of wetlands and waters of the United States	Federal ARAR	<p>Clean Water Act (CWA) § 404 prohibits the discharge or fill material into waters of the U.S., including adjacent wetlands, without a permit. Both the USEPA and the USACE have jurisdiction over wetlands.</p> <p>The remedial alternatives evaluate excavation within defined water of the U.S. as result the substantive requirements contained in the Nationwide Permit No. 38 to control the discharge of dredge or fill and complete compensatory mitigation of impacted wetlands at a minimum of one-for-one ratio is required if wetland losses exceed 0.1 acres. Wetland restoration is planned after remedial activities are complete.</p> <p>A pre-construction notification shall be prepared and submitted to the USACE for review and approval. The pre-construction notification shall include a statement describing how the mitigation requirement will be satisfied, if needed.</p>	Relevant and applicable	Section 404 CWA, 33,C.F.R 330.1 through 33, C.F.R 330.6, NWP Final Notice, 86 FR 73522, Effective date February 25, 2022, expiration date March 14, 2026
Presence of wetlands and waters of the United States	Federal/State ARAR	<p>Pursuit to CWA § 401 requires South Carolina to issue certification for any activity which requires a federal permit (CWA § 404) and may result in discharge to South Carolina waters.</p> <p>Previous certification in accordance with Section 401 has been granted by the SCDHEC (March 7, 2017) for activities that will result in the placement of fill or dredge of wetlands and waters of</p>	Applicable and relevant	CWA § 401, South Carolina Regulation 61-68, Water Classifications and Standards and the Coastal Zone Management Program 15 C.F.R 930

Table 5-2
Potential Location-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Location	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
		the U.S. under Nationwide Permit 38 and subject to provided conditions detailed in the Nationwide Permit 38.		
Biological Resources	Federal ARAR	<p>Biological evaluation and a reconnaissance-level biological survey has been previously completed and agency consultation with United State Fish and Wildlife Service and SC DNR.</p> <p>Notification shall be made to the USACE must identify if any listed species or designated critical habitat might be affected. The USACE, in consultation with United States Fish and Wildlife Service, will determine whether the proposed activity “may effect” or will have “no effect” to listed species and designated critical habitat.</p>	To be considered	16 U.S.C. §1531 et seq. Section 7 of the Endangered Species Act
Biological Resources	Federal ARAR	The Migratory Bird Treaty Act makes it illegal to take, capture, or kill any migratory bird or the parts, nests, or eggs of any migratory bird. Migratory birds are present. Therefore, the Migratory Bird Treaty Act § 703 is a potential ARAR. Remedial alternatives should avoid taking migratory birds during implementation by avoiding tree clearing activities during nesting season (March 15th to September 15th).	Applicable and relevant	16 U.S.C § 703 et seq.
Biological Resources	State ARAR	South Carolina Code of Laws Title 50 is identified as a potential state ARAR related to the protection of endangered wildlife and birds (not merely migratory birds). The remedial actions should avoid the direct effect of endangered wildlife and birds during implementation.	To be considered	S.C. Code Ann. §§50-15-10 through 90 and 50-15-500
Historical Resources	Federal ARAR	The National Historic Preservation Act § 106 and its implementing regulations 36 CFR 800 are identified as a potential ARAR. This section requires federal agencies consider the effect of their undertakings on historic properties. Remedial alternatives include excavation. If the remedial alternatives are determined to effect areas were historical properties consultation with the state historical preservation office (SHPO) and tribal historic preservation office	To be considered	Section 106, 54 U.S.C § 306108 et seq.

Table 5-2
Potential Location-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Location	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
		(THPO) will be completed.		
Historical Resources	Federal ARAR	The Archaeological and Historic Preservation Act provides for the preservation of historical and archeological data that might otherwise be lost. The Archaeological and Historic Preservation Act is identified as a potential ARAR.	To be considered	54 U.S.C § 312502, 312503, and 312507
Historical Resources	Federal ARAR	The Federal American Graves Protection and Repatriation Act is identified as a potential ARAR. No survey related to Native American burial sites has been conducted, but not expected.	To be considered	25 U.S.C 32 § 3011, 3013
Historical Resources	State ARAR	The South Carolina Archeological Resources Protection Act provides protection of archaeological resources on state lands.	To be considered	S.C. Code Ann. §§ Section 60-13-510 through 540, and 60-13-710

Notes:

- ARAR: applicable, relevant, and appropriate requirement
- DNR: Department of Natural Resources
- MGP: manufactured gas plant
- SC: South Carolina
- SCDHEC: South Carolina Department of Health and Environmental Control
- TBC: to be considered
- USEPA: United States Environmental Protection Agency

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
<i>General Construction Standards – Excavation</i>				
Activities causing storm water runoff (e.g., clearing, grading, excavation)	State ARAR	USEPA’s delegation of the NPDES Permit Program to South Carolina in 1975 did not include the authority to issued NPDES General Permits. In 1992, NPDES general permit authority from USEPA was granted. Since then, 12 statewide NPDES general permits have been issued. Two NPDES general permits are potential ARARs. These include the general permit for Stormwater Discharge from Construction Activities and the general permit for Discharges from Petroleum Contaminated Groundwater.	Applicable and relevant	S.C. Code Ann. Section §§ 48-1-10 et seq, Regulation 61-9.122.6
Activities causing storm water runoff (e.g., clearing, grading, excavation)	Local ARAR	A Major Stormwater Permit is required by the City of Greenville because the proposed construction activities (i) will disturb more than two acres, (ii) are located within a regulatory floodplain, and (iii) will impact a wetland or riparian environment of 0.1 acres or more within an area defined as Waters of the U.S. or Waters of the State.	Applicable and relevant	Chapter 19, Article VII of the Code of Greenville County, South Carolina Entitled “Stormwater Management” Section 19-7-5
Activities causing storm water runoff (e.g., clearing, grading, excavation)	Local ARAR	No person shall do any grading or filling without first obtaining a site preparation/grading permit from the city	Applicable and relevant	Chapter 6, Article III of the Code of Greenville County, South Carolina Entitled “Stormwater Management” Section 6-92
Activities causing storm water runoff (e.g., clearing, grading, excavation)	Local ARAR	A Site Plan Permit is required by the City of Greenville for all construction activity in the City of Greenville.	Applicable and relevant	Chapter 19, Article II of the Code of Greenville County, South Carolina Entitled “Specific standards and other requirements for applications for development approval” Section 19-2-3

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Activities causing storm water runoff (e.g., clearing, grading, excavation)	Federal ARAR	<p>Implement good construction management techniques in accordance with the substantive requirements for permits issued pursuant to 40 CFR § 122.26(c) – storm water discharges associated with construction activities.</p> <p>The Operator shall provide a narrative description of the following:</p> <p>(A) The location (including a map) and the nature of the construction activity</p> <p>(B) The total area of the site and the area of the site that is expected to undergo excavation</p> <p>(C) Proposed measures, including BMPs to control stormwater discharges during construction, including a brief description of applicable State and local erosion and sediment control requirements</p> <p>(D) Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a brief description of applicable State or local erosion and sediment control requirements</p> <p>(E) Estimate of the runoff coefficient of the site and the increase in impervious area after the construction is completed, the nature of fill material and existing data describing the soil or the quality of the discharge</p> <p>(F) The name of the receiving water</p> <p>Note: Above Information to be provided in Remedial Design or Remedial Action Work Plan.</p>	Applicable and Relevant	40 C.F.R Part 122.26(c)(1), 40 C.F.R 122.26(b)(15), 40 C.F.R Part 122.26(c)(1)(ii)

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Activities causing fugitive dust emissions	State ARAR	No person shall cause or permit any fugitive particulate matter to go beyond property boundaries below a height of 150 feet. Necessary precautions shall be taken to prevent such occurrence and be in accordance with good dust control practices as determined by the SCDHEC taking into consideration economic, reasonableness, the seriousness of the dust considerations, and anticipated benefits.	Applicable and relevant	S.C. Code Ann. §§ 48-1-310 and 48-1-320, Regulation 61-62.6
Activities causing noise	Local ARAR	<p>Exemptions specifically indicates that the sounds produced by construction machinery, heavy duty equipment, and machines and equipment used for construction, repair, cleaning, and maintenance of buildings, streets, or public or private premises when operated between the hours of 7:00 a.m. and 9:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 7:00 p.m. on Saturdays and 9:00 a.m. and 7:00 p.m. on Sundays are exempt.</p> <p>In general, actions will be taken to limit noise to less than 80 decibels adjacent to occupied structures, which is consistent with the City of Greenville daytime noise limit for the Central Business District for the hours between 7:00 am and 10:00 pm.</p>	To be considered	Chapter 16, Article II Division 3 of the Code of Greenville County, South Carolina Entitled "Noise" Sections 16-92 and 16-95
<i>Waste Generation, Characterization—Primary waste (excavated soils/sediments)</i>				
Characterization of solid waste (all primary and secondary wastes)	Federal ARAR	Must determine if solid waste is hazardous waste or if waste is excluded under 40 CFR § 261.4	Applicable	40 C.F.R § 262.11(a)

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Characterization of solid waste (all primary and secondary wastes)	Federal ARAR	Must determine if waste is listed as a hazardous waste under 40 CFR Part 261.	Applicable	40 C.F.R § 262.11(b)
Characterization of solid waste (all primary and secondary wastes)	Federal ARAR	<p>Must determine whether the waste is (characteristic waste) identified in subpart C of 40 CFR part 261 either</p> <ul style="list-style-type: none"> • by testing the waste according to the methods set forth in subpart C of 40 CFR part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21, or • by applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used. 	Applicable	40 C.F.R § 262.11(c)(1) and (2)
Characterization of solid waste (all primary and secondary wastes)	Federal ARAR	Must refer to 40 CFR Parts 261, 262, 264, 265, 266, 268, and 273 for possible exclusions or restrictions pertaining to management of the specific waste.	Applicable	40 C.F.R § 262.11(d)
Characterization of hazardous waste (all primary and secondary wastes)	Federal ARAR	Must obtain a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 CFR §§ 264 and 268	Applicable	40 C.F.R § 264.13(a)(1)
Determinations for management of hazardous waste	Federal ARAR	<p>Must determine each USEPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 CFR 268 et seq...</p> <p>Note: This determination may be made concurrently with the hazardous waste determination required in Sec. 262.11 of this chapter.</p>	Applicable	40 C.F.R § 268.9(a)

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
Determinations for management of hazardous waste	Federal ARAR	Must determine the underlying hazardous constituents [as defined in 40 CFR 268.2(i)] in the characteristic waste.	Applicable	40 C.F.R § 268.9(a)
Determinations for management of hazardous waste	Federal ARAR	<p>Must determine if the hazardous waste meets the treatment standards in 40 CFR 268.40, 268.45, or 268.49 by testing in accordance with prescribed methods or use of generator knowledge of waste.</p> <p>Note: This determination can be made concurrently with the hazardous waste determination required in 40 CFR 262.11.</p>	Applicable	40 C.F.R § 268.7(a)
Mitigation and Site Restoration	Federal ARAR	<p>Must complete mitigation of wetlands and waters of the U.S. Wetland mitigation must be at a rate of one-to-one. Since wetland restoration is planned after remedial activities are complete, mitigation may not be required.</p> <p>The mitigation must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent to water of the U.S. The mitigation plan for wetland and waters of the U.S will include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements). Only native species shall be planted. The riparian buffer adjacent to the wetlands and waters of the U.S. shall be 25 feet, unless otherwise specified in coordination with the USACE.</p>	Applicable and relevant	33 U.S.C § 1344
Mitigation and Site Restoration	Federal ARAR	Compensatory mitigation projects provided to offset losses of aquatic resources must comply with applicable provisions of 33 CFR 332.	Applicable and relevant	33 C.F.R 332
Mitigation and Site Restoration	State ARAR	Excavated areas are required to be stabilized with vegetative cover with a density of 70 percent of the natural background vegetative cover	Applicable and relevant	S.C. Code Section Ann. §§48-1-10 et seq., 1976, 33 USC § 1251 et. seq.

Table 5-3
Potential Action-Specific ARARs and TBCs
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, South Carolina

Action	Potential Local, State, or Federal ARAR	Requirements	Classification	Citation
<i>Declaration of Land Use Controls</i>				
Restrictive Covenant	State ARAR	If hazardous substances that exceed residential standards exist after the actions completed in accordance with Voluntary Cleanup Contract, a restrictive covenant will be filed and recorded. An annual report shall be filed with the SCDHEC by May 31 of each year detailing the current land uses and compliance with the restrictive covenants for as long as the restrictive covenant remains in place.	Applicable	S.C. Code Ann. §§ 44-56-710 through 760
<i>Management of Wastewater from Remedial Activities</i>				
Discharge of Contaminated Groundwater	State ARAR	If a part of groundwater treatment requires the discharge to surface water, a NPDES general permit is required. Must attain or maintain a specified water quality through water-quality-related effluent limits established under the NPDES general permit.	To be considered	S.C. Code Ann. Section §§ 48-1-10 et seq, Regulation 61-9.122.6
<i>In Situ Injections to Groundwater</i>				
Corrective Action Wells Used for Treatment	State ARAR	If a groundwater treatment includes injection of water and/or water and remedial product, SCDHEC regulates that type of remedial activity through the underground injection control (UIC) program permits to operate facilities. To injection of water and/or water and remedial product a UIC Class V.A permit is needed.	To be considered	S.C. Code Ann. §§ 48-1-10 through 48-1-350

Table 5-3
Potential Action-Specific ARARs and TBCs
CSXT Bramlett Road Site
VCC 16-5857-RP
Greenville, South Carolina

Notes:

ARAR: applicable, relevant, and appropriate requirement

MGP: manufactured gas plant

NPDES: National Pollutant Discharge Elimination System

SC: South Carolina

SCDHEC: South Carolina Department of Health and Environmental Control

TBC: to be considered

USEPA: United States Environmental Protection Agency

Table 6-1
OU-1 Soil and Sediment Technology Types and Process Options Screening
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Technology and Process Option	Effectiveness	Implementability	Cost	Retained?
No Action	Low	High	Low	Yes ¹
Land Use Controls	Moderate	High	Low	Yes ²
Parcel 3 and Legacy Early College Elementary School				
Excavation ³	High	High	High	Yes
Selective Excavation ⁴	Moderate	High	Moderate	Yes
Containment and Capping	Moderate	High	Moderate	Yes
In-Situ Stabilization	High	Low	Moderate	No
Parcels 4 and 5				
Excavation	High	High	Moderate	Yes

Notes:

1 - Retained in order to provide a baseline for comparison of other remedial alternatives.

2 - Retained only in combination with other technologies.

3 - Sediment with observed NAPL to be removed. Vaughn landfill excavation strategy could be NAPL focused or could be a complete removal of Vaughn landfill.

4 - Only includes wetlands and a small portion of the Vaughn landfill.

Table 7-1
OU-2 Surface Water and Groundwater Technology Types and Process Options Screening
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Technology and Process Option	Effectiveness	Implementability	Cost	Retained?
No Action	Low	High	Low	Yes ¹
Land Use Controls	Moderate	High	Low	Yes ²
Surface Water				
None ³				
Parcels 4 and 5				
MNA	Moderate	High	Low	Yes ²
Hydraulic Control	High	High	Moderate	Yes ²
In situ chemical oxidation	Low	Moderate	Moderate to High	No

Notes:

1 - Retained in order to provide a baseline for comparison of other remedial alternatives.

2 - Retained only in combination with other technologies.

3 - Impacts to surface water are expected to be addressed through monitored natural attenuation (MNA) after the successful remediation of source material in soil, sediment, and groundwater.

Table 9-1
OU-1 and OU-2 Combined Remedial Alternative Screening
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Criterion	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	No Action	MNA and LUCs	Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and	Excavation, MNA, and LUCs	Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs
Overall Protection of Human Health and the Environment	1	2	4	6	6
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)	1	1	5	6	6
Long-term Effectiveness and Permanence	1	2	3	5	5
Reduction of Toxicity, Mobility, and Volume through Treatment	1	1	3	5	5
Short-term Effectiveness	1	3	4	4	4
Implementability	6	6	4	4	4
Total Score	11	15	23	30	30
Cost Estimate ^{1,2}	\$0.022 MM	\$1.35 MM	\$18.6 MM	\$33.3 MM	\$39.5 MM
Implementation Schedule (Years) ^{3,4}	0	0	2 to 3	5 to 6	6 to 7
Expected Time To Achieve Remedial Goals by Operable Unit	OU-1	> 30 years	> 30 years	> 30 years	5 to 6
	OU-2	> 30 years	> 30 years	> 30 years	6 to 7
		> 30 years	> 30 years	> 30 years	> 30 years

Notes:

MNA - Monitored Natural Attenuation

LUCs - Land Use Controls

MM - Million Dollars

OU - Operable Unit

1. A cost range estimate was prepared in accordance with the EPA Feasibility Study Guidance with a -30% and +50% range and are shown in Tables 9-4 through 9-7.
2. For Post Construction Costs, a present value was calculated utilizing a 7% discount rate consistent with *A Guide To Developing and Documenting Cost Estimates During the Feasibility Study*, EPA July 2000.
3. While implementation schedule is not part of the screening criteria, this has been provided for clarity.
4. The schedule assumes a working window of eight months of the calendar year based on weather.

Scoring:

- 1 - Unacceptable, does not meet the minimum requirements.
- 2 - Alternative is on the Low end of the alternative criteria.
- 3 - Alternative is Fair with respect to meeting the alternative criteria.
- 4 - Alternative is Good with respect to meeting the alternative criteria.
- 5 - Alternative is Very Good with respect to meeting the alternative criteria.
- 6 - Alternative is Excellent with respect to meeting the alternative criteria.

Table 9-2
OU-1 and OU-2 Combined Remedial Comparative Evaluation
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Criterion	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	No Action	MNA and LUCs	Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and LUCs	Excavation, MNA, and LUCs	Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs
Overall Protection of Human Health and the Environment	Alternative 1 does not provide protection of human health or the environment	<ul style="list-style-type: none"> Alternative 2 provides fair protection of human health and the environment through the use of MNA and LUCs to minimize the potential for contact with NAPL NAPL remains in place 	<ul style="list-style-type: none"> Alternative 3 provides several layers (selective excavation, capping, and LUC) of protections for human health and the environment Alternative 3 does leave NAPL-impacted sediments in place within the containment area on Vaughn landfill Alternative 3 does leave trace NAPL-impacted sediments in place outside of the containment area underneath Vaughn landfill, which is addressed by Alternative 4 and 5 	<ul style="list-style-type: none"> Alternative 4 provides the complete removal of RI delineated NAPL-impacted sediments Alternative 4 provides additional protection through the LUCs and MNA of OU-2 	<ul style="list-style-type: none"> Alternative 5 provides the complete removal of RI delineated NAPL-impacted sediments and the removal of Vaughn landfill Alternative 5 provides additional protection through the LUCs and MNA of OU-2 The removal of the additional inert C&D debris from Vaughn landfill does not result in additional protection of human health or the environment when compared to Alternative 4
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)	Alternative 1 does not comply with chemical-specific ARARs because no action would be taken to reduce contaminant concentrations	<ul style="list-style-type: none"> Alternative 2 does not comply with chemical-specific ARARs because no action would be taken to remove NAPL MNA would reduce contaminant concentrations through natural degradation 	<ul style="list-style-type: none"> Alternatives 3 through 5 would similarly meet the location- and action-specific ARARs Chemical-specific ARARs would take longer to meet, since NAPL is being left in place with Alternative 3 	<ul style="list-style-type: none"> Alternatives 3 through 5 would similarly meet the location- and action-specific ARARs Chemical-specific ARARs for OU-1 would be met within the timeframe of remedial action implementation Chemical-specific ARARs for OU-2 would see reduced concentrations based on the remediation of OU-1 and continued reduction through MNA 	<ul style="list-style-type: none"> Alternatives 3 through 5 would similarly meet the location- and action-specific ARARs Chemical-specific ARARs for OU-1 would be met within the timeframe of remedial action implementation Chemical-specific ARARs for OU-2 would see reduced concentrations based on the remediation of OU-1 and continued reduction through MNA
Long-term Effectiveness and Permanence	<ul style="list-style-type: none"> Alternative 1 would have minimal long-term effectiveness since NAPL is not removed or contained Alternative 1 would not be able to measure the long-term effectiveness since monitoring is not proposed 	<ul style="list-style-type: none"> Alternative 2 would have minimal long-term effectiveness since NAPL is not removed or contained Alternative 2 would be able to monitor the effectiveness of MNA as a remedial technology 	<ul style="list-style-type: none"> The majority of NAPL is excavated in this remedial alternative A limited area of NAPL would be contained within the barrier wall and visually observed trace NAPL would be left under a portion of the Vaughn landfill to remain Installation of the barrier wall, cap, and hydraulic control systems would require routine O&M Vaughn landfill would provide access for MNA monitoring and access options to address OU-3 in the future 	<ul style="list-style-type: none"> Excavation would permanently remove the NAPL in OU-1 on Parcels 3, 4, and 5, the LECE School property and from beneath the Vaughn landfill Select monitoring wells would need to be reinstalled to establish and continue long-term groundwater monitoring (for OU-2 and OU-3). The ability to install monitoring wells will be more difficult than for Alternative 3 because the primary area where monitoring wells currently exist will become wetlands 	<ul style="list-style-type: none"> Excavation would permanently remove the NAPL in OU-1 on Parcels 3, 4, and 5, the LECE School property and from beneath the Vaughn landfill Select monitoring wells would need to be reinstalled to establish and continue long-term groundwater monitoring (for OU-2 and OU-3). The ability to install monitoring wells will be more difficult than for Alternatives 3 and 4 because the overall landfill will be removed and the area will be wetlands The removal of the additional inert C&D debris from Vaughn landfill does not affect the long-term effectiveness and permanence related to NAPL impacts when compared to Alternative 4
Reduction of Toxicity, Mobility, and Volume through Treatment	Alternative 1 would not reduce toxicity, mobility, or volume through treatment	Alternative 2 would not reduce toxicity, mobility, or volume through treatment	<ul style="list-style-type: none"> The toxicity, mobility, and volume of waste would be reduced at the Site through selective excavation and groundwater extraction and treatment within the capped area The mobility would be reduced due to placement in an engineered waste containment cell at a permitted landfill and the reduction in mobility provided by the barrier wall and cap Reduction of the toxicity and volume of COCs and NAPL in the groundwater will occur through natural attenuation over the course of an extended period of time (likely greater than 30 years) A limited area of NAPL contained within the barrier wall and visually observed trace NAPL would be left under a portion of the Vaughn landfill, and thus Alternative 3 would not provide a reduction of toxicity, mobility, or volume for these impacts (Alternatives 4 and 5 address this NAPL) 	<ul style="list-style-type: none"> The toxicity, mobility, and volume of waste would be reduced at the Site through excavation The mobility would be reduced due to placement in an engineered waste containment cell at a permitted landfill Reduction of the toxicity and volume of COCs and NAPL in the groundwater will occur through natural attenuation over the course of an extended period of time (likely greater than 30 years) 	<ul style="list-style-type: none"> The toxicity, mobility, and volume of waste would be reduced at the Site through excavation The mobility would be reduced due to placement in an engineered waste containment cell at a permitted landfill Reduction of the toxicity and volume of COCs and NAPL in the groundwater will occur through natural attenuation over the course of an extended period of time (likely greater than 30 years) The removal of the additional inert C&D debris from Vaughn landfill does not reduce the toxicity, mobility, or volume through treatment of NAPL impacts when compared to Alternative 4

Notes on Page 2.

Table 9-2
OU-1 and OU-2 Combined Remedial Comparative Evaluation
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Criterion	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	No Action	MNA and LUCs	Selective Excavation, Barrier Wall, Landfill Capping, Hydraulic Control, MNA, and LUCs	Excavation, MNA, and LUCs	Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs
Short-term Effectiveness	<ul style="list-style-type: none"> Alternative 1 would not be effective over a short-term period since the time until RAOs are achieved would be extended (heavily influencing score) Since there will be no remedial action there will be no risk to the community and workers during implementation 	<ul style="list-style-type: none"> Alternative 2 would not be effective over a short-term period since the time until RAOs are achieved would be extended (heavily influencing score) The remedial action requires routine groundwater monitoring and the risk to the community and workers during implementation would be minimal relative to Alternatives 3 through 5 which include the excavation and hauling of significant volumes of material, trucking of soils, and flooding/construction risks 	<ul style="list-style-type: none"> The time to achieve the RAOs would be an extended duration for both OU-1 and OU-2 Alternative 3 poses a higher risk to the community and workers during implementation due to the active remedial technologies (e.g., heavy equipment, trucking, and sheetpile installation) Since the timeframe of implementation is less for Alternative 3 than Alternatives 4 and 5, the risk of environmental impacts due to the remedial action would be lower 	<ul style="list-style-type: none"> The time to achieve the RAOs for OU-1 would be based on the time of remedial action implementation The time to achieve the RAOs would be an extended duration for OU-2 Alternative 4 poses a higher risk to the community and workers during implementation than Alternative 3 due to the active remedial technologies (e.g., heavy equipment and trucking) and potential for flooding-related environmental impacts Since the timeframe of implementation is longer for Alternative 4 than Alternative 3, the risk of environmental impacts due to the remedial action would be higher 	<ul style="list-style-type: none"> The time to achieve the RAOs for OU-1 would be based on the time of remedial action implementation The time to achieve the RAOs would be an extended duration for OU-2 and the removal of the additional inert C&D debris from Vaughn landfill does not affect the timeframe to achieve RAOs for OU-2 when compared to Alternative 4 Alternative 5 poses a higher risk to the community, workers, and the environment than Alternative 3 during implementation due to the active remedial technologies (e.g., heavy equipment and trucking) Since the timeframe of implementation is longer for Alternative 5 than Alternative 3, the risk of environmental impacts due to the remedial action would be higher The short-term effectiveness of Alternatives 4 and 5 are scored the same since both alternatives remove RI delineated NAPL from OU-1.
Implementability	Since there is no action taking place, Alternative 1 is readily implementable	The technical and administrative feasibility of Alternative 2 makes the approach readily implementable	<ul style="list-style-type: none"> Excavation equipment and contractors are readily available and some specialized equipment for working in the wetlands would be required During a constructability review by three remedial contractors, the ability to conduct excavations to the targets depths while managing water (groundwater and surface water) was identified as a significant challenge Approval from USACE, SCDHEC, and local agencies is expected Off-Site disposal is readily available in Subtitle D landfills Installation of a containment barrier into saprolite and fractured bedrock will have some implementation challenges Installation of the TreeWell® system within the C&D debris may have minor construction implementation challenges 	<ul style="list-style-type: none"> Excavation equipment and contractors are readily available and some specialized equipment for working in the wetlands would be required During a constructability review by three remedial contractors, the ability to conduct excavations to the targets depths while managing water (groundwater and surface water) was seen as a significant challenge Approval from USACE, SCDHEC, and local agencies is expected Off-Site disposal is readily available in Subtitle D landfills 	<ul style="list-style-type: none"> Excavation equipment and contractors are readily available and some specialized equipment for working in the wetlands would be required During a constructability review by three remedial contractors, the ability to conduct excavations to the targets depths while managing water (groundwater and surface water) was seen as a significant challenge Approval from USACE, SCDHEC, and local agencies is expected Off-Site disposal is readily available in Subtitle D landfills

Notes:

- MNA - Monitored Natural Attenuation
- LUCs - Land Use Controls
- O&M - Operations and Maintenance
- RI - Remedial Investigation
- RAOs - Remedial Action Objectives
- USACE - United States Army Corps of Engineers
- SCDHEC - South Carolina Department of Health and Environmental Control
- C&D - Construction and Demolition
- OU - Operable Unit
- COCs - constituents of concern
- NAPL - non-aqueous phase liquid
- ARAR - Applicable or Relevant and Appropriate Requirements

Table 9-3
Historical USGS Data Summary
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Month	Average Discharge, cfs ¹	Average Precipitation, in ¹	Average Gauge Height, ft ¹
January	120.73	3.89	1.08
February	125.59	4.58	1.09
March	99.11	3.64	1.01
April	110.98	5.12	1.05
May	103.03	4.89	1.00
June	61.05	3.34	0.85
July	51.60	3.13	0.80
August	70.60	3.76	0.87
September	48.79	2.50	0.78
October	68.31	3.99	0.85
November	92.42	3.87	0.94
December	110.81	5.35	1.03

Notes:

1. Data gathered from the USGS gauge (02164000) along the Reedy River for the last 10 years.
2. May to December is the expected work schedule.
3. cfs - cubic feet per second
4. in - inches
5. ft - feet
6. The data presented in the table are shown graphically below.

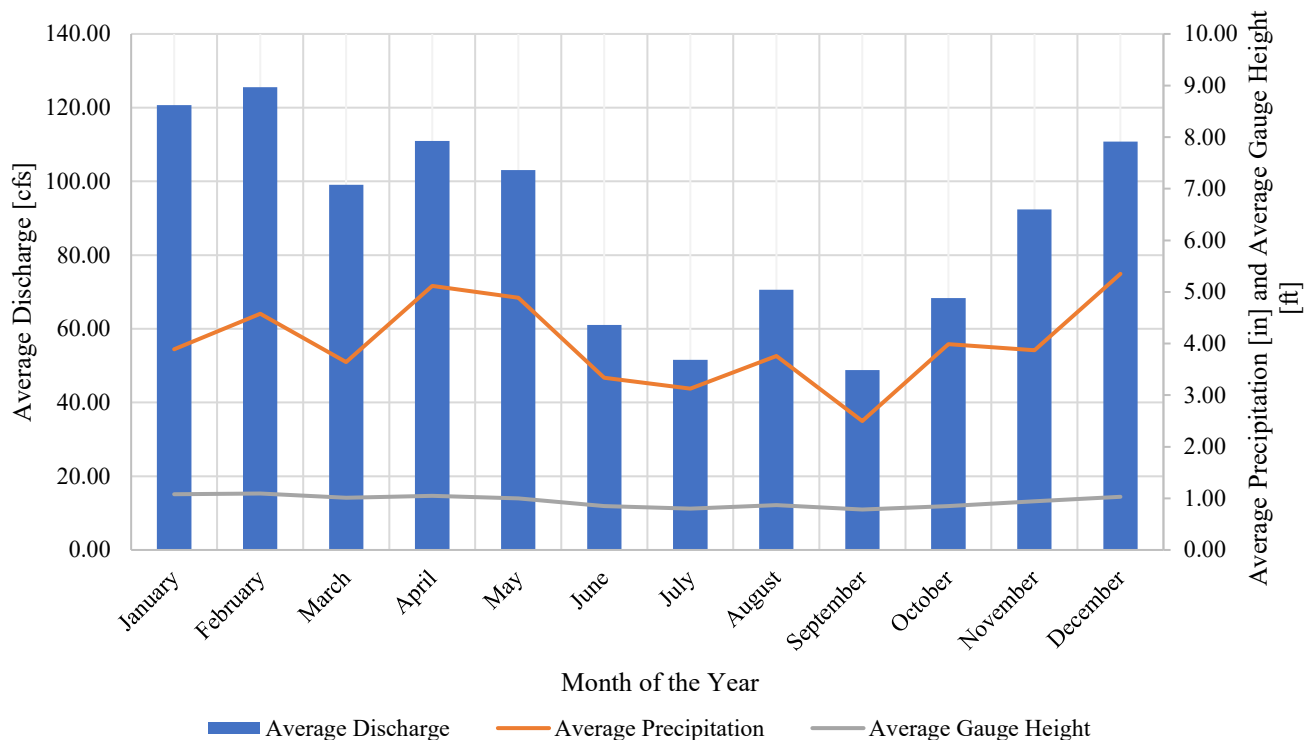


Table 9-4
OU-1 and OU-2 Combined Remedial Alternative 2 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Alternative Description: MNA, and LUCs.

- 30 years of MNA monitoring
- Implementation of LUCs

Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
I. ENGINEERING & CQA COSTS					
001	Design/Modeling/Statistical Evaluation	LS	1	\$100,000	\$100,000
002	Reporting/As-Builts/LUC Documentation/Surveys/Legal	LS	1	\$50,000	\$50,000
PRE-CONSTRUCTION/START-UP COSTS TOTAL					\$150,000
II. PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS					
003	MNA Sampling and Lab Analyses & Semi-annual Reports*	Year	30	\$68,000	\$900,000
004	Five Year Regulatory Review*	LS	6	\$10,000	\$22,000
005	Monthly Site O&M/LUC Visit*	Year	30	\$15,000	\$200,000
PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS TOTAL*					\$1,200,000
III. SUMMARY					
Total Capital Costs (Engineering)					\$150,000
Present Value of Annual O&M Costs - 30 Year*					\$1,200,000
Subtotal Costs					\$1,350,000
Cost Estimate Range (-30% to +50%)					\$950,000 - \$2,000,000

Notes:

CY = cubic yards, SY = square yards, LF = linear feet, LS = Lump Sum, AC = acre., kWh = kilowatt hour

"Unit Rate" and "Extended Amount" column items are provided in United States dollar (USD) and rounded.

* Present value calculated utilizing a 7% discount rate consistent with *A Guide To Developing and Documenting Cost Estimates During the Feasibility Study*, EPA July 2000.

Table 9-5
OU-1 and OU-2 Combined Remedial Alternative 3 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Alternative Description: Selective Excavation, Barrier Wall, Capping a portion of CSXT's Vaughn Landfill, Hydraulic Control, MNA, and LUCs.

- Clear and grub LECE School excavation area and CSXT's Vaughn Landfill
- Drive sheet pile to 17-ft depth, north end of Vaughn Landfill.
- Construct a low permeability cap (geomembrane with drainage layer and 2 ft of soil) over north end of CSXT's Vaughn Landfill
- Drive sheet pile around LECE School wetlands and turnaround/parking area on LECE School property to support excavation
- Excavate LECE School wetlands and turnaround/parking area on LECE School property to a depth of 16 ft bls
- Restore wetlands LECE School Property
- Clear and grub Parcels 3, 4, and 5
- Install ReWa access
- Select excavation of Parcels 3, 4, and 5
- Restore Wetlands on Parcels 3, 4, and 5
- Install TreeWell and two groundwater extraction wells with pumps on north end of CSXT's Vaughn Landfill and discharge to POTW. Operate Groundwater extraction for 10 year until trees are established.
- 30 years of MNA monitoring

Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
I. ENGINEERING & CQA COSTS					
001	Design, Specifications, and Bidding Support	LS	1	\$90,000	\$90,000
002	Environmental Resource Permitting	LS	1	\$70,000	\$70,000
003	CQA	Day	345	\$1,500	\$517,000
004	Site Remediation Air and Vibration Monitoring During Construction	Months	14.6	\$23,000	\$336,000
005	As-Built Drawings and Reporting	LS	1	\$40,000	\$40,000
PRE-CONSTRUCTION/START-UP COSTS TOTAL					\$1,100,000
II. CONSTRUCTION COSTS					
General					
006	Mobilization/Demobilization	LS	1	\$50,000	\$50,000
007	Contractor Construction Support (Project Management, Trailers, CQC)	Month	14.6	\$50,000	\$729,000
008	Construction Permitting	LS	1	\$13,000	\$13,000
009	Surveying	Each	3	\$5,000	\$15,000
010	Installation of Silt Fence	LF	6,000	\$5.00	\$30,000
011	Installation of Security Fencing and Construction Entrance/Exit	LF	2,000	\$33.00	\$66,000
CSXT's Vaughn Landfill, Barrier Wall Installation, Surface Cap					
012	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	1.57	\$7,500	\$12,000
013	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	4.72	\$15,000	\$71,000
014	Sheet Pile Installation	SF	18,200	\$70.00	\$1,274,000
015	Low Permeability Surface Cap Installation	SQFT	68,700	\$0.70	\$49,000
016	2-ft Soil Cap	CY	5,089	\$30.00	\$153,000
017	Cap Restoration (Hydroseeding)	SQFT	136,786	\$0.33	\$46,000
LECE School Property Wetland Excavation and Restoration					
018	Clearing, Grubbing, and Stripping for Surface Sediment and Soil Removal (light)	AC	0.26	\$7,500	\$2,000
019	Clearing, Grubbing, and Stripping for Surface Sediment and Soil Removal (heavy)	AC	0.77	\$15,000	\$12,000
020	Sheet Pile Installation around LECE Area, Including Turnaround and Parking (16ft bls)	SF	25,000	\$70.00	\$1,750,000
--	Sprung Structure for Excavation on LECE Property				
021	Design	LS	1	70,000	\$70,000
022	Mobilization	LS	1	775,000	\$775,000
023	Electrically and Lighting Systems	LS	1	75,000	\$75,000
024	Relocations	Each	6	\$85,000.00	\$510,000
025	Monthly Rental	Month	7	\$59,800.00	\$408,000
026	Demobilization	LS	1	\$120,000.00	\$120,000
027	Electricity	Month	7	\$12,000.00	\$82,000
028	Excavation of LECE Area, Including Turnaround and Parking (16ft bls)	CY	26,400	\$18.00	\$476,000
029	Dewatering System (12 point w/ moves, fuel and operation) (50% Operational)	Week	15	\$9,500	\$140,000
030	LGAC Treatment for Dewatering Fluids (MGP contact water management) (50% Operational)	Week	15	\$10,000	\$147,000
031	Fly-Ash Mixing and Off-site Disposal of Excavated Sediment and Soil (50% of sediment/soil requires mixing)	CY	13,200	\$10.00	\$132,000
032	Off-site Disposal of Excavated Sediment and Soil	TON	38,808	\$60.00	\$2,329,000
033	Backfill and Regrading of LECE Area	CY	26,400	\$30.00	\$792,000
034	Wetland Restoration (Planting 20 trees per ac and wetland plants)	AC	1.02	\$25,000	\$26,000

Table 9-5
OU-1 and OU-2 Combined Remedial Alternative 3 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
035	Water Management/Pump Around	LS	1.00	\$750,000	\$750,000
--	Fugitive Air Emissions Treatment and Monitoring Systems				
036	Mob/Delivery with 20,000 lbs Virgin Carbon	LS	1	\$59,000	\$59,000
037	Crane for Off-loading/Setup and then Removal	LS	1	\$6,000	\$6,000
038	Monthly System Rental	Month	3.4	\$4,000	\$14,000
039	16-inch Hose	LF	500	\$45	\$23,000
040	Filter Elements	Each	100	\$150	\$15,000
041	Demobilization/Carbon Disposal	LS	1	\$30,000	\$30,000
042	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
Select Excavation on Parcel 3 South, 3 North, 4 and 5					
043	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	0.57	\$7,500	\$5,000
044	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	1.72	\$15,000	\$26,000
045	Crushed Limerock Entrance/Exit/Drive on Landfill and Work Pad Area	SF	10,000	\$0.93	\$10,000
046	ReWa Access	SF	16,000	\$0.93	\$15,000
047	Installation of Construction Mats	LS	1	\$50,000	\$50,000
048	Dewatering System (12 point w/ moves, fuel and operation) (30% Operational)	Week	10	\$9,500	\$95,000
049	LGAC Treatment for Dewatering Fluids (MGP contact water management) (30% Operational)	Week	10	\$10,000	\$100,000
050	Excavation Parcel 3 North	CY	5,700	\$18	\$103,000
051	Excavation Parcel 3 South	CY	15,300	\$18	\$276,000
052	Excavation Parcel 4	CY	2,800	\$18	\$51,000
053	Excavation Parcel 5	CY	2,300	\$18	\$42,000
054	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
055	Fly-Ash Mixing of Excavated Sediment (50% of sediment requires mixing)	CY	13,050	\$10	\$131,000
056	Off-site Disposal (T&D) of Excavated Sediments, Parcels 3 South, 3 North, 4 and 5	TON	38,367	\$60	\$2,303,000
057	Backfill and Regrading of Parcels 3 South, 3 North, 4 and 5	CY	30,000	\$30	\$900,000
058	Restoration of Disturbed Areas (Vegetation) (Planting 20 trees per ac and wetland plants)	AC	3.29	\$25,000	\$83,000
059	Check Dams	Each	2	\$2,500	\$5,000
--	CSXT's Vaughn Landfill				
060	Excavate CSXT's Vaughn Landfill (Parcel 3 South)	CY	3,900	\$18	\$71,000
061	Off-site Disposal (T&D) of Excavated Landfill Debris	Ton	5,460	\$60	\$328,000
--	Temporary Water By-pass for Parcels 4 and 5				
062	Temp Ditch Excavation	BCY	3,200	\$18.00	\$58,000
063	Temp Ditch Backfill	BCY	3,200	\$30.00	\$96,000
064	Vaughn Landfill Ditch Block/Minor Stormwater Work	LS	1	\$5,000	\$5,000
Hydraulic Control System Materials and Installation					
065	Pumps	LS	2	\$12,500	\$25,000
066	Recovery Well	LS	1	\$6,200	\$6,200
067	GAC Canister	LS	1	\$12,500	\$12,500
068	Install Trees for Hydraulic Control	AC	1.6	\$30,000	\$48,000
CONSTRUCTION COSTS TOTAL					\$16,200,000
III. PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS					
069	Sampling and Lab Analyses & Annual Reports *	Year	30	\$68,000	\$900,000
070	Five Year Regulatory Review *	LS	6	\$10,000	\$22,000
071	Electricity *	kWh	10	\$500.00	\$4,000
072	ERP Renewal *	YR	10	\$1,250	\$10,000
073	Discharge Fee to a POTW *	YR	10	\$7,800	\$59,000
074	Pump/GAC Repairs/Replacement *	YR	10	\$12,500	\$94,000
075	Monthly Site O&M/LUC Visit *	Year	30	\$15,000	\$200,000
PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS TOTAL *					\$1,300,000

Table 9-5
OU-1 and OU-2 Combined Remedial Alternative 3 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
IV. SUMMARY					
	Total Capital Costs (Engineering & CQA and Construction)				\$17,300,000
	Present Value of Annual O&M Costs - 30 Year*				\$1,300,000
	Subtotal Costs				\$18,600,000
	Cost Estimate Range (-30% to +50%)				\$13,000,000 - \$28,000,000

Notes:

CY = cubic yards, SY = square yards, LF = linear feet, LS = Lump Sum, AC = acre., kWh = kilowatt hour, ERP = Environmental Resource Permit, LUC = Land Use Control
 "Unit Rate" and "Extended Amount" column items are provided in United States dollar (USD) and rounded.

* Present value calculated utilizing a 7% discount rate consistent with *A Guide To Developing and Documenting Cost Estimates During the Feasibility Study*, EPA July 2000.

Table 9-6
OU-1 and OU-2 Combined Remedial Alternative 4 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Alternative Description: Excavation, MNA, and LUCs.					
- Clear and grub LECE School excavation area, CSXT's Vaughn Landfill and Parcels 3, 4, and 5 - Install ReWa access - Excavate LECE School wetlands (excluding turnaround/parking area on LECE School property) to a depth of 16 ft bls - Select excavation of Parcels 3, 4, and 5 - Excavate a portion of CSXT's Vaughn Landfill and NAPL beneath that portion of the landfill - Restore Wetlands LECE School Property, Parcels 3, 4, and 5 and the excavated portion of CSXT's Vaughn Landfill - 30 years of MNA monitoring					
Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
I. ENGINEERING & CQA COSTS					
001	Design, Specifications, and Bidding Support	LS	1	\$90,000	\$90,000
002	Environmental Resource Permitting	LS	1	\$70,000	\$70,000
003	CQA	Day	677	\$1,500	\$1,016,000
004	Site Remediation Air and Vibration Monitoring During Construction	Months	28.6	\$23,000	\$659,000
005	As-Built Drawings and Reporting	LS	1	\$40,000	\$40,000
PRE-CONSTRUCTION/START-UP COSTS TOTAL					\$1,900,000
II. CONSTRUCTION COSTS					
General					
006	Mobilization/Demobilization	LS	1	\$50,000	\$50,000
007	Contractor Construction Support (Project Management, Trailers, CQC)	Month	28.6	\$50,000	\$1,432,000
008	Construction Permitting	LS	1	\$13,000	\$13,000
009	Surveying	Each	3	\$5,000	\$15,000
010	Installation of Silt Fence	LF	6,000	\$5.00	\$30,000
011	Installation of Security Fencing and Construction Entrance/Exit	LF	2,000	\$33.00	\$66,000
CSXT's Vaughn Landfill					
--	CSXT's Vaughn Landfill				
012	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	1.57	\$7,500	\$12,000
013	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	4.72	\$15,000	\$71,000
014	Excavation of CSXT's Vaughn Landfill (10 ft)	CY	50,700	\$18.00	\$913,000
015	Off-site Disposal (T&D) of Excavated Landfill Debris	TON	70,980	\$60.00	\$4,259,000
--	MGP Related Impacts				
016	Sheet Pile Installation	SF	35,000	\$70.00	\$2,450,000
017	Excavation of NAPL Impacted Soil beneath CSXT's Vaughn Landfill (10 ft)	CY	50,700	\$18.00	\$913,000
018	Dewatering System (12 point w/ moves, fuel and operation) (50% Operational)	Week	32	\$9,500	\$308,000
019	LGAC Treatment for Dewatering Fluids (MGP contact water management) (50% Operational)	Week	32	\$10,000	\$324,000
020	Water Management/Pump Around	LS	1.00	\$1,500,000	\$1,500,000
021	Backfill to Wetland Grades (3 ft)	CY	15,198	\$30.00	\$456,000
022	Off-site Transportation and Disposal of NAPL Impacted Soil	TON	70,980	\$60.00	\$4,259,000
023	Wetland Restoration (Planting 20 trees per ac and wetland plants)	AC	3.14	\$25,000	\$79,000
024	Updating FEMA Flood Maps	LS	1.00	\$70,000	\$70,000
LECE School Property Wetland Excavation and Restoration					
025	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	0.26	\$7,500	\$2,000
026	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	0.77	\$15,000	\$12,000
--	Sprung Structure for Excavation on LECE Property				
027	Design	LS	1	\$70,000	\$70,000
028	Mobilization	LS	1	\$775,000	\$775,000
029	Electrically and Lighting Systems	LS	1	\$75,000	\$75,000
029	Relocations	Each	6	\$85,000	\$510,000
030	Monthly Rental	Month	7	\$59,800	\$408,000
030	Demobilization	LS	1	\$120,000	\$120,000
031	Electricity	Month	7	\$12,000	\$82,000
031	Sheet Pile Installation around LECE Area, Including Turnaround and Parking (16ft bls)	SF	25,000	\$70.00	\$1,750,000
032	Excavation of LECE Area, Excluding Turnaround and Parking (16ft bls)	CY	26,400	\$18	\$476,000
033	Dewatering system (12 point w/ moves, fuel and operation) (50% Operational)	Week	15	\$9,500	\$140,000
034	LGAC Treatment for Dewatering Fluids (MGP contact water management) (50% Operational)	Week	15	\$10,000	\$147,000

Table 9-6
OU-1 and OU-2 Combined Remedial Alternative 4 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
035	Fly-Ash Mixing and Off-site Disposal of Excavated Sediment (50% of sediment requires mixing)	TON	13,200	\$10	\$132,000
036	Off-site Disposal of Excavated Sediment	TON	38,808	\$60	\$2,329,000
037	Backfill and Regrading of LECE Area	CY	26,400	\$30	\$792,000
038	Wetland Restoration (Planting 20 trees per ac and wetland plants)	AC	1.02	\$25,000	\$26,000
039	Water Management/Pump Around	LS	1.00	\$750,000	\$750,000
--	Fugitive Air Emissions Treatment and Monitoring Systems				
040	Mob/Delivery with 20,000 lbs Virgin Carbon	LS	1	\$59,000	\$59,000
041	Crane for Off-loading/Setup and then Removal	LS	1	\$6,000	\$6,000
042	Monthly System Rental	Month	3.4	\$4,000	\$14,000
043	16-inch Hose	LF	500	\$45	\$23,000
044	Filter Elements	Each	100	\$150	\$15,000
045	Demobilization/Carbon Disposal	LS	1	\$30,000	\$30,000
046	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
Select Excavation on Parcel 3 South, 3 North, 4 and 5					
047	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	0.57	\$7,500	\$5,000
048	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	1.72	\$15,000	\$26,000
049	Crushed Limerock Entrance/Exit/Drive on Landfill and Work Pad Area	SF	10,000	\$0.93	\$10,000
050	ReWa Access	SF	16,000	\$0.93	\$15,000
051	Installation of construction mats	LS	1	\$50,000	\$50,000
052	Dewatering system (12 point w/ moves, fuel and operation) (30% Operational)	Week	9	\$9,500	\$83,000
053	LGAC Treatment for Dewatering Fluids (MGP contact water management) (30% Operational)	Week	9	\$10,000	\$87,000
054	Excavation Parcel 3 North	CY	5,700	\$18	\$103,000
055	Excavation Parcel 3 South	CY	15,300	\$18	\$276,000
056	Excavation Parcel 4	CY	2,800	\$18	\$51,000
057	Excavation Parcel 5	CY	2,300	\$18	\$42,000
058	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
059	Fly-Ash Mixing of Excavated Sediment	CY	13,050	\$10	\$131,000
060	Off-site Disposal of Excavated Sediments, Parcels 3 South, 3 North, 4 and 5	TON	38,367	\$60	\$2,303,000
061	Backfill and Regrading of Parcels 3 South, 3 North, 4 and 5	CY	26,100	\$30	\$783,000
062	Restoration of Disturbed Areas (Vegetation) (Planting 20 trees per ac and wetland plants)	AC	3.29	\$25,000	\$83,000
063	Check Dams	Each	2	\$2,500	\$5,000
--	Temporary Water By-pass for Parcels 4 and 5				
064	Temp Ditch Excavation	BCY	3,200	\$18	\$58,000
065	Temp Ditch Backfill	BCY	3,200	\$30	\$96,000
066	Vaughn Landfill Ditch Block/Minor Stormwater Work	LS	1	\$5,000	\$5,000
CONSTRUCTION COSTS TOTAL					\$30,300,000
III. PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS					
067	MNA Sampling and Lab Analyses & Semi-annual Reports *	Year	30	\$68,000	\$900,000
068	Five Year Regulatory Review *	LS	6	\$10,000	\$22,000
069	Monthly Site O&M/LUC Visit *	Year	30	\$15,000	\$200,000
PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS TOTAL *					\$1,100,000
IV. SUMMARY					
Total Capital Costs (Engineering & CQA and Construction)					\$32,200,000
Present Value of Annual O&M Costs - 30 Year *					\$1,100,000
Subtotal Costs					\$33,300,000
Cost Estimate Range (-30% to +50%)					\$23,300,000 - \$50,000,000

Notes:

CY = cubic yards, SY = square yards, LF = linear feet, LS = Lump Sum, AC = acre., kWh = kilowatt hour, ERP = Environmental Resource Permit
 "Unit Rate" and "Extended Amount" column items are provided in United States dollar (USD).

* Present value calculated utilizing a 7% discount rate consistent with *A Guide To Developing and Documenting Cost Estimates During the Feasibility Study*, EPA July 2000.

Table 9-7
OU-1 and OU-2 Combined Remedial Alternative 5 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

Alternative Description: Excavation and Complete Removal of Vaughn Landfill, MNA, and LUCs					
- Clear and grub LECE School excavation area, CSXT's Vaughn Landfill and Parcels 3, 4, and 5 - Install ReWa access - Excavate LECE School wetlands (excluding turnaround/parking area on LECE School property) to a depth of 16 ft bls - Excavation of Parcels 3, 4, and 5 - Excavate the entire CSXT's Vaughn Landfill and NAPL beneath a portion of the landfill - Restore Wetlands LECE School Property, Parcels 3, 4, and 5 and the CSXT's Vaughn Landfill - 30 years of MNA monitoring					
Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
I. ENGINEERING & CQA COSTS					
001	Design, Specifications, and Bidding Support	LS	1	\$90,000	\$90,000
002	Environmental Resource Permitting	LS	1	\$70,000	\$70,000
003	CQA	Day	832	\$1,500	\$1,249,000
004	Site Remediation Air and Vibration Monitoring During Construction	Months	35.2	\$23,000	\$810,000
005	As-Built Drawings and Reporting	LS	1	\$40,000	\$40,000
PRE-CONSTRUCTION/START-UP COSTS TOTAL					\$2,300,000
II. CONSTRUCTION COSTS					
General					
006	Mobilization/Demobilization	LS	1	\$50,000	\$50,000
007	Contractor Construction Support (Project Management, Trailers, CQC)	Month	35.2	\$50,000	\$1,760,000
008	Construction Permitting	LS	1	\$13,000	\$13,000
009	Surveying	Each	3	\$5,000	\$15,000
010	Installation of Silt Fence	LF	6,000	\$5.00	\$30,000
011	Installation of Security Fencing and Construction Entrance/Exit	LF	2,000	\$33.00	\$66,000
CSXT's Vaughn Landfill					
--	CSXT's Vaughn Landfill				
012	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	1.57	\$7,500	\$12,000
013	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	4.72	\$15,000	\$71,000
014	Excavation of CSXT's Vaughn Landfill (10 ft)	CY	101,500	\$18.00	\$1,827,000
015	Off-site Disposal (T&D) of Excavated Landfill Debris	TON	142,100	\$60.00	\$8,526,000
--	MGP Related Impacts				
016	Sheet Pile Installation	SF	35,000	\$70.00	\$2,450,000
017	Excavation of NAPL Impacted Soil beneath CSXT's Vaughn Landfill (10 ft)	CY	50,700	\$18.00	\$913,000
018	Dewatering System (12 point w/ moves, fuel and operation) (50% Operational)	Week	46	\$9,500	\$442,000
019	LGAC Treatment for Dewatering Fluids (MGP contact water management) (50% Operational)	Week	46	\$10,000	\$465,000
020	Water Management/Pump Around	LS	1.00	\$1,500,000	\$1,500,000
021	Backfill to Wetland Grades (3 ft)	CY	15,198	\$30.00	\$456,000
022	Off-site Transportation and Disposal of NAPL Impacted Soil	TON	70,980	\$60.00	\$4,259,000
023	Wetland Restoration (Planting 20 trees per ac and wetland plants)	AC	6.3	\$25,000	\$158,000
024	Updating FEMA Flood Maps	LS	1.00	\$70,000	\$70,000
LECE School Property Wetland Excavation and Restoration					
025	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	0.26	\$7,500	\$2,000
026	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	0.77	\$15,000	\$12,000
--	Sprung Structure for Excavation on LECE Property				
027	Design	LS	1	\$70,000	\$70,000
028	Mobilization	LS	1	\$775,000	\$775,000
029	Electrically and Lighting Systems	LS	1	\$75,000	\$75,000
029	Relocations	Each	6	\$85,000	\$510,000
030	Monthly Rental	Month	7	\$59,800	\$408,000
030	Demobilization	LS	1	\$120,000	\$120,000
031	Electricity	Month	7	\$12,000	\$82,000
031	Sheet Pile Installation around LECE Area, Including Turnaround and Parking (16ft bls)	SF	25,000	\$70.00	\$1,750,000
032	Excavation of LECE Area, Excluding Turnaround and Parking (16ft bls)	CY	26,400	\$18	\$476,000
033	Dewatering system (12 point w/ moves, fuel and operation) (50% Operational)	Week	15	\$9,500	\$140,000
034	LGAC Treatment for Dewatering Fluids (MGP contact water management) (50% Operational)	Week	15	\$10,000	\$147,000

Table 9-7
OU-1 and OU-2 Combined Remedial Alternative 5 Cost Estimate
 CSXT Bramlett Road Site
 VCC 16-5857-RP
 Greenville, SC

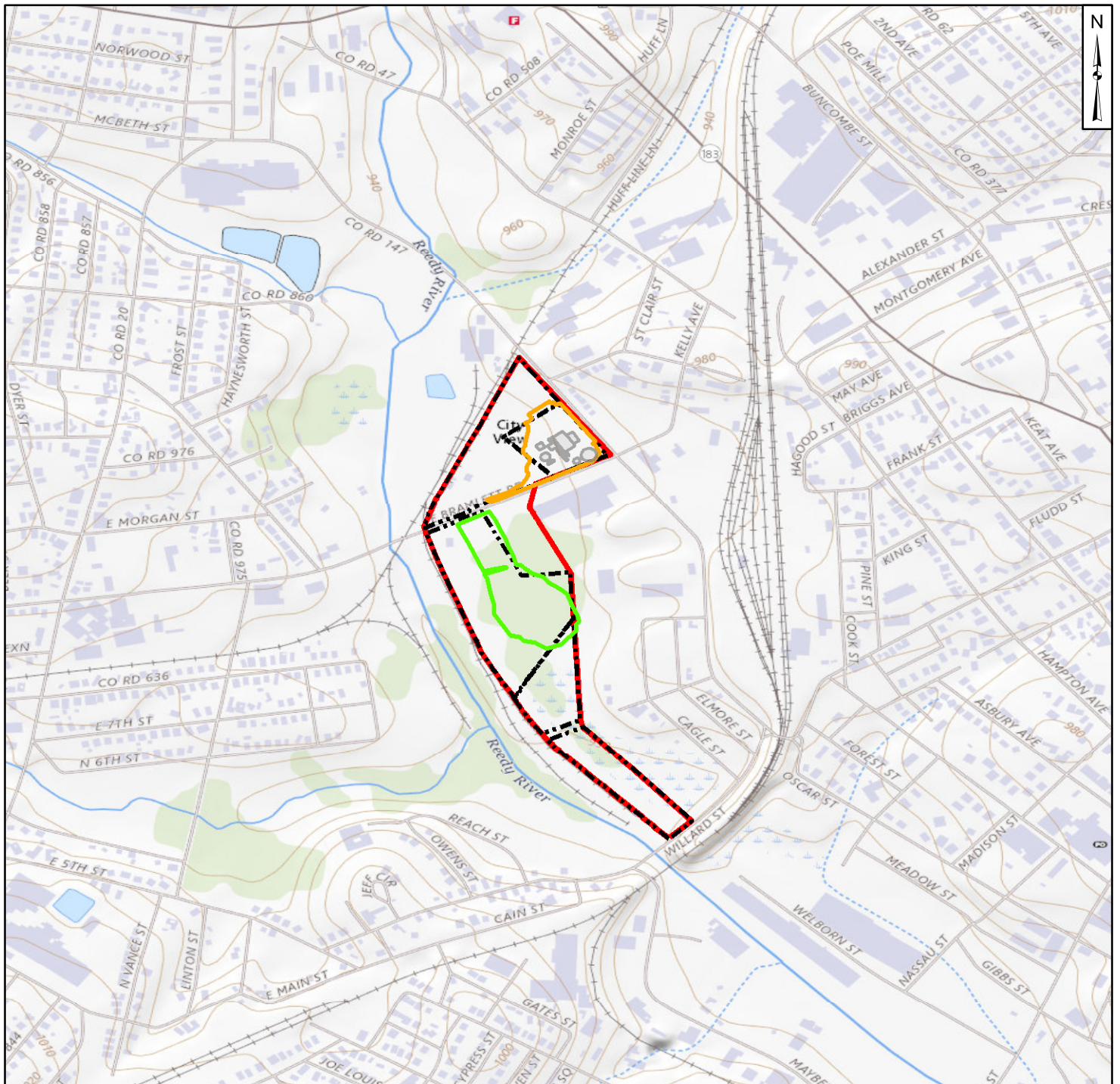
Item No.	Item Description	Unit	Estimated Quantity	Estimated Unit Rate (USD)	Extended Amount (USD)
035	Fly-Ash Mixing and Off-site Disposal of Excavated Sediment (50% of sediment requires mixing)	TON	13,200	\$10	\$132,000
036	Off-site Disposal of Excavated Sediment	TON	38,808	\$60	\$2,329,000
037	Backfill and Regrading of LECE Area	CY	26,400	\$30	\$792,000
038	Wetland Restoration (Planting 20 trees per ac and wetland plants)	AC	1.02	\$25,000	\$26,000
039	Water Management/Pump Around	LS	1.00	\$750,000	\$750,000
--	Fugitive Air Emissions Treatment and Monitoring Systems				
040	Mob/Delivery with 20,000 lbs Virgin Carbon	LS	1	\$59,000	\$59,000
041	Crane for Off-loading/Setup and then Removal	LS	1	\$6,000	\$6,000
042	Monthly System Rental	Month	3.4	\$4,000	\$14,000
043	16-inch Hose	LF	500	\$45	\$23,000
044	Filter Elements	Each	100	\$150	\$15,000
045	Demobilization/Carbon Disposal	LS	1	\$30,000	\$30,000
046	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
Select Excavation on Parcel 3 South, 3 North, 4 and 5					
047	Clearing, Grubbing, and Stripping for Surface Sediment Removal (light)	AC	0.57	\$7,500	\$5,000
048	Clearing, Grubbing, and Stripping for Surface Sediment Removal (heavy)	AC	1.72	\$15,000	\$26,000
049	Crushed Limerock Entrance/Exit/Drive on Landfill and Work Pad Area	SF	10,000	\$0.93	\$10,000
050	ReWa Access	SF	16,000	\$0.93	\$15,000
051	Installation of construction mats	LS	1	\$50,000	\$50,000
052	Dewatering system (12 point w/ moves, fuel and operation) (30% Operational)	Week	9	\$9,500	\$83,000
053	LGAC Treatment for Dewatering Fluids (MGP contact water management) (30% Operational)	Week	9	\$10,000	\$87,000
054	Excavation Parcel 3 North	CY	5,700	\$18	\$103,000
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058	Rusmar Odor Control Foam	Drum	30	\$750	\$23,000
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061	Backfill and Regrading of Parcels 3 South, 3 North, 4 and 5	CY	26,100	\$30	\$783,000
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063	Check Dams	Each	2	\$2,500	\$5,000
--	Temporary Water By-pass for Parcels 4 and 5				
064	Temp Ditch Excavation	BCY	3,200	\$18	\$58,000
065	Temp Ditch Backfill	BCY	3,200	\$30	\$96,000
066	Vaughn Landfill Ditch Block/Minor Stormwater Work	LS	1	\$5,000	\$5,000
CONSTRUCTION COSTS TOTAL					\$36,100,000
III. PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS					
067	MNA Sampling and Lab Analyses & Semi-annual Reports *	Year	30	\$68,000	\$900,000
068	Five Year Regulatory Review *	LS	6	\$10,000	\$22,000
069	Monthly Site O&M/LUC Visit *	Year	30	\$15,000	\$200,000
PRESENT VALUE OF POST-CONSTRUCTION (OPERATION AND MAINTENANCE) COSTS TOTAL *					\$1,100,000
IV. SUMMARY					
Total Capital Costs (Engineering & CQA and Construction)					\$38,400,000
Present Value of Annual O&M Costs - 30 Year *					\$1,100,000
Subtotal Costs					\$39,500,000
Cost Estimate Range (-30% to +50%)					\$27,700,000 - \$59,300,000

Notes:

CY = cubic yards, SY = square yards, LF = linear feet, LS = Lump Sum, AC = acre., kWh = kilowatt hour, ERP = Environmental Resource Permit
 "Unit Rate" and "Extended Amount" column items are provided in United States dollar (USD).

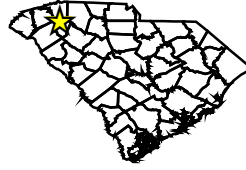
* Present value calculated utilizing a 7% discount rate consistent with *A Guide To Developing and Documenting Cost Estimates During the Feasibility Study*, EPA July 2000.

FIGURES



LEGEND

- FORMER MGP OPERATIONAL STRUCTURES
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- SITE BOUNDARY



NOTES:

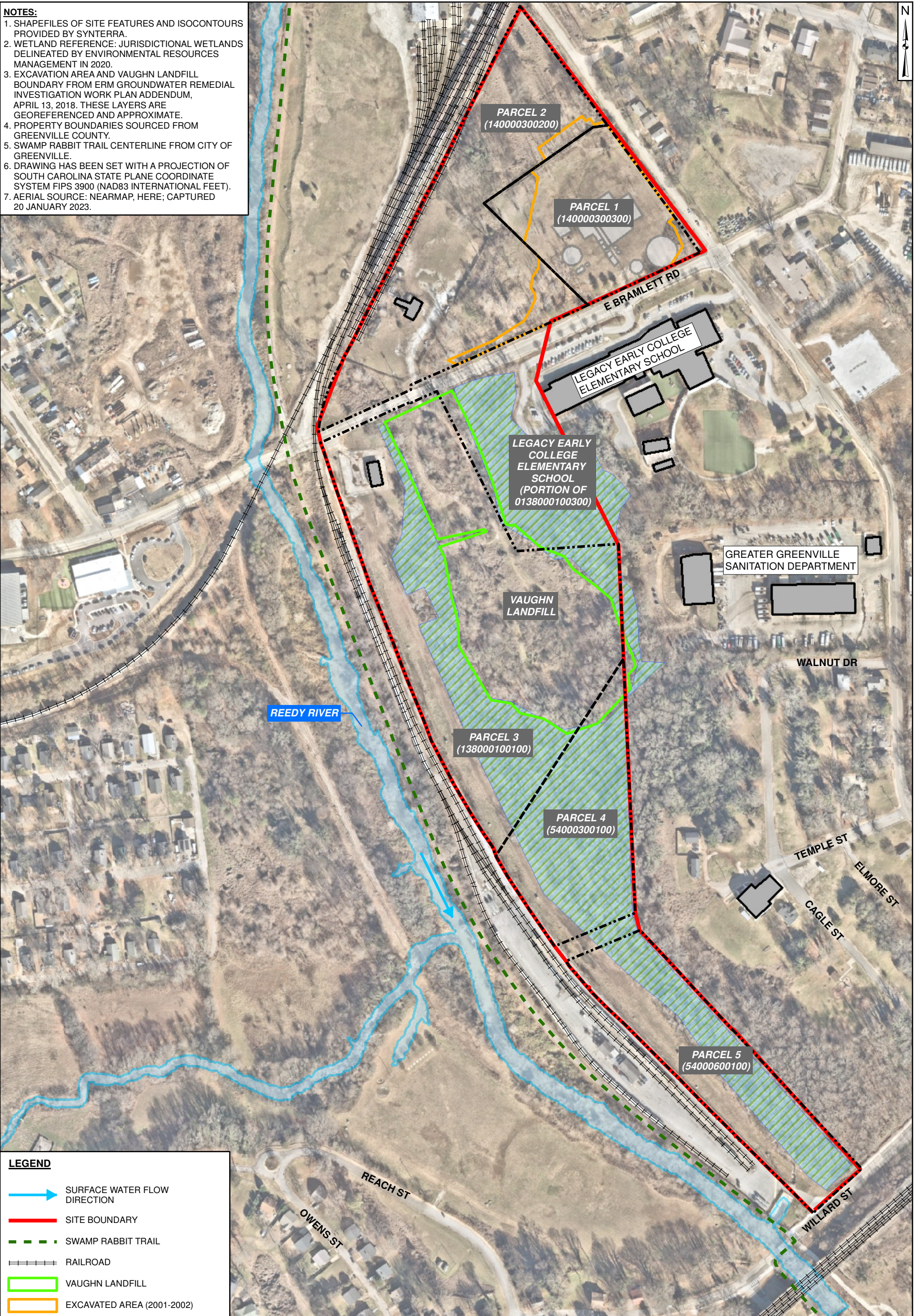
1. TOPOGRAPHY SOURCE: USGS NATIONAL MAP, ESRI.
2. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.




0 1,000 Feet	
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REVISED BY: MLM	DATE: 6/07/2023
CHECKED BY: MLM	DATE: 6/07/2023
APPROVED BY: APB	DATE: 6/07/2023
PROJECT MANAGER: APB	DATE: 6/07/2023

FIGURE 2-1
SITE LOCATION MAP
CSXT BRAMLETT ROAD SITE
VCC16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. WETLAND REFERENCE: JURISDICTIONAL WETLANDS DELINEATED BY ENVIRONMENTAL RESOURCES MANAGEMENT IN 2020.
 3. EXCAVATION AREA AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 4. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 5. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 6. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 7. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- SURFACE WATER FLOW DIRECTION
- SITE BOUNDARY
- SWAMP RABBIT TRAIL
- RAILROAD
- VAUGHN LANDFILL
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

DUKE ENERGY

Geosyntec consultants

0 250 Feet

DRAWN BY: MAH	DATE: 6/7/2023
REVISED BY: MLM	DATE: 6/7/2023
CHECKED BY: MLM	DATE: 6/7/2023
APPROVED BY: APB	DATE: 6/7/2023
PROJECT MANAGER: APB	DATE: 6/7/2023

FIGURE 2-2
SITE PARCELS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. SHAPEFILES OF SITE FEATURES INCLUDING RIVER GAUGE, STAFF GAUGE, AND SURFACE WATER SAMPLING LOCATIONS PROVIDED BY SYNTERRA.
2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
4. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
5. 1964 AERIAL IMAGERY SOURCE: USGS EARTH EXPLORER.

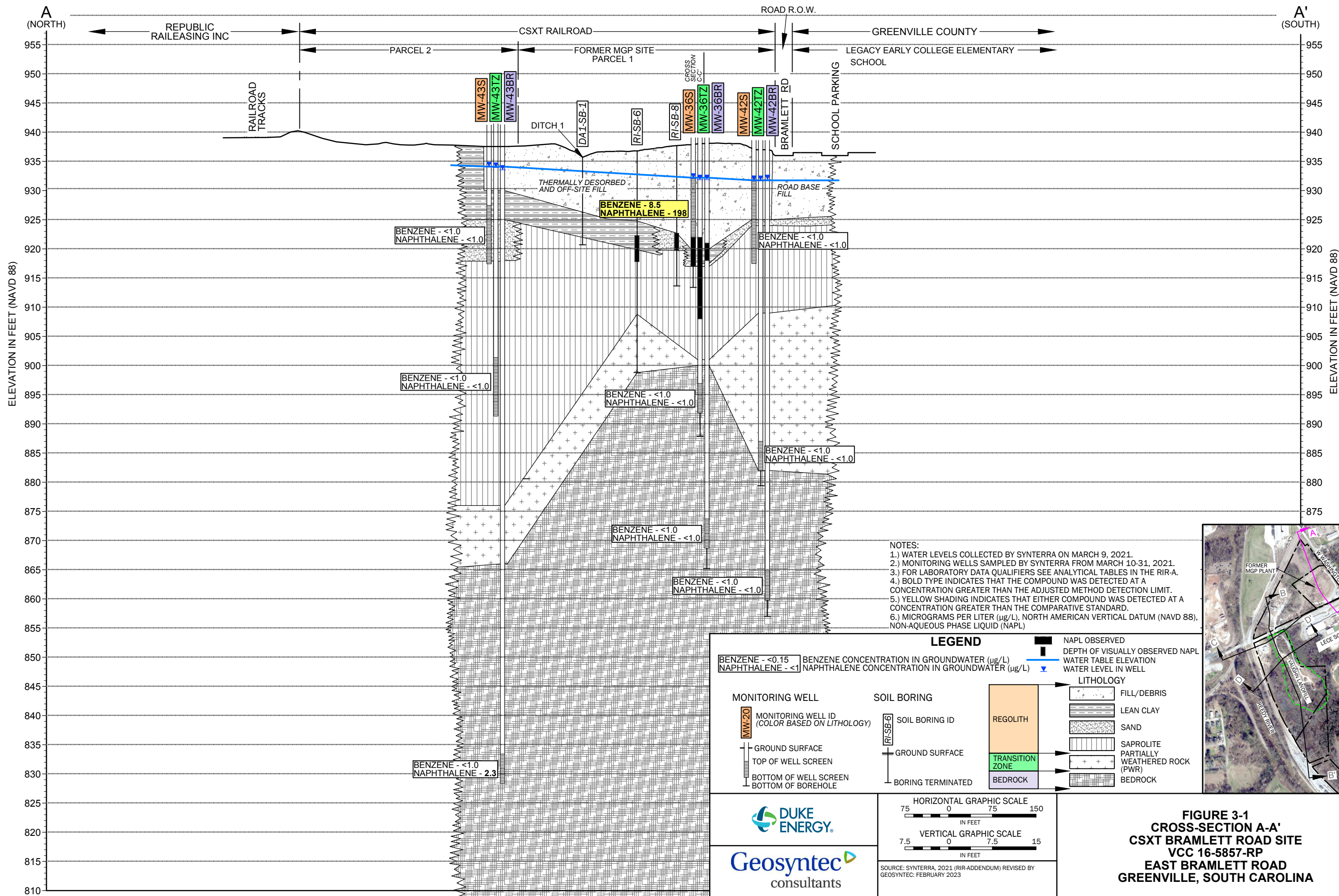


LEGEND

	SITE BOUNDARY
	FORMER DRAINAGE DITCH (1964)
	VAUGHN LANDFILL
	EXCAVATED AREA (2001-2002)
	PARCEL BOUNDARY
	FORMER MGP OPERATIONAL STRUCTURES
	BUILDING

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DRAWN BY: MAH	DATE: 6/9/2023									
REVISED BY: MLM	DATE: 6/9/2023									
CHECKED BY: MLM	DATE: 6/9/2023									
APPROVED BY: APB	DATE: 6/9/2023									
PROJECT MANAGER: APB	DATE: 6/9/2023									

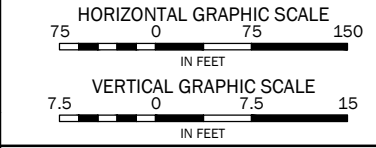
FIGURE 2-3
1964 HISTORICAL AERIAL LAYOUT
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



- NOTES:
- 1.) WATER LEVELS COLLECTED BY SYNTERRA ON MARCH 9, 2021.
 - 2.) MONITORING WELLS SAMPLED BY SYNTERRA FROM MARCH 10-31, 2021.
 - 3.) FOR LABORATORY DATA QUALIFIERS SEE ANALYTICAL TABLES IN THE RIR-A.
 - 4.) BOLD TYPE INDICATES THAT THE COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE ADJUSTED METHOD DETECTION LIMIT.
 - 5.) YELLOW SHADING INDICATES THAT EITHER COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE COMPARATIVE STANDARD.
 - 6.) MICROGRAMS PER LITER ($\mu\text{g/L}$), NORTH AMERICAN VERTICAL DATUM (NAVD 88), NON-AQUEOUS PHASE LIQUID (NAPL)

LEGEND

BENZENE - <0.15 NAPHTHALENE - <1	BENZENE CONCENTRATION IN GROUNDWATER ($\mu\text{g/L}$) NAPHTHALENE CONCENTRATION IN GROUNDWATER ($\mu\text{g/L}$)	NAPL OBSERVED DEPTH OF VISUALLY OBSERVED NAPL	WATER TABLE ELEVATION	WATER LEVEL IN WELL
MONITORING WELL	SOIL BORING	LITHOLOGY		
MW-20 MONITORING WELL ID (COLOR BASED ON LITHOLOGY)	RISB-6 SOIL BORING ID	REGOLITH	FILL/DEBRIS	
GROUND SURFACE	GROUND SURFACE	TRANSITION ZONE	LEAN CLAY	
TOP OF WELL SCREEN	BORING TERMINATED	BEDROCK	SAND	
BOTTOM OF WELL SCREEN			SAPROLITE	
BOTTOM OF BOREHOLE			PARTIALLY WEATHERED ROCK (PWR)	
			BEDROCK	



SOURCE: SYNTERRA, 2021 (RIR-ADDENDUM) REVISED BY GEOSYNTec: FEBRUARY 2023

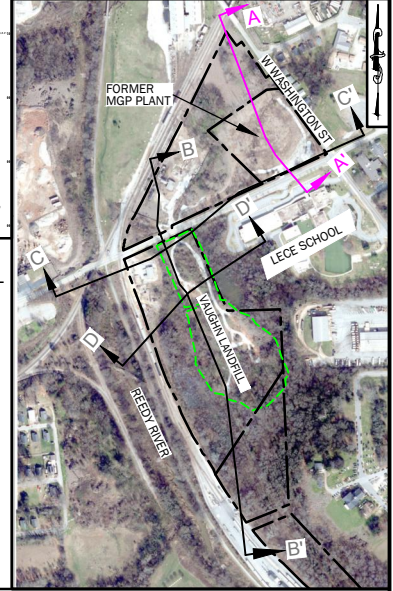
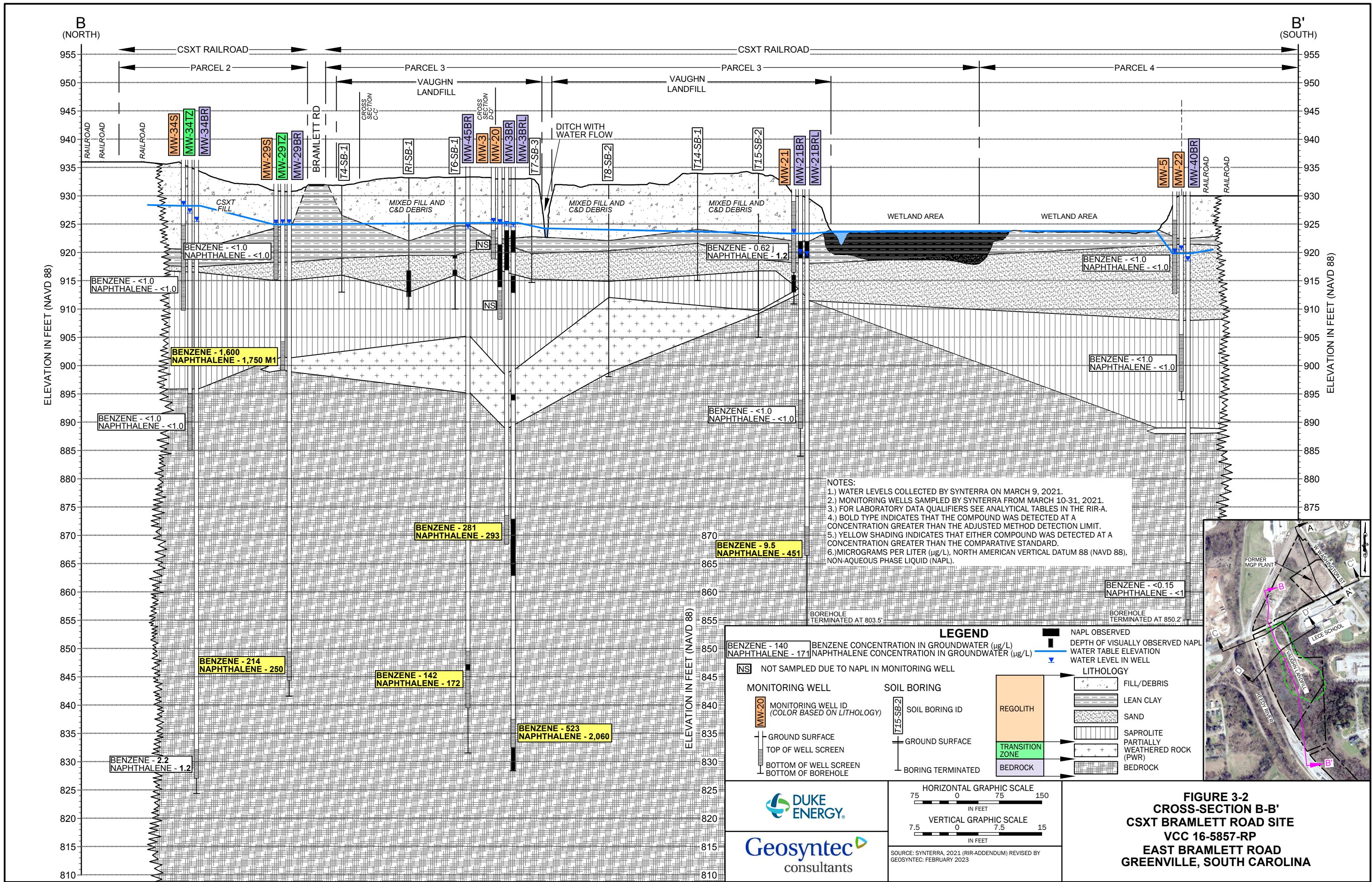
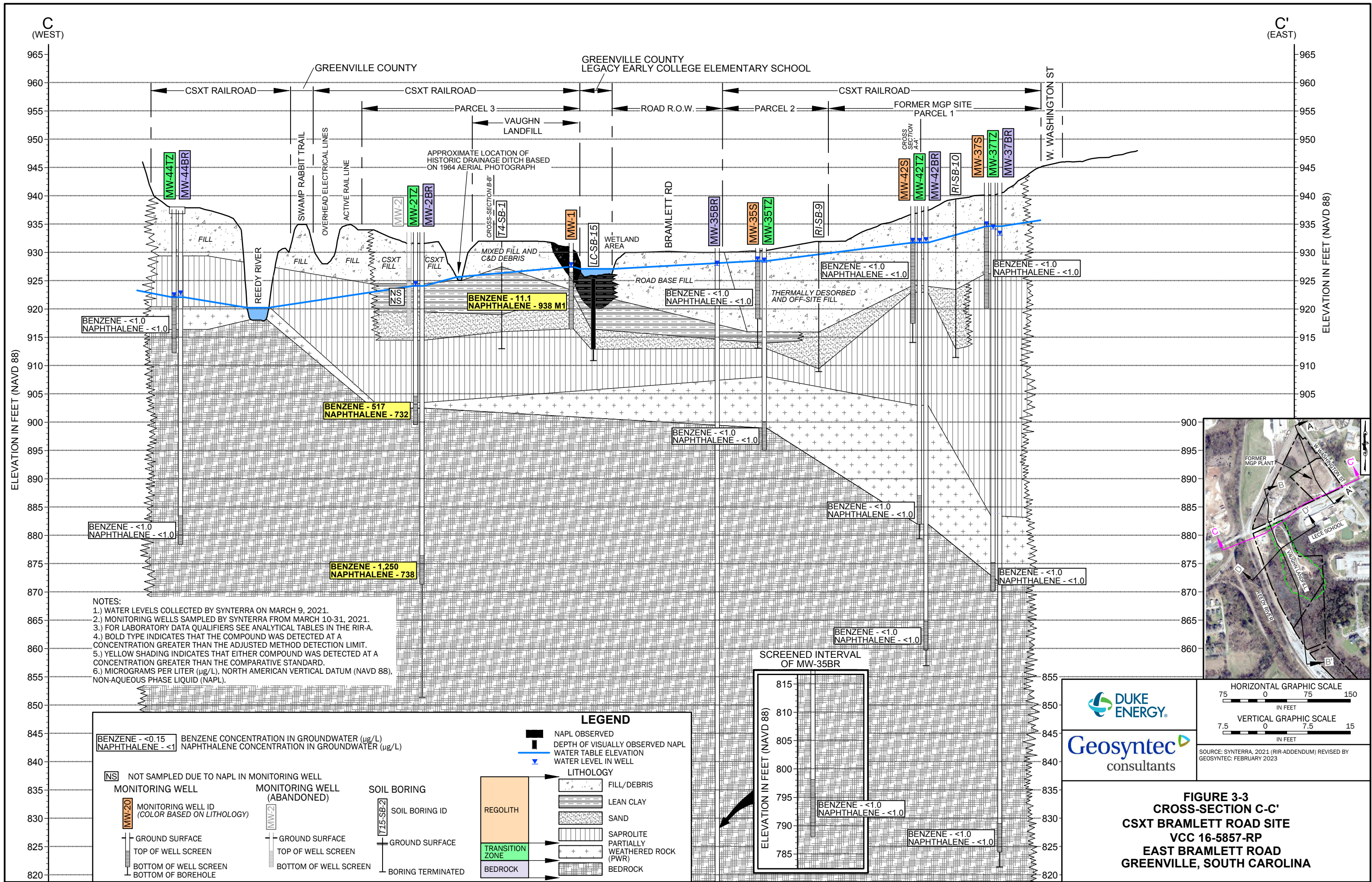


FIGURE 3-1
CROSS-SECTION A-A'
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



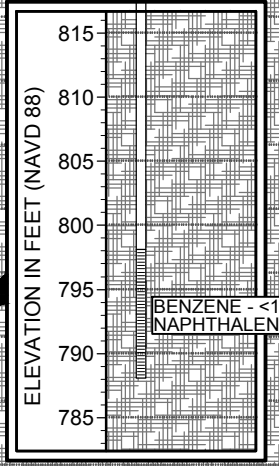


NOTES:
 1.) WATER LEVELS COLLECTED BY SYNTERRA ON MARCH 9, 2021.
 2.) MONITORING WELLS SAMPLED BY SYNTERRA FROM MARCH 10-31, 2021.
 3.) FOR LABORATORY DATA QUALIFIERS SEE ANALYTICAL TABLES IN THE RIR-A.
 4.) BOLD TYPE INDICATES THAT THE COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE ADJUSTED METHOD DETECTION LIMIT.
 5.) YELLOW SHADING INDICATES THAT EITHER COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE COMPARATIVE STANDARD.
 6.) MICROGRAMS PER LITER (µg/L), NORTH AMERICAN VERTICAL DATUM (NAVD 88), NON-AQUEOUS PHASE LIQUID (NAPL).

LEGEND

BENZENE - <0.15 NAPHTHALENE - <1	BENZENE CONCENTRATION IN GROUNDWATER (µg/L) NAPHTHALENE CONCENTRATION IN GROUNDWATER (µg/L)		NAPL OBSERVED
NS	NOT SAMPLED DUE TO NAPL IN MONITORING WELL		DEPTH OF VISUALLY OBSERVED NAPL
	MONITORING WELL ID (COLOR BASED ON LITHOLOGY)		WATER TABLE ELEVATION
	MONITORING WELL (ABANDONED)		WATER LEVEL IN WELL
	GROUND SURFACE		REGOLITH
	TOP OF WELL SCREEN		TRANSITION ZONE
	BOTTOM OF WELL SCREEN		BEDROCK
	BOTTOM OF BOREHOLE		FILL/DEBRIS
	SOIL BORING		LEAN CLAY
	GROUND SURFACE		SAND
	GROUND SURFACE		SAPROLITE
	GROUND SURFACE		PARTIALLY WEATHERED ROCK (PWR)
	BORING TERMINATED		BEDROCK

SCREENED INTERVAL OF MW-35BR



DUKE ENERGY

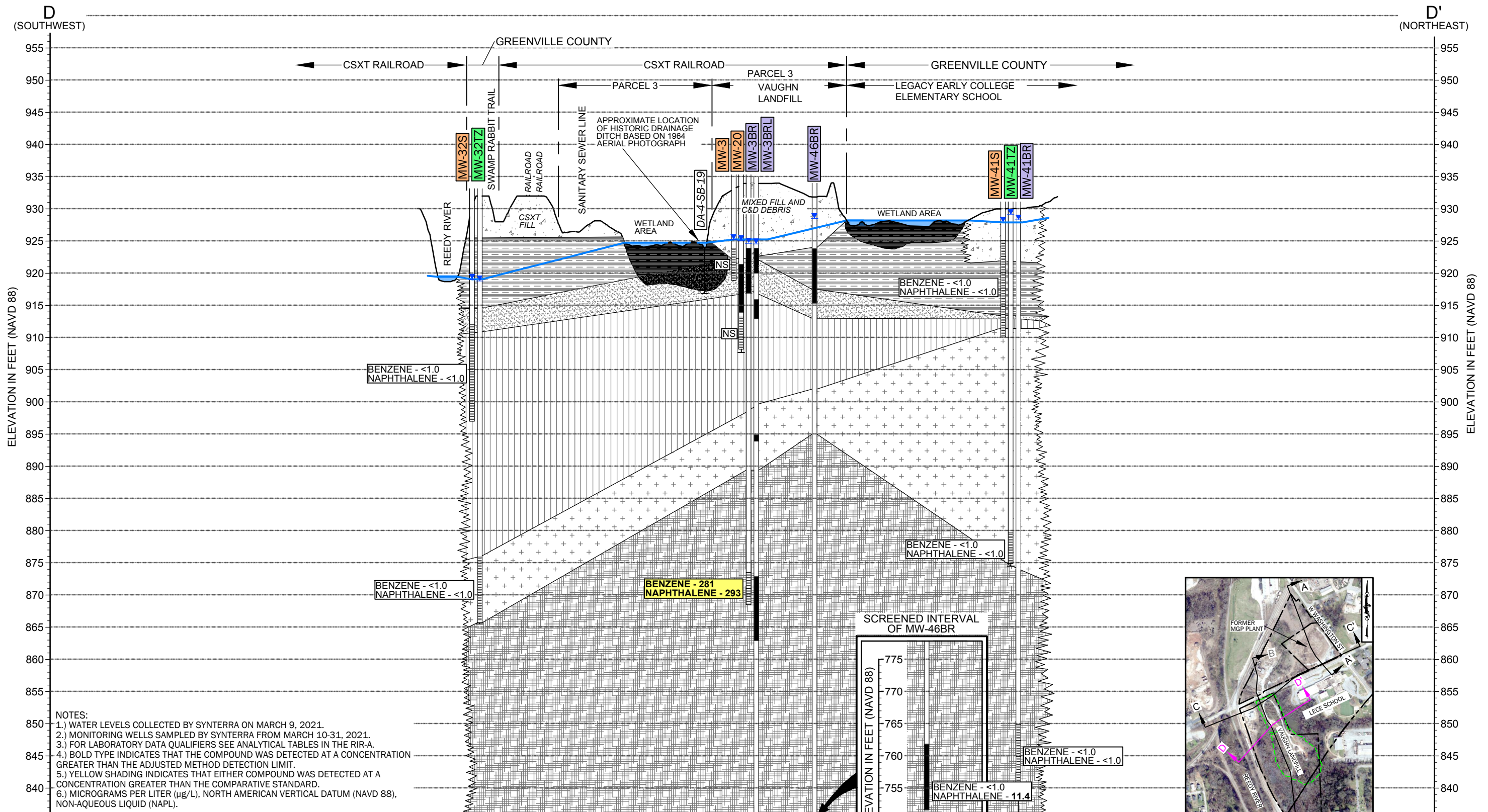
Geosyntec consultants

HORIZONTAL GRAPHIC SCALE
 75 0 75 150
 IN FEET

VERTICAL GRAPHIC SCALE
 7.5 0 7.5 15
 IN FEET

SOURCE: SYNTERRA, 2021 (RIR-ADDENDUM) REVISED BY GEOSYNTec, FEBRUARY 2023

FIGURE 3-3
CROSS-SECTION C-C'
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



- NOTES:**
- 1.) WATER LEVELS COLLECTED BY SYNTERRA ON MARCH 9, 2021.
 - 2.) MONITORING WELLS SAMPLED BY SYNTERRA FROM MARCH 10-31, 2021.
 - 3.) FOR LABORATORY DATA QUALIFIERS SEE ANALYTICAL TABLES IN THE RIR-A.
 - 4.) BOLD TYPE INDICATES THAT THE COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE ADJUSTED METHOD DETECTION LIMIT.
 - 5.) YELLOW SHADING INDICATES THAT EITHER COMPOUND WAS DETECTED AT A CONCENTRATION GREATER THAN THE COMPARATIVE STANDARD.
 - 6.) MICROGRAMS PER LITER ($\mu\text{g/L}$), NORTH AMERICAN VERTICAL DATUM (NAVD 88), NON-AQUEOUS LIQUID (NAPL).

LEGEND

BENZENE - <1.0 NAPHTHALENE - <1.0	BENZENE CONCENTRATION IN GROUNDWATER ($\mu\text{g/L}$) NAPHTHALENE CONCENTRATION IN GROUNDWATER ($\mu\text{g/L}$)	NS	NOT SAMPLED DUE TO NAPL IN MONITORING WELL
■	NAPL OBSERVED	■	DEPTH OF VISUALLY OBSERVED NAPL
▲	WATER TABLE ELEVATION	▲	WATER LEVEL IN WELL

MONITORING WELL

SOIL BORING

LITHOLOGY

REGOLITH	FILL/DEBRIS
TRANSITION ZONE	LEAN CLAY
BEDROCK	SAND
	SAPROLITE
	PARTIALLY WEATHERED ROCK (PWR)
	BEDROCK

MONITORING WELL ID (COLOR BASED ON LITHOLOGY)

SOIL BORING ID

GROUND SURFACE

TOP OF WELL SCREEN

BOTTOM OF WELL SCREEN

BOTTOM OF BOREHOLE

GROUND SURFACE

BORING TERMINATED

DUKE ENERGY

Geosyntec consultants

HORIZONTAL GRAPHIC SCALE
75 0 75 150
IN FEET

VERTICAL GRAPHIC SCALE
7.5 0 7.5 15
IN FEET

SOURCE: SYNTERRA, 2021 (RIR-ADDENDUM) REVISED BY GEOSYNTec: FEBRUARY 2023

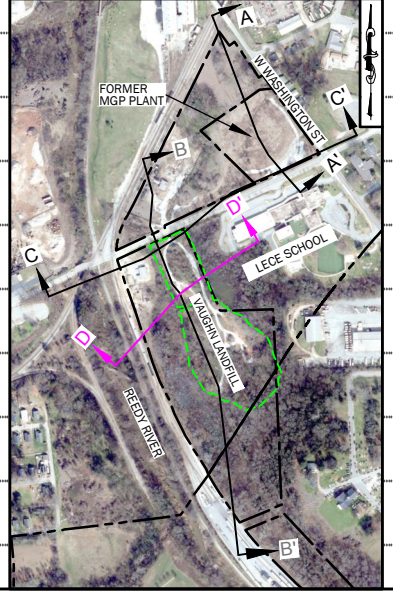
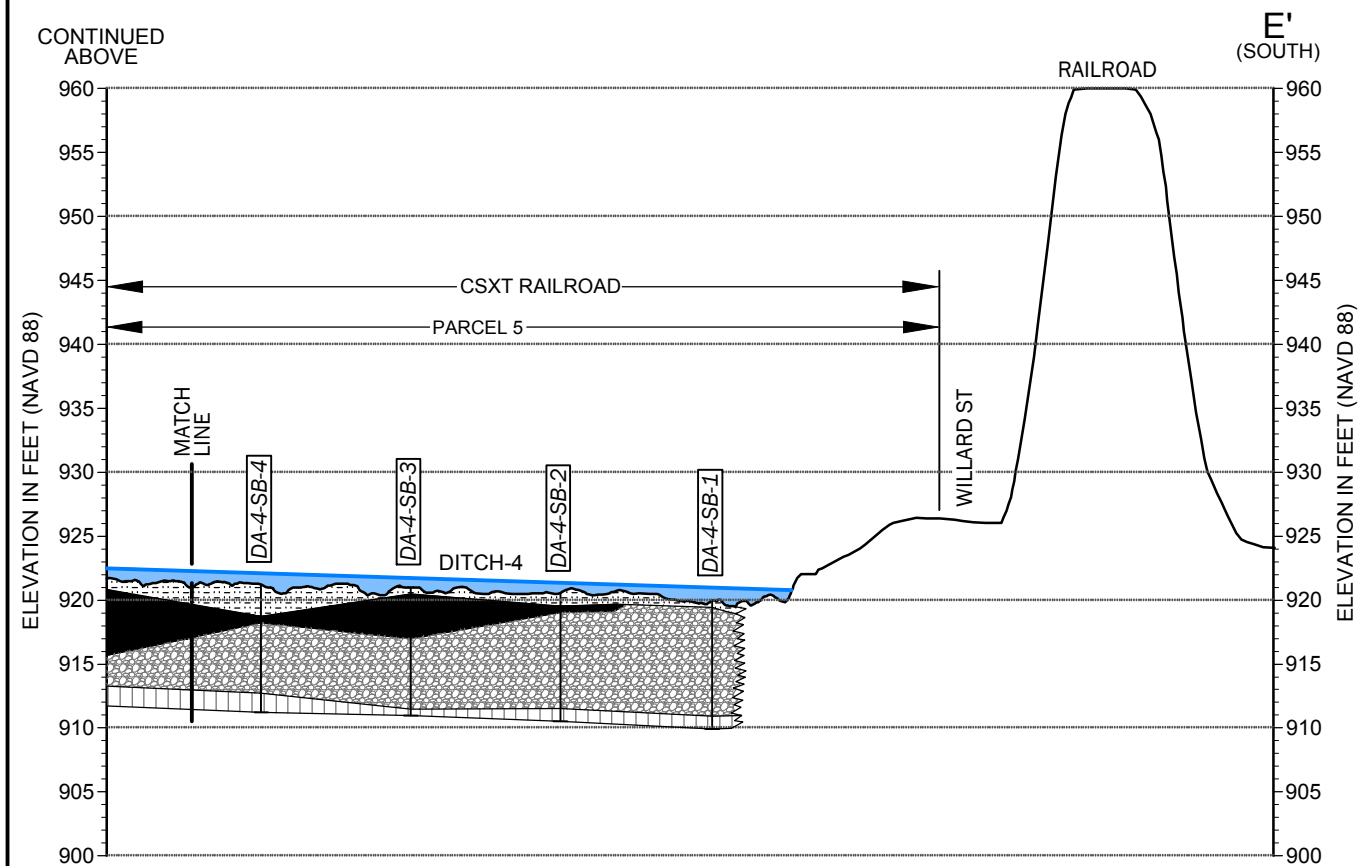
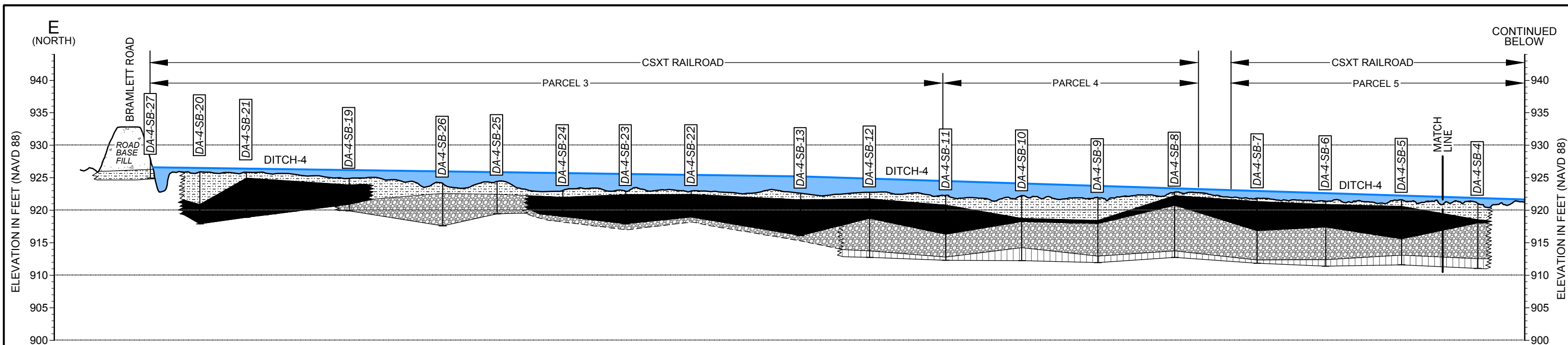


FIGURE 3-4
CROSS-SECTION D-D'
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



LEGEND

SOIL BORING	LITHOLOGY
SOIL BORING ID	FILL/DEBRIS
GROUND SURFACE	SAND/SILT
BORING TERMINATED	NAPL
	ALLUVIUM
	SAPROLITE
	REGOLITH

NOTES:
 1.) SEDIMENT SAMPLES COLLECTED BY SYNTERRA FROM MARCH-APRIL 2021.
 2. NORTH AMERICAN VERTICAL DATUM (NAVD 88).

DUKE ENERGY

Geosyntec consultants

HORIZONTAL GRAPHIC SCALE
 75 0 75 150
 IN FEET

VERTICAL GRAPHIC SCALE
 7.5 0 7.5 15
 IN FEET

SOURCE: SYNTERRA, 2021 (RIR-ADDENDUM) REVISED BY GEOSYNTec: FEBRUARY 2023

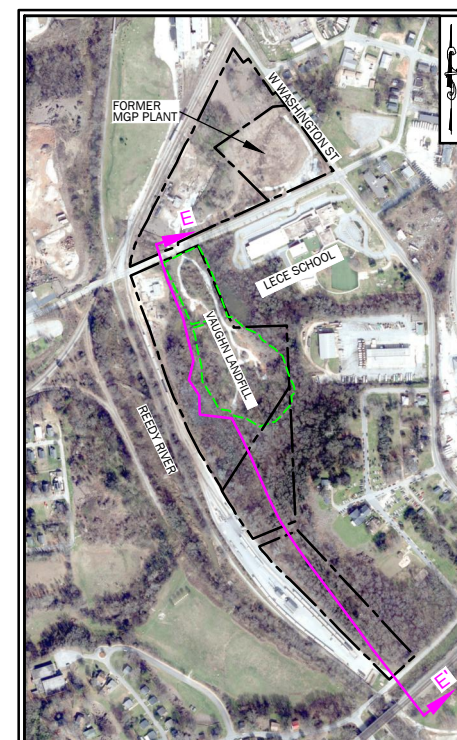
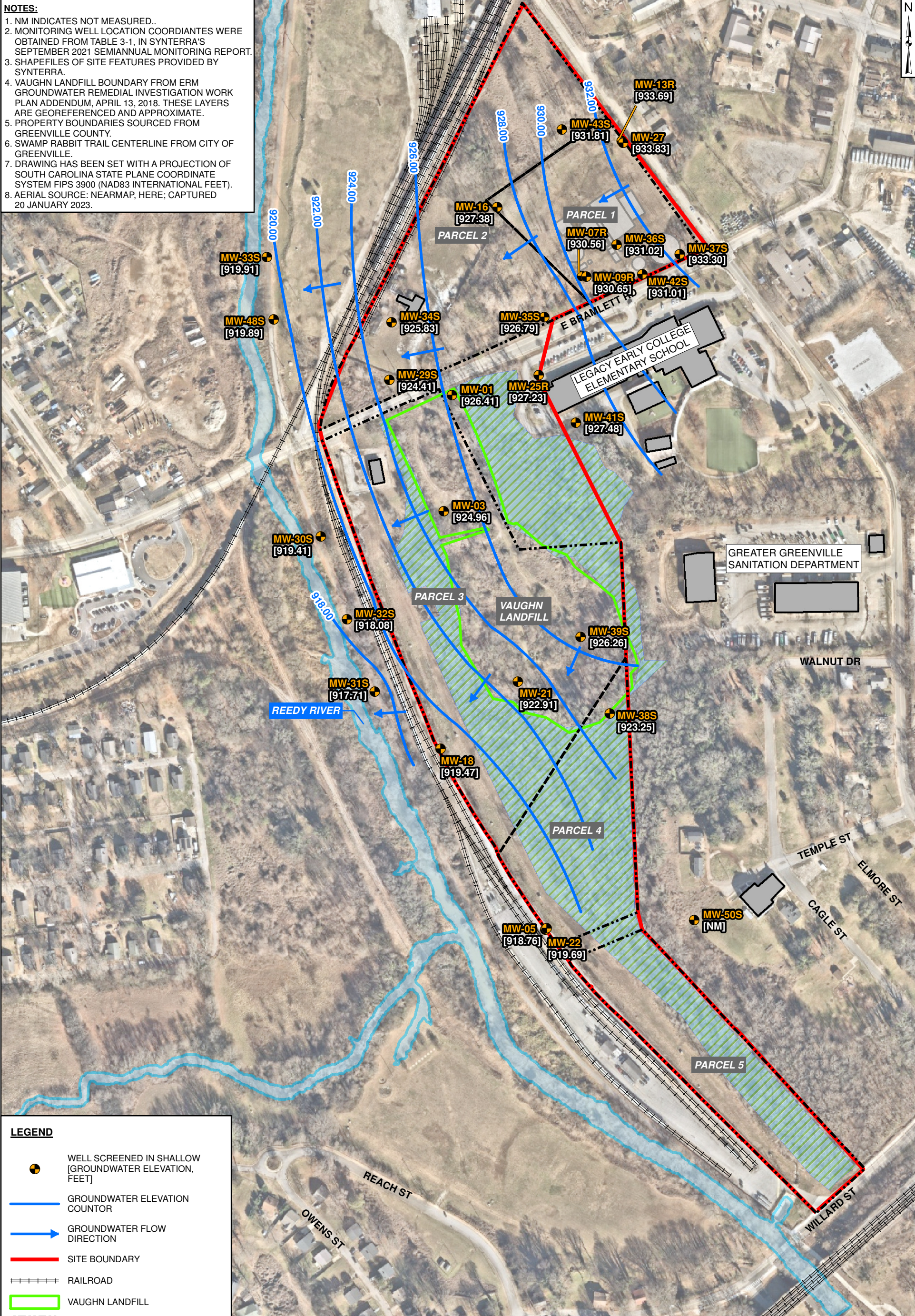


FIGURE 3-5
CROSS-SECTION E-E'
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

- NOTES:**
1. NM INDICATES NOT MEASURED..
 2. MONITORING WELL LOCATION COORDIANATES WERE OBTAINED FROM TABLE 3-1, IN SYNTERRA'S SEPTEMBER 2021 SEMIANNUAL MONITORING REPORT.
 3. SHAPEFILES OF SITE FEATURES PROVIDED BY SYNTERRA.
 4. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 5. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 6. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 7. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 8. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

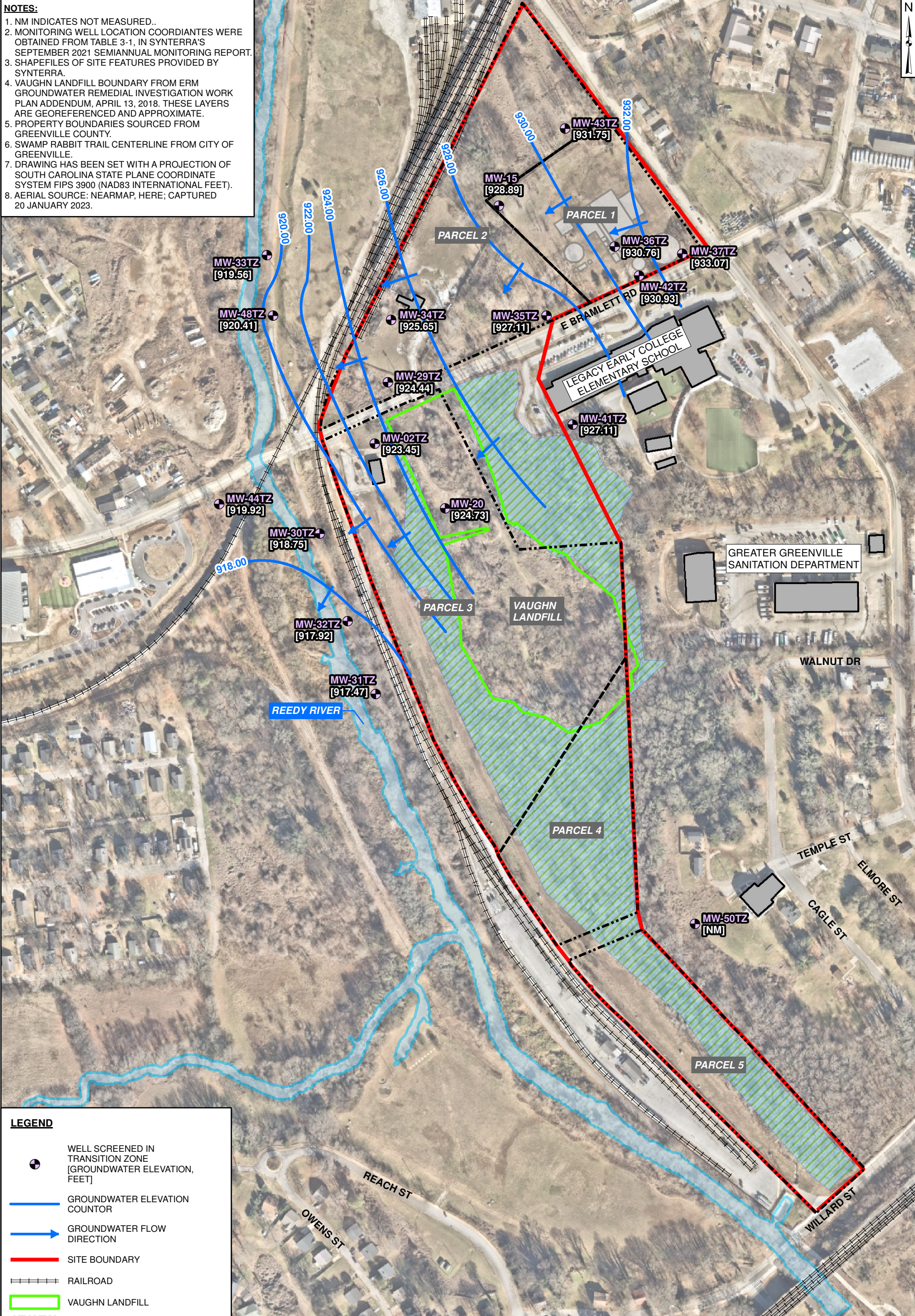
- WELL SCREENED IN SHALLOW [GROUNDWATER ELEVATION, FEET]
- GROUNDWATER ELEVATION COUNTER
- GROUNDWATER FLOW DIRECTION
- SITE BOUNDARY
- RAILROAD
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

0 250
Feet

DRAWN BY: MAH DATE: 6/9/2023
 REVISED BY: MLM DATE: 6/9/2023
 CHECKED BY: APB DATE: 6/9/2023
 APPROVED BY: APB DATE: 6/9/2023
 PROJECT MANAGER: APB DATE: 6/9/2023

FIGURE 3-6
SHALLOW ZONE POTENTIOMETRIC
SURFACE MAP (26 SEPTEMBER 2022)
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

- NOTES:**
1. NM INDICATES NOT MEASURED..
 2. MONITORING WELL LOCATION COORDIANATES WERE OBTAINED FROM TABLE 3-1, IN SYNTERRA'S SEPTEMBER 2021 SEMIANNUAL MONITORING REPORT.
 3. SHAPEFILES OF SITE FEATURES PROVIDED BY SYNTERRA.
 4. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 5. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 6. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 7. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 8. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- WELL SCREENED IN TRANSITION ZONE [GROUNDWATER ELEVATION, FEET]
- GROUNDWATER ELEVATION COUNTER
- GROUNDWATER FLOW DIRECTION
- SITE BOUNDARY
- RAILROAD
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

0 250 Feet

DRAWN BY: FLF DATE: 11/23/2022

REVISED BY: DATE:

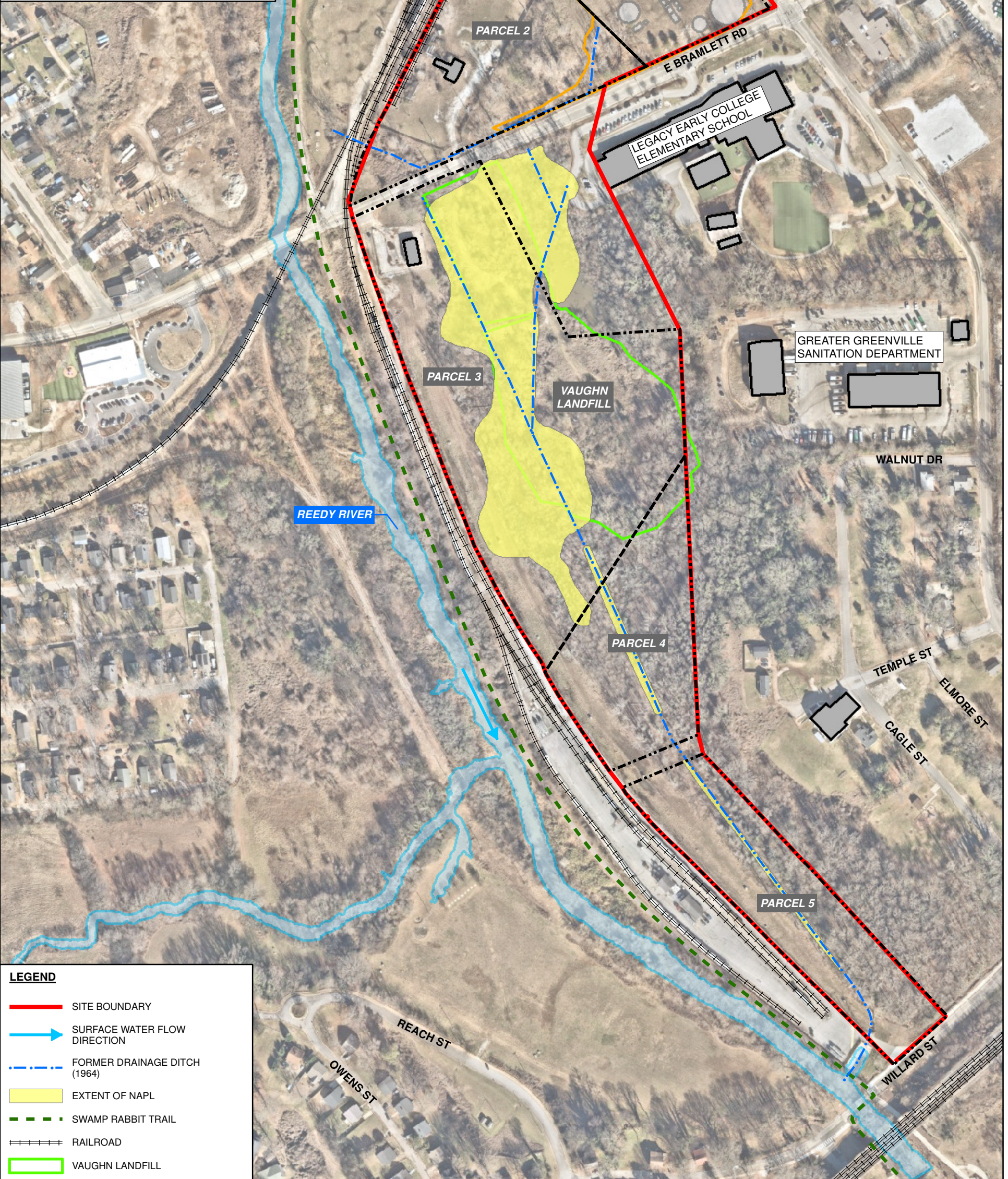
CHECKED BY: APB DATE: 12/16/2022

APPROVED BY: APB DATE: 12/16/2022

PROJECT MANAGER: APB DATE: 12/16/2022

FIGURE 3-7
TRANSITION ZONE POTENTIOMETRIC
SURFACE MAP (26 SEPTEMBER 2022)
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. NON-AQUEOUS PHASE LIQUID (NAPL), TAR-LIKE MATERIAL (TLM).
 3. NAPL MAY HAVE BEEN VISUALLY OBSERVED IN THE FORMS OF STAINING, THIN LENSES, GLOBULES, OR COATED MATRIX, BUT NAPL IN POTENTIALLY MOBILE QUANTITIES WAS NOT OBSERVED.
 4. 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. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 6. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 7. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 8. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



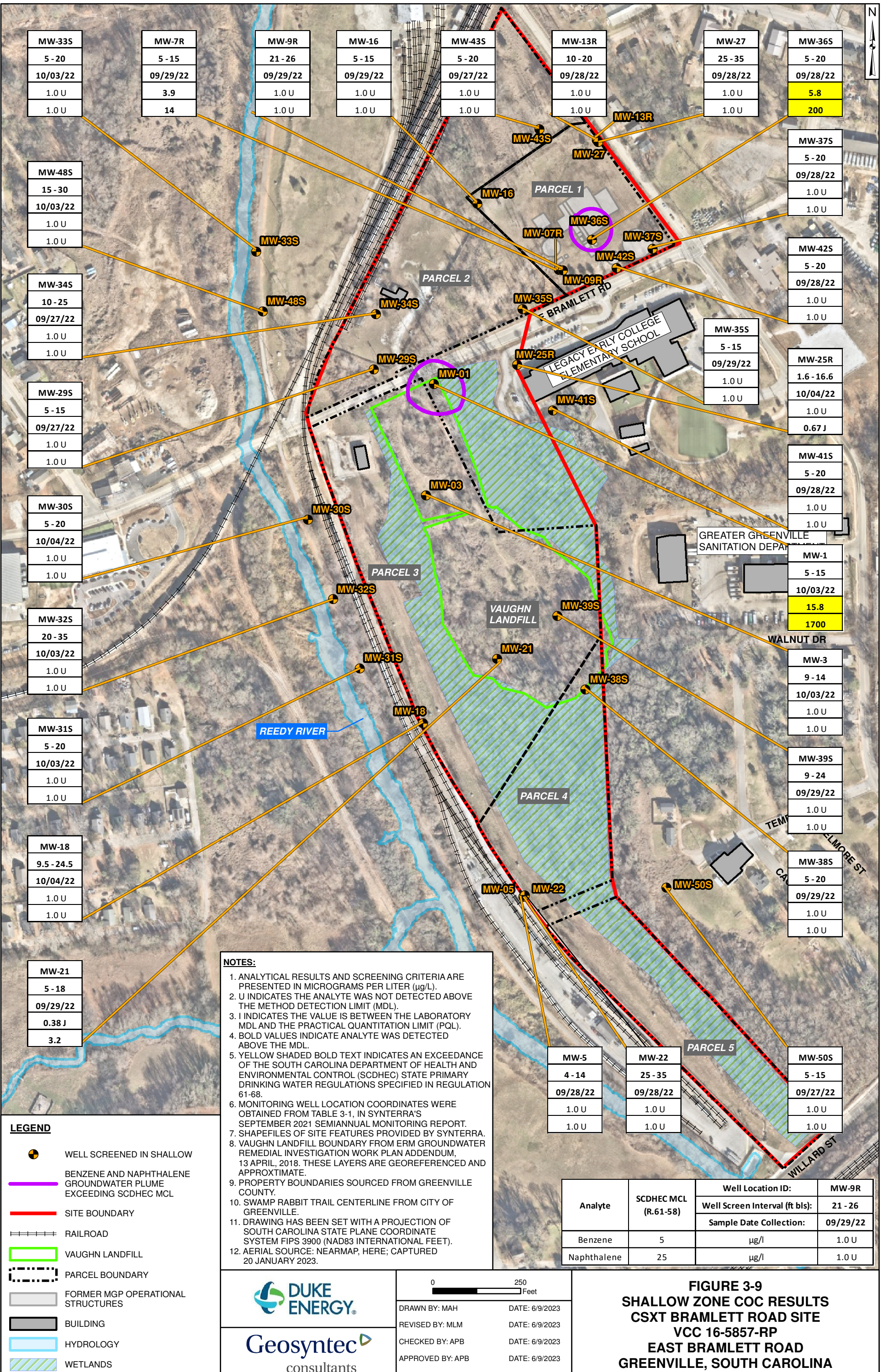
LEGEND

- SITE BOUNDARY
- SURFACE WATER FLOW DIRECTION
- - - FORMER DRAINAGE DITCH (1964)
- EXTENT OF NAPL
- - - SWAMP RABBIT TRAIL
- + + + + RAILROAD
- VAUGHN LANDFILL
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY

0 250
Feet

DRAWN BY: MAH DATE: 6/9/2023
 REVISED BY: RJM DATE: 6/9/2023
 CHECKED BY: RJM DATE: 6/9/2023
 APPROVED BY: APB DATE: 6/9/2023
 PROJECT MANAGER: APB DATE: 6/9/2023

FIGURE 3-8
EXTENT OF NAPL ON PARCELS 3, 4, 5,
AND LECE SCHOOL PROPERTY
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

- ANALYTICAL RESULTS AND SCREENING CRITERIA ARE PRESENTED IN MICROGRAMS PER LITER ($\mu\text{g/L}$).
- U INDICATES THE ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL).
- I INDICATES THE VALUE IS BETWEEN THE LABORATORY MDL AND THE PRACTICAL QUANTITATION LIMIT (PQL).
- BOLD VALUES INDICATE ANALYTE WAS DETECTED ABOVE THE MDL.
- YELLOW SHADED BOLD TEXT INDICATES AN EXCEEDANCE OF THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) STATE PRIMARY DRINKING WATER REGULATIONS SPECIFIED IN REGULATION 61-68.
- MONITORING WELL LOCATION COORDINATES WERE OBTAINED FROM TABLE 3-1, IN SYNTERRA'S SEPTEMBER 2021 SEMI-ANNUAL MONITORING REPORT.
- SHAPEFILES OF SITE FEATURES PROVIDED BY SYNTERRA.
- VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, 13 APRIL, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
- PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
- SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
- DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
- AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.

LEGEND

- WELL SCREENED IN SHALLOW
- BENZENE AND NAPHTHALENE GROUNDWATER PLUME EXCEEDING SCDHEC MCL
- SITE BOUNDARY
- RAILROAD
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

Analyte	SCDHEC MCL (R.61-58)	Well Location ID: MW-9R	
		Well Screen Interval (ft bls):	21 - 26
Benzene	5	$\mu\text{g/l}$	1.0 U
Naphthalene	25	$\mu\text{g/l}$	1.0 U

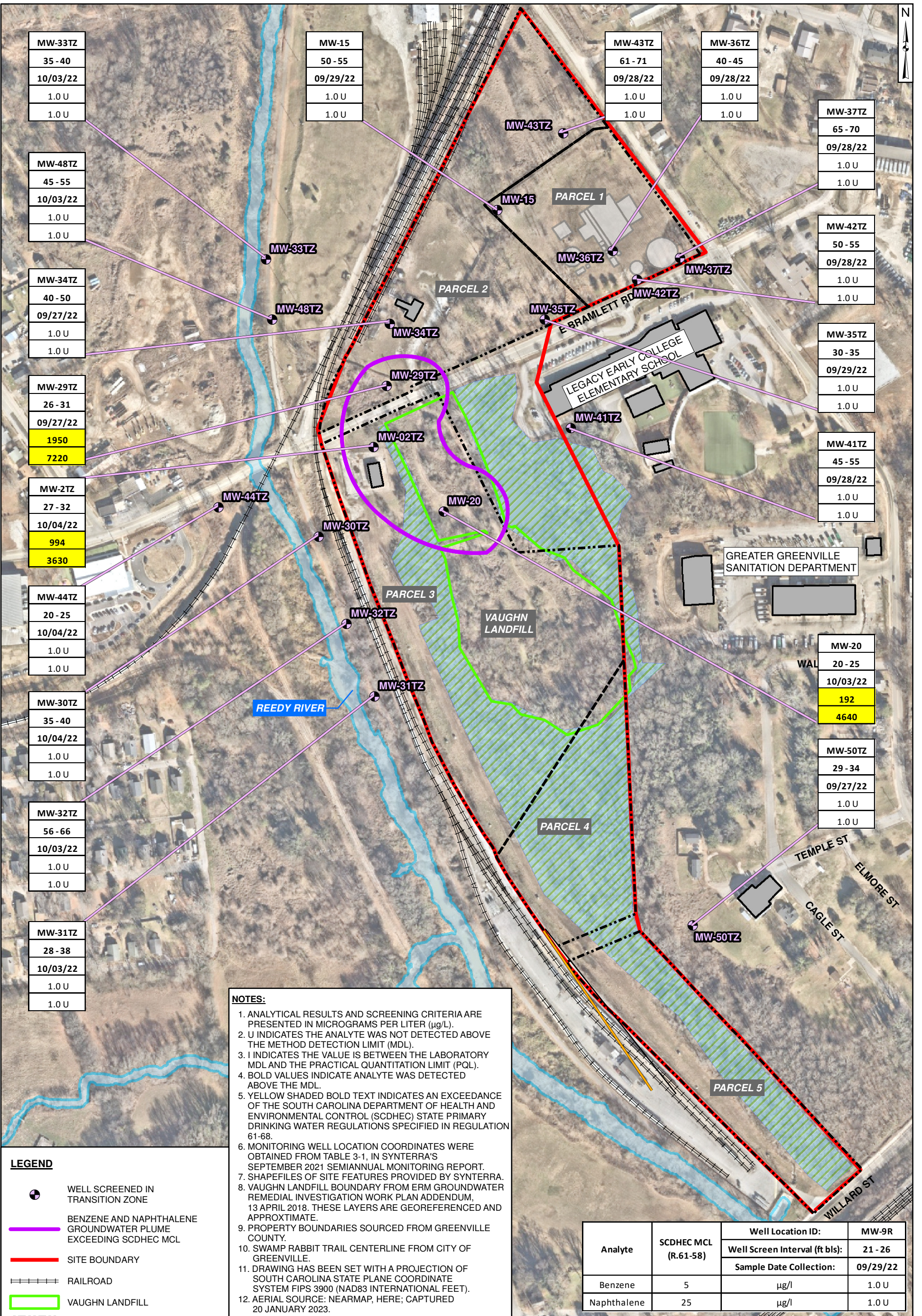
DUKE ENERGY

Geosyntec consultants

0 250 Feet

DRAWN BY: MAH DATE: 6/9/2023
 REVISED BY: MLM DATE: 6/9/2023
 CHECKED BY: APB DATE: 6/9/2023
 APPROVED BY: APB DATE: 6/9/2023
 PROJECT MANAGER: APB DATE: 6/9/2023

FIGURE 3-9
SHALLOW ZONE COC RESULTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA



NOTES:

- ANALYTICAL RESULTS AND SCREENING CRITERIA ARE PRESENTED IN MICROGRAMS PER LITER ($\mu\text{g/L}$).
- U INDICATES THE ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL).
- I INDICATES THE VALUE IS BETWEEN THE LABORATORY MDL AND THE PRACTICAL QUANTITATION LIMIT (PQL).
- BOLD VALUES INDICATE ANALYTE WAS DETECTED ABOVE THE MDL.
- YELLOW SHADED BOLD TEXT INDICATES AN EXCEEDANCE OF THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) STATE PRIMARY DRINKING WATER REGULATIONS SPECIFIED IN REGULATION 61-68.
- MONITORING WELL LOCATION COORDINATES WERE OBTAINED FROM TABLE 3-1, IN SYNTERRA'S SEPTEMBER 2021 SEMI-ANNUAL MONITORING REPORT.
- SHAPEFILES OF SITE FEATURES PROVIDED BY SYNTERRA.
- VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, 13 APRIL 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
- PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
- SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
- DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
- AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.

LEGEND

- WELL SCREENED IN TRANSITION ZONE
- BENZENE AND NAPHTHALENE GROUNDWATER PLUME EXCEEDING SCDHEC MCL
- SITE BOUNDARY
- RAILROAD
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

Analyte	SCDHEC MCL (R.61-58)	Well Location ID: MW-9R	
		Well Screen Interval (ft bls): 21 - 26	
		Sample Date Collection: 09/29/22	
Benzene	5	$\mu\text{g/l}$	1.0 U
Naphthalene	25	$\mu\text{g/l}$	1.0 U

0 250
Feet

DRAWN BY: FLF DATE: 6/9/2023

REVISED BY: MLM DATE: 6/9/2023

CHECKED BY: APB DATE: 6/9/2023

APPROVED BY: APB DATE: 6/9/2023

PROJECT MANAGER: APB DATE: 6/9/2023

FIGURE 3-10

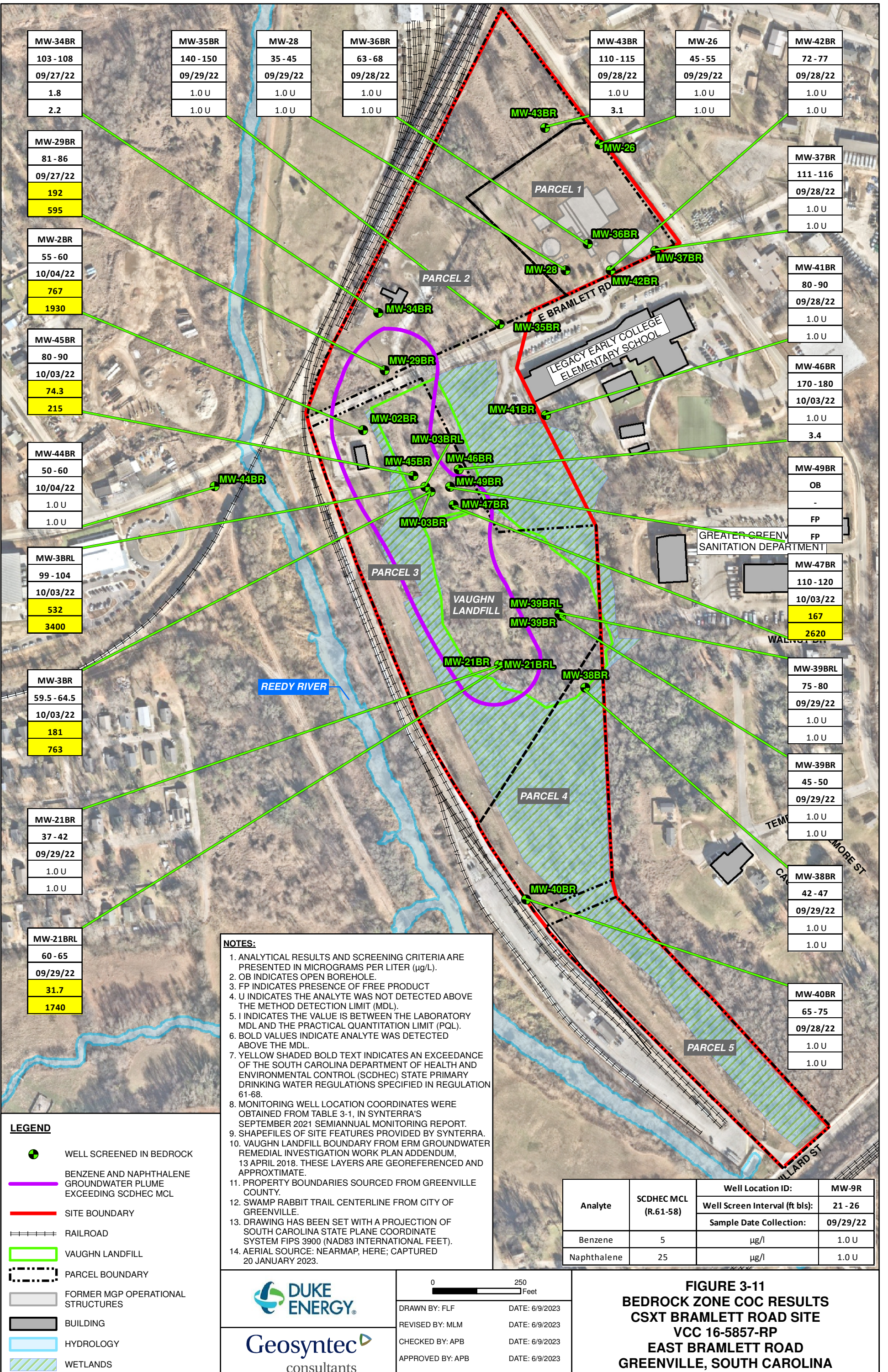
TRANSITION ZONE COC RESULTS

CSXT BRAMLETT ROAD SITE

VCC 16-5857-RP

EAST BRAMLETT ROAD

GREENVILLE, SOUTH CAROLINA



MW-34BR 103 - 108 09/27/22 1.8 2.2	MW-35BR 140 - 150 09/29/22 1.0 U 1.0 U	MW-28 35 - 45 09/29/22 1.0 U 1.0 U	MW-36BR 63 - 68 09/28/22 1.0 U 1.0 U	MW-43BR 110 - 115 09/28/22 1.0 U 3.1	MW-26 45 - 55 09/29/22 1.0 U 1.0 U	MW-42BR 72 - 77 09/28/22 1.0 U 1.0 U
MW-29BR 81 - 86 09/27/22 192 595						MW-37BR 111 - 116 09/28/22 1.0 U 1.0 U
MW-2BR 55 - 60 10/04/22 767 1930						MW-41BR 80 - 90 09/28/22 1.0 U 1.0 U
MW-45BR 80 - 90 10/03/22 74.3 215						MW-46BR 170 - 180 10/03/22 1.0 U 3.4
MW-44BR 50 - 60 10/04/22 1.0 U 1.0 U						MW-49BR OB - FP FP
MW-3BRL 99 - 104 10/03/22 532 3400						MW-47BR 110 - 120 10/03/22 167 2620
MW-3BR 59.5 - 64.5 10/03/22 181 763						MW-39BRL 75 - 80 09/29/22 1.0 U 1.0 U
MW-21BR 37 - 42 09/29/22 1.0 U 1.0 U						MW-39BR 45 - 50 09/29/22 1.0 U 1.0 U
MW-21BRL 60 - 65 09/29/22 31.7 1740						MW-38BR 42 - 47 09/29/22 1.0 U 1.0 U

NOTES:

- ANALYTICAL RESULTS AND SCREENING CRITERIA ARE PRESENTED IN MICROGRAMS PER LITER (µg/L).
- OB INDICATES OPEN BOREHOLE.
- FP INDICATES PRESENCE OF FREE PRODUCT
- U INDICATES THE ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT (MDL).
- I INDICATES THE VALUE IS BETWEEN THE LABORATORY MDL AND THE PRACTICAL QUANTITATION LIMIT (PQL).
- BOLD VALUES INDICATE ANALYTE WAS DETECTED ABOVE THE MDL.
- YELLOW SHADED BOLD TEXT INDICATES AN EXCEEDANCE OF THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) STATE PRIMARY DRINKING WATER REGULATIONS SPECIFIED IN REGULATION 61-68.
- MONITORING WELL LOCATION COORDINATES WERE OBTAINED FROM TABLE 3-1, IN SYNTERRA'S SEPTEMBER 2021 SEMI-ANNUAL MONITORING REPORT.
- SHAPEFILES OF SITE FEATURES PROVIDED BY SYNTERRA.
- VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, 13 APRIL 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
- PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
- SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
- DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
- AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.

LEGEND

- WELL SCREENED IN BEDROCK
- BENZENE AND NAPHTHALENE GROUNDWATER PLUME EXCEEDING SCDHEC MCL
- SITE BOUNDARY
- RAILROAD
- VAUGHN LANDFILL
- PARCEL BOUNDARY
- FORMER MGP OPERATIONAL STRUCTURES
- BUILDING
- HYDROLOGY
- WETLANDS

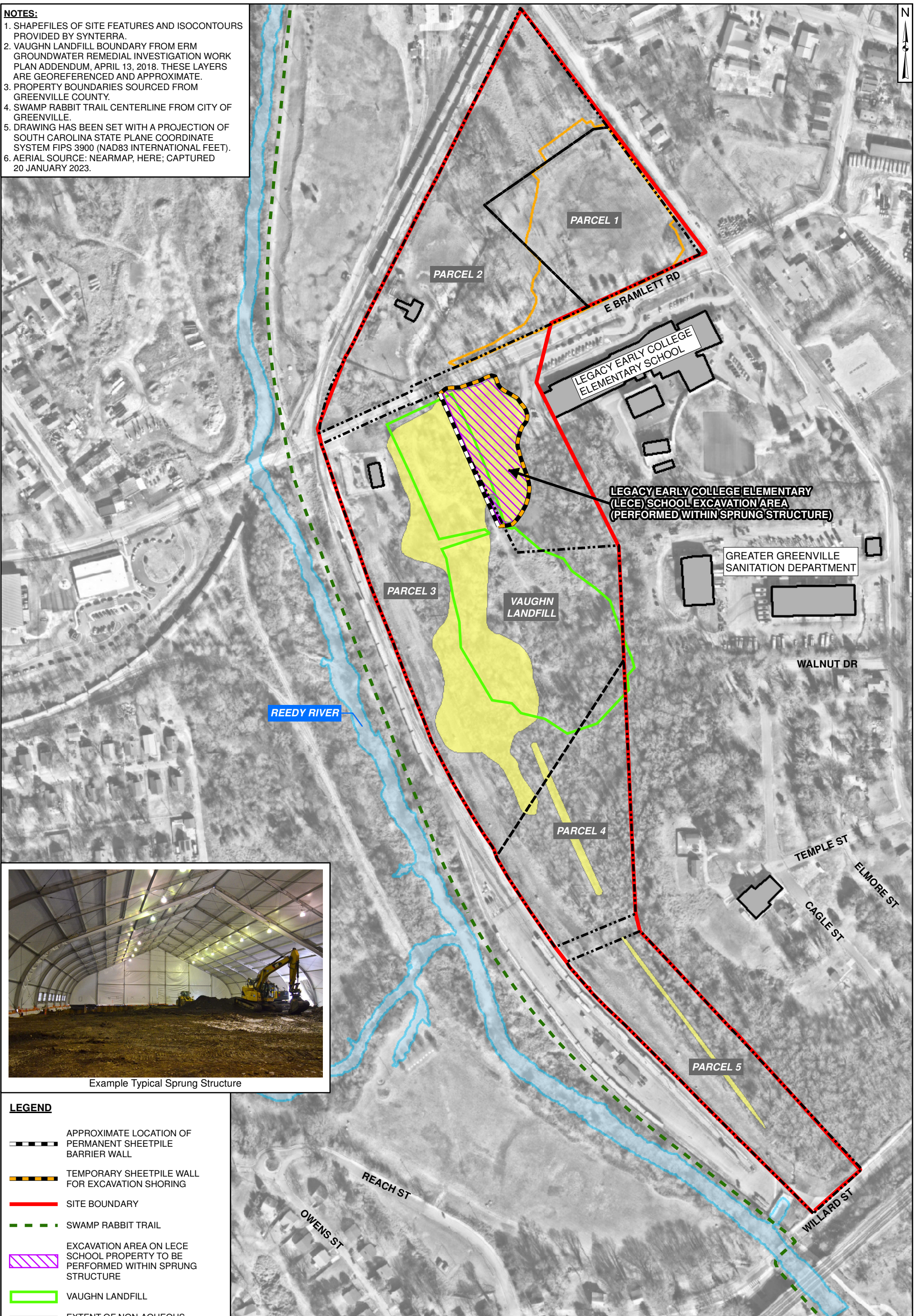
Analyte	SCDHEC MCL (R.61-58)	Well Location ID: MW-9R	
		Well Screen Interval (ft bls):	21 - 26
		Sample Date Collection:	09/29/22
Benzene	5	µg/l	1.0 U
Napthalene	25	µg/l	1.0 U

0 250 Feet
 DRAWN BY: FLF DATE: 6/9/2023
 REVISED BY: MLM DATE: 6/9/2023
 CHECKED BY: APB DATE: 6/9/2023
 APPROVED BY: APB DATE: 6/9/2023
 PROJECT MANAGER: APB DATE: 6/9/2023

**FIGURE 3-11
BEDROCK ZONE COC RESULTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA**

Path: (H:\usville-01\DATA)\H:\usville-01\DATA\GIS\PR7559_BramletteMGP\MXDs\202210\mw_bedrock_GW_Analytical_202211.mxd 09 June 2023. Last Edited by: csaville

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



Example Typical Sprung Structure

- LEGEND**
- APPROXIMATE LOCATION OF PERMANENT SHEETPILE BARRIER WALL
 - TEMPORARY SHEETPILE WALL FOR EXCAVATION SHORING
 - SITE BOUNDARY
 - SWAMP RABBIT TRAIL
 - EXCAVATION AREA ON LECE SCHOOL PROPERTY TO BE PERFORMED WITHIN SPRUNG STRUCTURE
 - VAUGHN LANDFILL
 - EXTENT OF NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS
 - EXCAVATED AREA (2001-2002)
 - PARCEL BOUNDARY
 - BUILDING
 - REEDY RIVER AND TRIBUTARIES



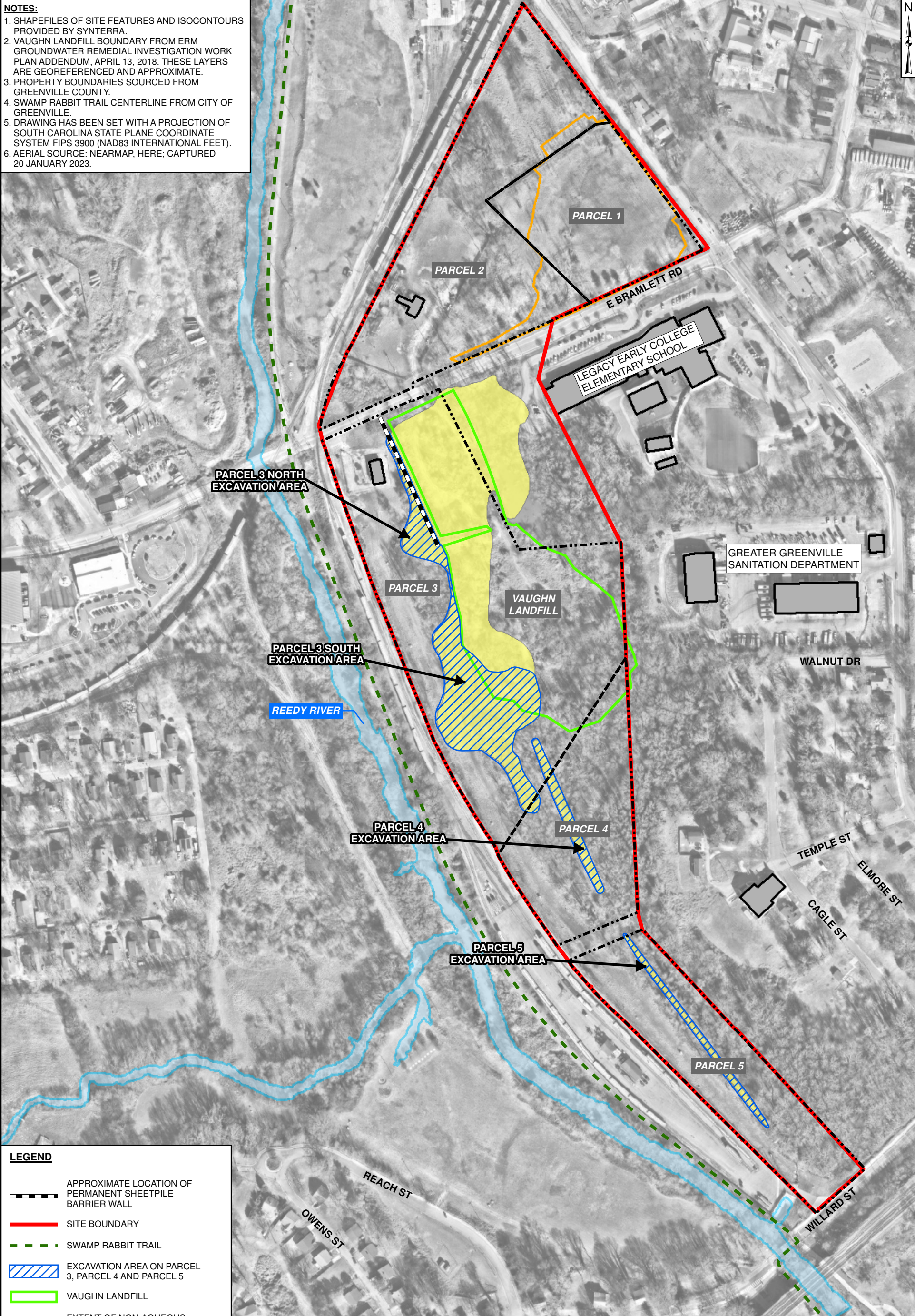
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 REVISED BY: AB DATE: 9/26/2023
 CHECKED BY: MM DATE: 9/26/2023
 APPROVED BY: JL DATE: 9/26/2023
 PROJECT MANAGER: AB DATE: 9/26/2023

FIGURE 9-1
COMBINED REMEDIAL ALTERNATIVE 3 -
LECE REMEDIAL ELEMENTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- APPROXIMATE LOCATION OF PERMANENT SHEETPILE BARRIER WALL
- SITE BOUNDARY
- SWAMP RABBIT TRAIL
- EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
- VAUGHN LANDFILL
- EXTENT OF NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- BUILDING
- REEDY RIVER AND TRIBUTARIES

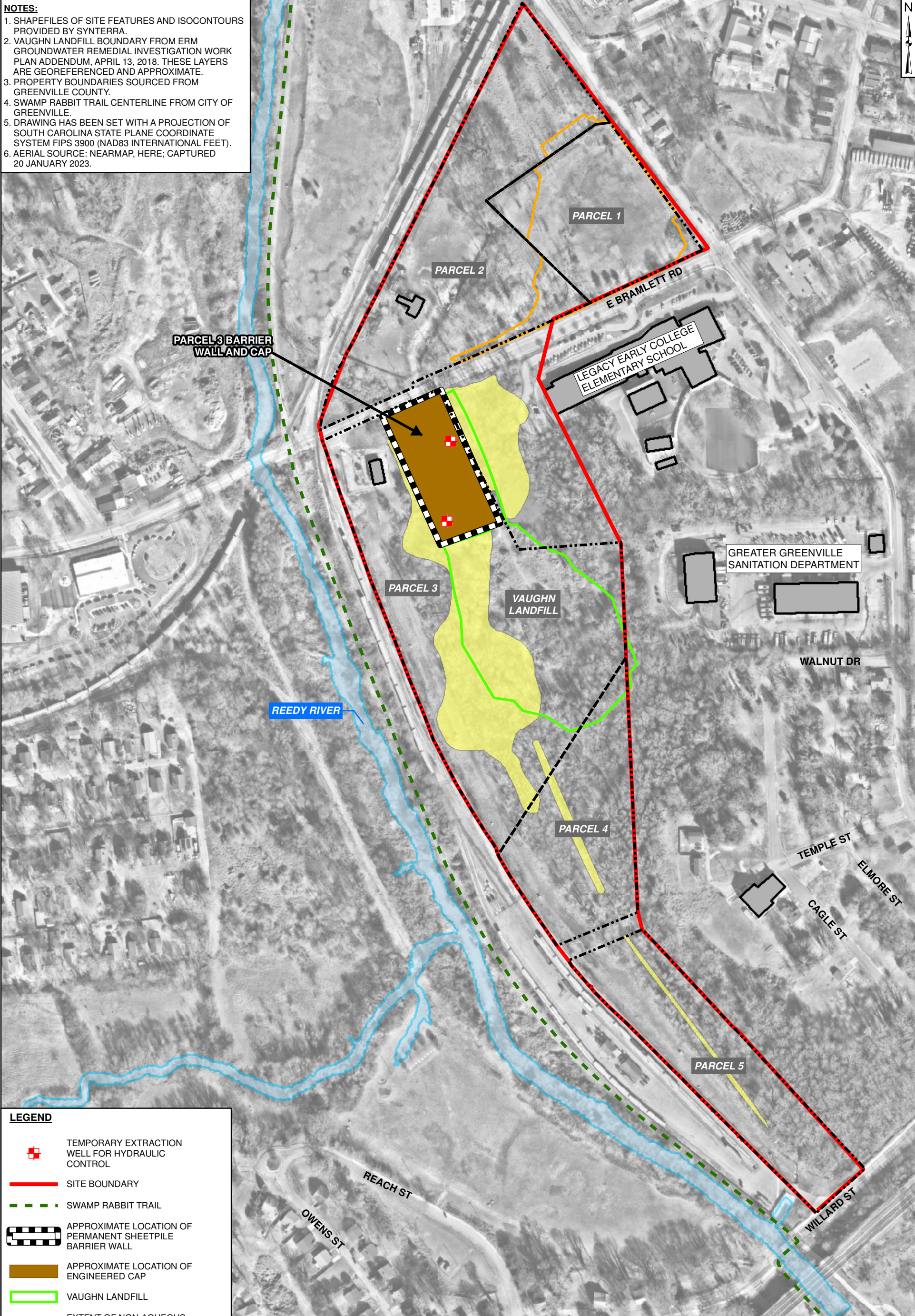
0 250
Feet

DRAWN BY: CRS DATE: 9/26/2023
 REVISED BY: AB DATE: 9/26/2023
 CHECKED BY: MM DATE: 9/26/2023
 APPROVED BY: JL DATE: 9/26/2023
 PROJECT MANAGER: AB DATE: 9/26/2023

FIGURE 9-2
COMBINED REMEDIAL ALTERNATIVE 3 -
PARCEL 3, 4, AND 5 EXCAVATION
REMEDIAL ELEMENTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- TEMPORARY EXTRACTION WELL FOR HYDRAULIC CONTROL
- SITE BOUNDARY
- SWAMP RABBIT TRAIL
- APPROXIMATE LOCATION OF PERMANENT SHEETPILE BARRIER WALL
- APPROXIMATE LOCATION OF ENGINEERED CAP
- VAUGHN LANDFILL
- EXTENT OF NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- BUILDING
- REEDY RIVER AND TRIBUTARIES

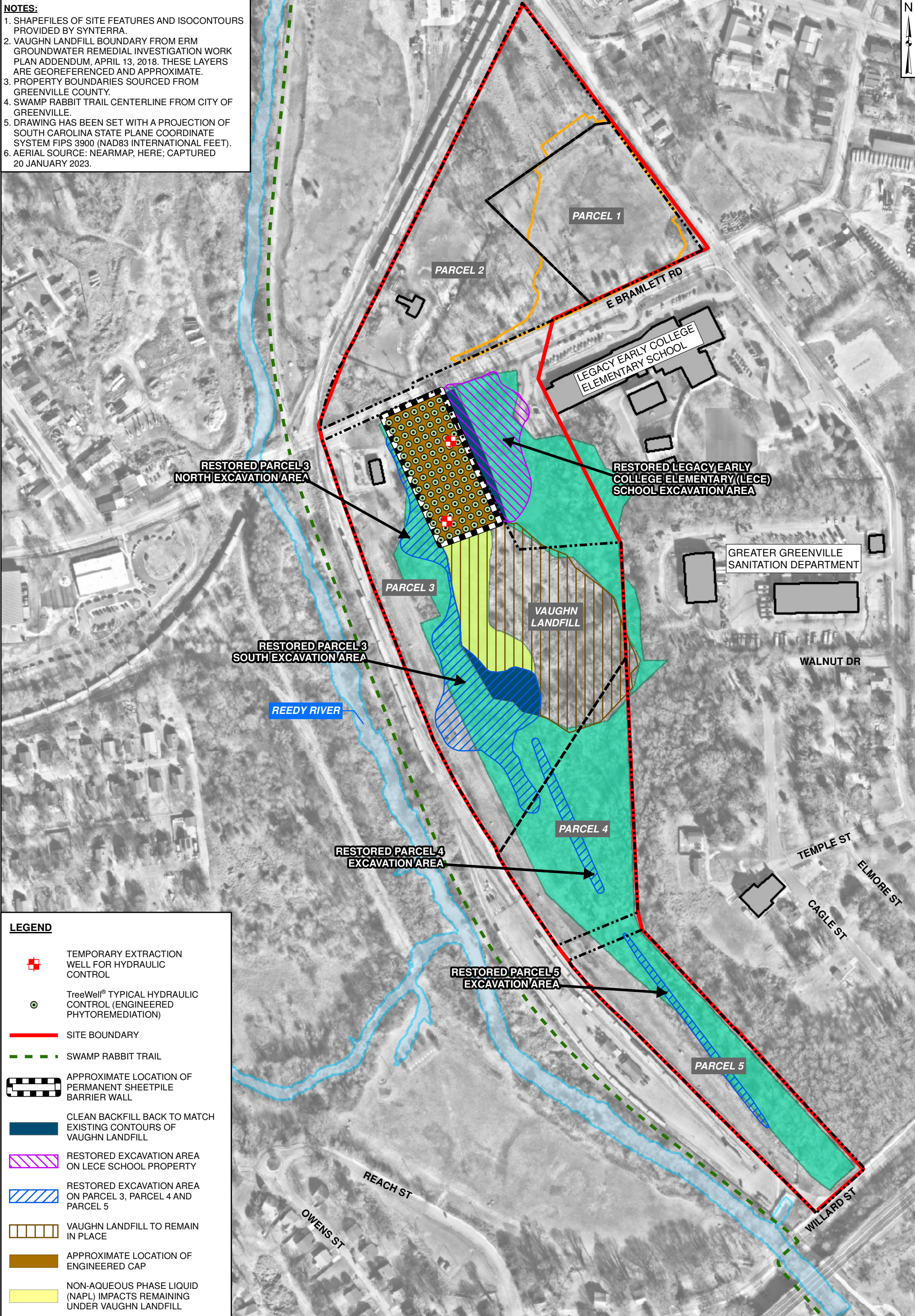
0 250
Feet

DRAWN BY: CRS DATE: 9/26/2023
 REVISED BY: AB DATE: 9/26/2023
 CHECKED BY: MM DATE: 9/26/2023
 APPROVED BY: JL DATE: 9/26/2023
 PROJECT MANAGER: AB DATE: 9/26/2023

FIGURE 9-3
COMBINED REMEDIAL ALTERNATIVE 3 -
BARRIER WALL AND CAP REMEDIAL ELEMENTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- TEMPORARY EXTRACTION WELL FOR HYDRAULIC CONTROL
- TreeWell® TYPICAL HYDRAULIC CONTROL (ENGINEERED PHYTOREMEDIATION)
- SITE BOUNDARY
- SWAMP RABBIT TRAIL
- APPROXIMATE LOCATION OF PERMANENT SHEETPILE BARRIER WALL
- CLEAN BACKFILL BACK TO MATCH EXISTING CONTOURS OF VAUGHN LANDFILL
- RESTORED EXCAVATION AREA ON LECE SCHOOL PROPERTY
- RESTORED EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
- VAUGHN LANDFILL TO REMAIN IN PLACE
- APPROXIMATE LOCATION OF ENGINEERED CAP
- NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS REMAINING UNDER VAUGHN LANDFILL
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- BUILDING
- WETLANDS
- REEDY RIVER AND TRIBUTARIES

0 250
Feet

DRAWN BY: CRS DATE: 9/27/2023

REVISED BY: AB DATE: 9/27/2023

CHECKED BY: MM DATE: 9/27/2023

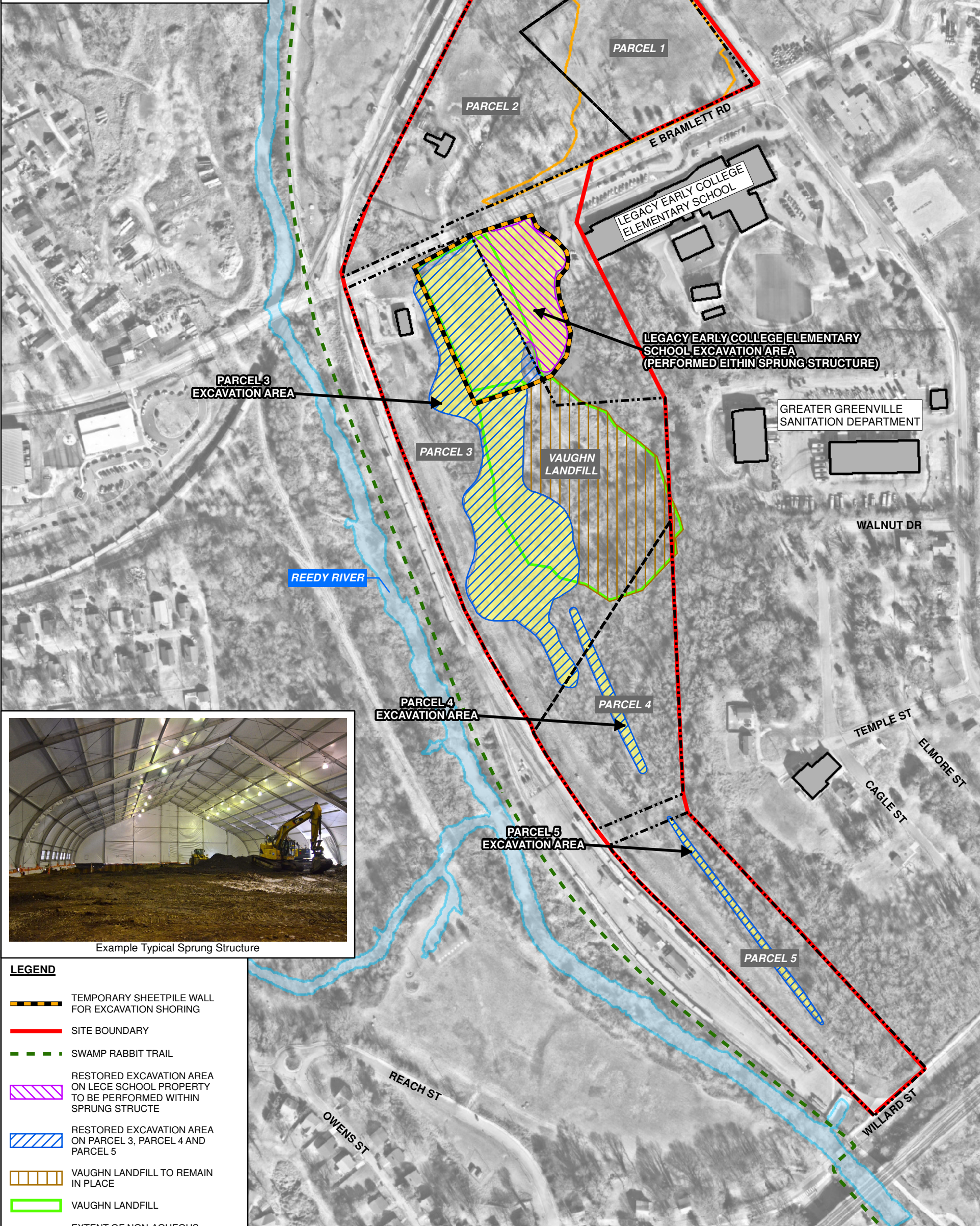
APPROVED BY: JL DATE: 9/27/2023

PROJECT MANAGER: AB DATE: 9/27/2023

FIGURE 9-4
COMBINED REMEDIAL ALTERNATIVE 3 -
POST-REMEDIAL ACTION
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA








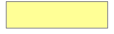


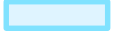

NOTES:


1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



Example Typical Sprung Structure

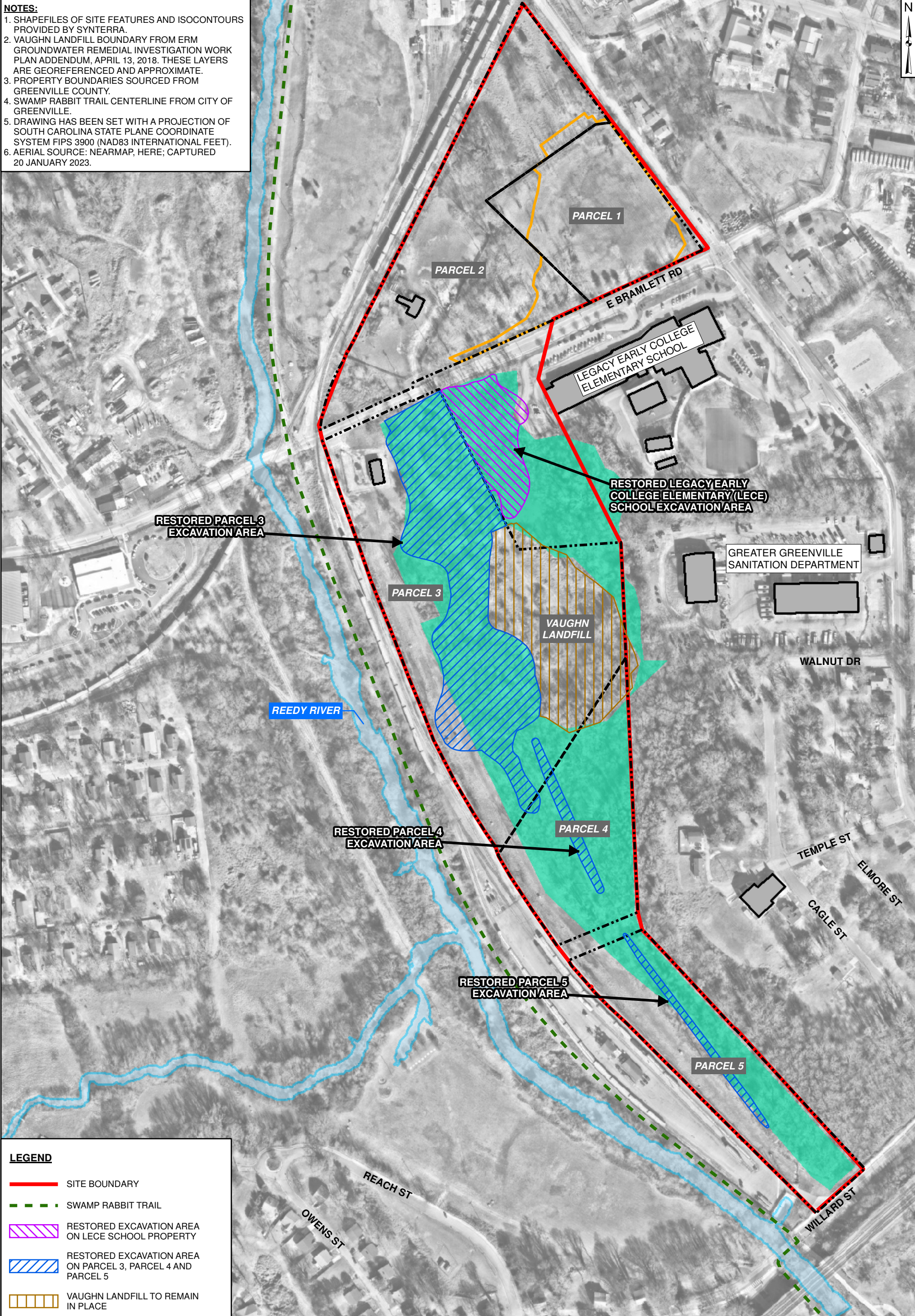
LEGEND

	TEMPORARY SHEETPILE WALL FOR EXCAVATION SHORING
	SITE BOUNDARY
	SWAMP RABBIT TRAIL
	RESTORED EXCAVATION AREA ON LECE SCHOOL PROPERTY TO BE PERFORMED WITHIN SPRUNG STRUCTURE
	RESTORED EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
	VAUGHN LANDFILL TO REMAIN IN PLACE
	VAUGHN LANDFILL
	EXTENT OF NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS
	EXCAVATED AREA (2001-2002)
	PARCEL BOUNDARY
	BUILDING
	REEDY RIVER AND TRIBUTARIES

	0	250
	Feet	
DRAWN BY: CRS	DATE: 9/27/2023	
REVISED BY: AB	DATE: 9/27/2023	
CHECKED BY: MM	DATE: 9/27/2023	
APPROVED BY: JL	DATE: 9/27/2023	
PROJECT MANAGER: AB	DATE: 9/27/2023	

**FIGURE 9-5
COMBINED REMEDIAL ALTERNATIVE 4 -
REMEDIAL ELEMENTS
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA**

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

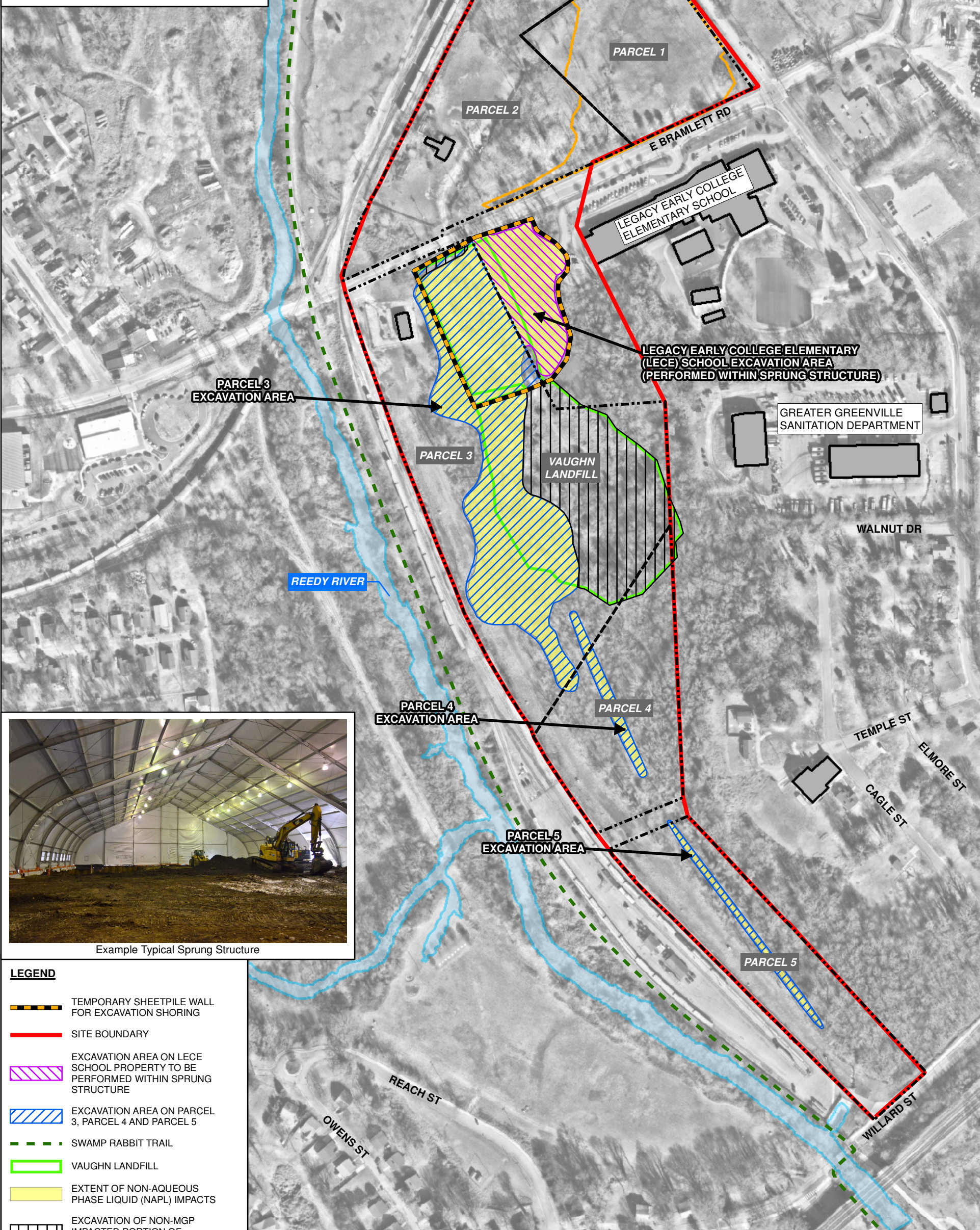
- SITE BOUNDARY
- - - SWAMP RABBIT TRAIL
- ▨ RESTORED EXCAVATION AREA ON LECE SCHOOL PROPERTY
- ▨ RESTORED EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
- ▨ VAUGHN LANDFILL TO REMAIN IN PLACE
- ▨ EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- WETLANDS
- BUILDING
- REEDY RIVER AND TRIBUTARIES

0 250
Feet

DRAWN BY: CRS DATE: 9/26/2023
 REVISED BY: AB DATE: 9/26/2023
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 APPROVED BY: JL DATE: 9/26/2023
 PROJECT MANAGER: AB DATE: 9/26/2023

FIGURE 9-6
COMBINED REMEDIAL ALTERNATIVE 4 -
POST-REMEDIAL ACTION
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



Example Typical Sprung Structure

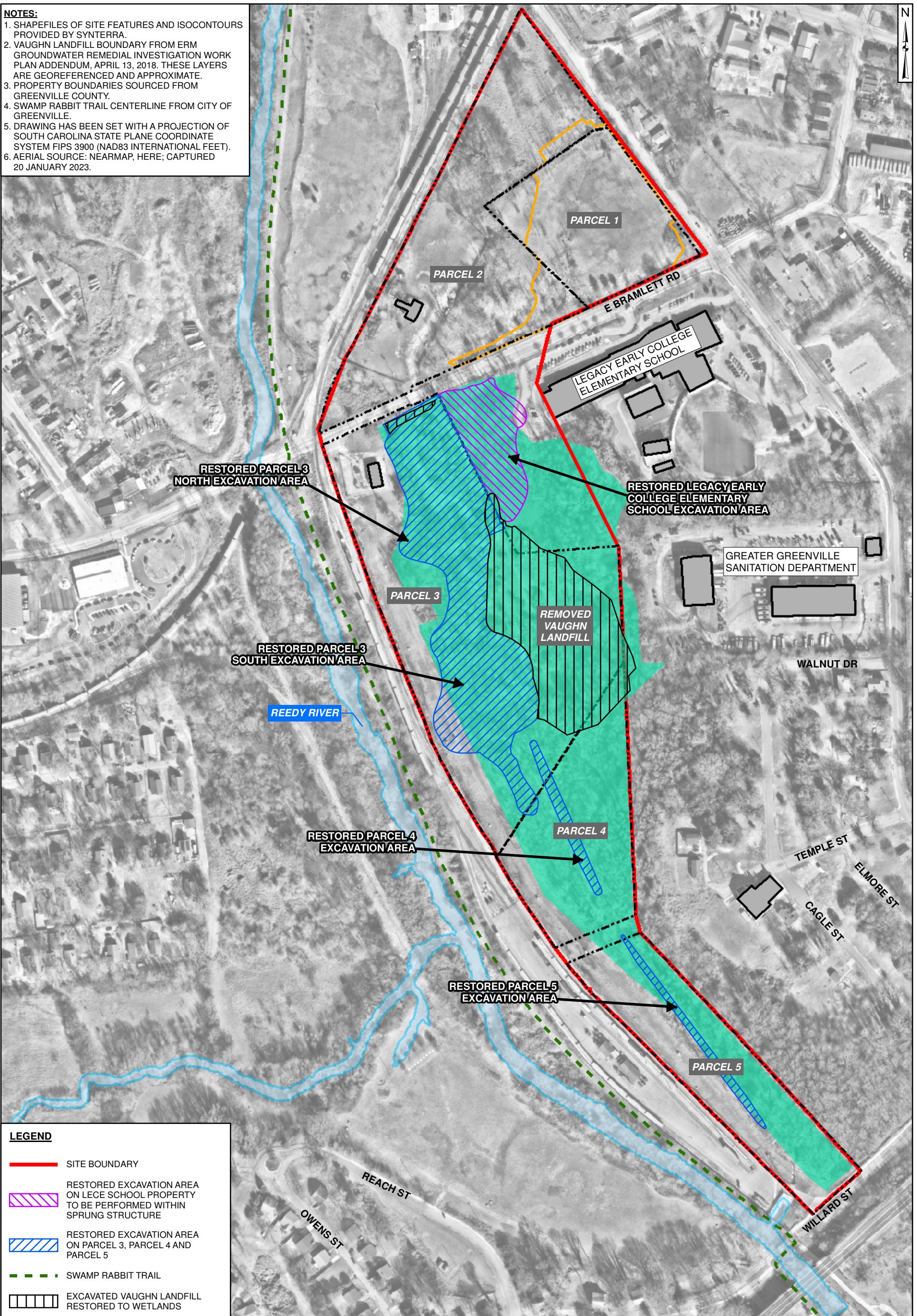
- LEGEND**
- TEMPORARY SHEETPILE WALL FOR EXCAVATION SHORING
 - SITE BOUNDARY
 - EXCAVATION AREA ON LECE SCHOOL PROPERTY TO BE PERFORMED WITHIN SPRUNG STRUCTURE
 - EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
 - SWAMP RABBIT TRAIL
 - VAUGHN LANDFILL
 - EXTENT OF NON-AQUEOUS PHASE LIQUID (NAPL) IMPACTS
 - EXCAVATION OF NON-MGP IMPACTED PORTION OF VAUGHN LANDFILL
 - EXCAVATED AREA (2001-2002)
 - PARCEL BOUNDARY
 - BUILDING
 - REEDY RIVER AND TRIBUTARIES

0 250
Feet

DRAWN BY: CRS DATE: 9/26/2023
 REVISED BY: AB DATE: 9/26/2023
 CHECKED BY: MM DATE: 9/26/2023
 APPROVED BY: JL DATE: 9/26/2023
 PROJECT MANAGER: AB DATE: 9/26/2023

**FIGURE 9-7
 COMBINED REMEDIAL ALTERNATIVE 5 -
 REMEDIAL ELEMENTS
 CSXT BRAMLETT ROAD SITE
 VCC 16-5857-RP
 EAST BRAMLETT ROAD
 GREENVILLE, SOUTH CAROLINA**

- NOTES:**
1. SHAPEFILES OF SITE FEATURES AND ISOCONTOURS PROVIDED BY SYNTERRA.
 2. VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.
 3. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
 4. SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.
 5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).
 6. AERIAL SOURCE: NEARMAP, HERE; CAPTURED 20 JANUARY 2023.



LEGEND

- SITE BOUNDARY
- ▨ RESTORED EXCAVATION AREA ON LECE SCHOOL PROPERTY TO BE PERFORMED WITHIN SPRUNG STRUCTURE
- ▨ RESTORED EXCAVATION AREA ON PARCEL 3, PARCEL 4 AND PARCEL 5
- - - SWAMP RABBIT TRAIL
- EXCAVATED VAUGHN LANDFILL RESTORED TO WETLANDS
- ▨ EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY
- WETLANDS
- BUILDING
- REEDY RIVER AND TRIBUTARIES

0 250
Feet

DRAWN BY: CRS DATE: 9/27/2023
 REVISED BY: AB DATE: 9/27/2023
 CHECKED BY: MM DATE: 9/27/2023
 APPROVED BY: JL DATE: 9/27/2023
 PROJECT MANAGER: AB DATE: 9/27/2023

FIGURE 9-8
COMBINED REMEDIAL ALTERNATIVE 5 -
POST-REMEDIAL ACTION
CSXT BRAMLETT ROAD SITE
VCC 16-5857-RP
EAST BRAMLETT ROAD
GREENVILLE, SOUTH CAROLINA

APPENDIX A
SynTerra's Risk Estimation for Parcels 1 and 2
Soil



TECHNICAL MEMORANDUM

Date: August 4, 2021 File: 00.2731.00
To: Mr. Richard Powell
Cc: Mr. Jim Langenbach P.E., Mr. David Riotte P.E., Mr. Andrew Brey P.G.,
Mr. Todd Plating P.G.
From: Dr. Matt Huddleston Ph.D. *MH*
Subject: Bramlette Former MGP Parcel 2 Soil Removal – Risk Estimation and Basis for
Removal Action

On behalf of Duke Energy, SynTerra prepared a Remedial Investigation (RI) Report pertaining to the location of the Former Bramlette Manufactured Gas Plant (MGP, Site) at 400 East Bramlette Road. The Site is in Greenville, Greenville County, South Carolina and is comprised of five parcels and a portion of the Legacy Elementary School property that total approximately 35 acres in area. The RI report was submitted to the South Carolina Department of Health and Environmental Control (SCDHEC) on June 26, 2020. SCDHEC approved the RI Report on September 1, 2020.

This technical memorandum presents the regulatory framework, risk estimation approach, and confirmation sampling effort to demonstrate that removal of impacted soil from a limited area in Parcel 2 can reduce potential risk to less than residential exposure thresholds.

RISK ESTIMATION FOR PARCEL 1 AND PARCEL 2

The 2020 RI Report included a human health risk assessment to evaluate potential risks associated with constituents of interest that might remain in environmental media. The Virginia Unified Risk Assessment Model (VURAM) can be used to assist in the development of voluntary remediation program risk assessments.

REGULATORY BASIS

For evaluating potential risk to human health, screening level and baseline assessments were conducted in accordance with the following United Environmental Protection Agency (USEPA) guidance:

- Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual, Part A (1989)
- Guidelines for Cancer Risk Assessment (1996, 2005)
- Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (2002a)
- Regional Screening Levels Tables (November 2019 or current version)
- Region 4 Human Health Risk Assessment Supplemental Guidance (2018)

RESULTS

No risks were identified for a construction worker exposed to soil at Parcel 1 or Parcel 2 which are currently zoned for industrial land use. As a conservative measure and to understand the potential risk of residential land use, a screening level comparison of surface soil data to USEPA Soil Screening Levels (SSLs) for residential soil was completed. Comparison to residential SSLs indicated five constituents at one location (SA-SB-46) contained concentrations greater than screening levels. Soil data screened in the 2020 RI report to estimate Parcel 1 and Parcel 2 risk are summarized in **Table 1**.

The five surface soil chemicals of potential concern (COPCs) evaluated in the 2020 baseline risk assessment included:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

The five COPCs were selected based on the screening level assessment indicating concentrations of each constituent exceeded human health screening criteria. Exposure point concentrations (EPCs) were calculated for each COPC using ProUCL 5.1 and used in the risk estimation calculation in VURAM. ProUCL output and EPCs are provided in **Attachment 1**. Potential cancer risk for a residential exposure scenario greater than the Lifetime Cancer Risk (ELCR) was identified.

Carcinogenic and non-carcinogenic risk results are listed for each exposure scenario below.

Exposure scenario	Cancer risk	Non-Cancer risk	Non-Cancer risk child
Construction worker cumulative site risk to surface soil	2.9×10^{-8}	8.3×10^{-3}	NA
Construction worker cumulative site risk to sub-surface soil	1.0×10^{-7}	2.9×10^{-2}	NA
Residential cumulative site risk to surface soil	8.7×10^{-6}	4.9×10^{-3}	4.26×10^{-2}

VURAM output and default exposure factors are in **Attachment 2a**.

Because the potential risk given a residential exposure scenario is only incrementally greater than the residential risk cancer threshold, a limited soil removal proximate to the SA-SB-46 location was evaluated. The risk driver for residential exposure to surface soil is benzo(a)pyrene, representing 75 percent of the contribution to soil carcinogenic risk. The other four COPCs were not carried forward as significant contributors to risk because their individual carcinogenic risk contribution is less than 1×10^{-6} and their non-carcinogenic hazard quotient is less than 0.1 (USEPA, 2018). Therefore, the benzo(a)pyrene concentration is considered in the planning and confirmatory risk modeling for the limited soil removal.

PROPOSED LIMITED SOIL REMOVAL ACTION EVALUATION

Because the estimated risk at the Site is likely the result of an isolated occurrence of benzo(a)pyrene within Parcel 2, an effort to evaluate if a limited soil removal would successfully reduce risk to acceptable levels for residential use was completed. The following evaluation demonstrates that removal and replacement of soil in the vicinity of SA-SB-46 with clean fill would reduce risk to less than residential cancer risk thresholds (1×10^{-6}).

Shallow soil was evaluated for the purposes of estimating potential risk through residential exposure. The USEPA states that residential activities such as gardening may disturb soils to a depth of up to two feet, potentially exposing receptors to contaminants in subsurface soil via direct contact pathways such as ingestion and dermal absorption (USEPA, 2002). In the conservative gardening scenario, twenty-four (24) inches of clean soil cover is protective of human health. A minimum of a 24-inch clean fill barrier is necessary to prevent plant roots, root vegetables, and clean soil that is mixed via rototilling from encountering contaminated soil at depth (USEPA, 2003).

The USEPA recently completed a remedial cleanup of polycyclic aromatic hydrocarbon (PAH) impacted soils in Eastwick, Pennsylvania which included the removal of the top two feet of soil and replacement with clean fill (USEPA, 2016). That approach is similar to the approach described herein and considered protective of human health.

DELINEATION SAMPLING METHODS AND RESULTS

To determine the horizontal extent of a limited soil removal, a sampling grid was established at the SA-SB-46 location (**Figure 1**). Borings were advanced using direct push technology (DPT) from land surface to approximately 5 feet below land surface (bls). The soil cores were visually inspected and logged for lithology and presence/absence of non-aqueous phase liquid (NAPL) from MGP operations. Borings were abandoned in accordance with SCDHEC well installation standards, R. 61-71. Boring logs are included in **Attachment 3**.

Nine boring locations closest to SA-SB-46 (40 by 40-foot square and center boring) were initially sampled and analyzed. Subsequent analysis of soil samples collected from the outer sampling grid boring locations was completed until surface soils indicated constituent concentrations less than residential RSLs. Soil samples were collected from 0.5 foot to 1 foot bls and 5.5 feet to 6 feet bls and submitted to Pace Analytical for analysis. Field screening and sample collection were completed in accordance with procedures described in the Quality Assurance Project Plan (QAPP) (SynTerra, 2018). Additional shallow soil samples were collected to achieve lower method detection limits (MDLs) for benzo(a)pyrene and dibenz(a,h)anthracene.

One delineation sample (RI-SB-15) contained elevated PAH concentrations similar to SA-SB-46. Benzo(a)pyrene data are shown on **Figure 1**. Delineation analytical results are summarized in **Table 2** and laboratory analytical reports are included in **Attachment 4**.

POST SOIL REMOVAL RISK ESTIMATION

Risk was calculated using VURAM. Conservative default model exposure values were used for the construction worker and residential exposure scenarios.

“VURAM Guidance document does not establish binding rules but provides a recommended risk assessment process that incorporates risk assessment methodology described in RAGS Part A through E and EPA RSL Guidance. The report outputs from VURAM provide the information required in RAGS Part D tables.” (VURAM, 2020).

Analytical results that correspond to soil remaining in place after a removal action were used to calculate updated EPCs for benzo(a)pyrene. Analytical results from locations where soil would be removed were replaced with MDLs to represent a clean-fill

scenario. The updated EPCs were modeled to evaluate residential risk at Parcel 1 and Parcel 2 under a post-soil removal scenario.

Results indicate a total non-cancer hazard index less than 1.0 and a cancer risk of 9.0×10^{-7} , which is less than the cancer risk threshold of 1×10^{-6} .

VURAM output and default exposure factors are presented in **Attachment 2b**.

RECOMMENDATIONS

The following recommendations are based on an evaluation of potential risk for a residential land use scenario and confirmation sampling:

- Remove and replace soil within the 40 x 40-foot area around SA-SB-46 and the RI-SB-15 location as shown in **Figure 1**.
- Consistent with USEPA guidance and similar soil removal efforts, remove soil to a depth of two feet and replace with clean fill.

ATTACHMENTS

Figure 1	Proposed Limited Soil Removal
Table 1	Summary of Soil Analytical Result 2019
Table 2	Summary of Soil Analytical Results for Proposed Limited Soil Removal Delineation
Attachment 1	Surface Soil 2019 ProUCL Output
Attachment 2a	Residential and Construction Output and Default Exposure Factors
Attachment 2b	Residential VURAM BaP Post-Soil Removal Output and Default Exposure Factors
Attachment 3	Boring Logs
Attachment 4	Laboratory Analytical Reports

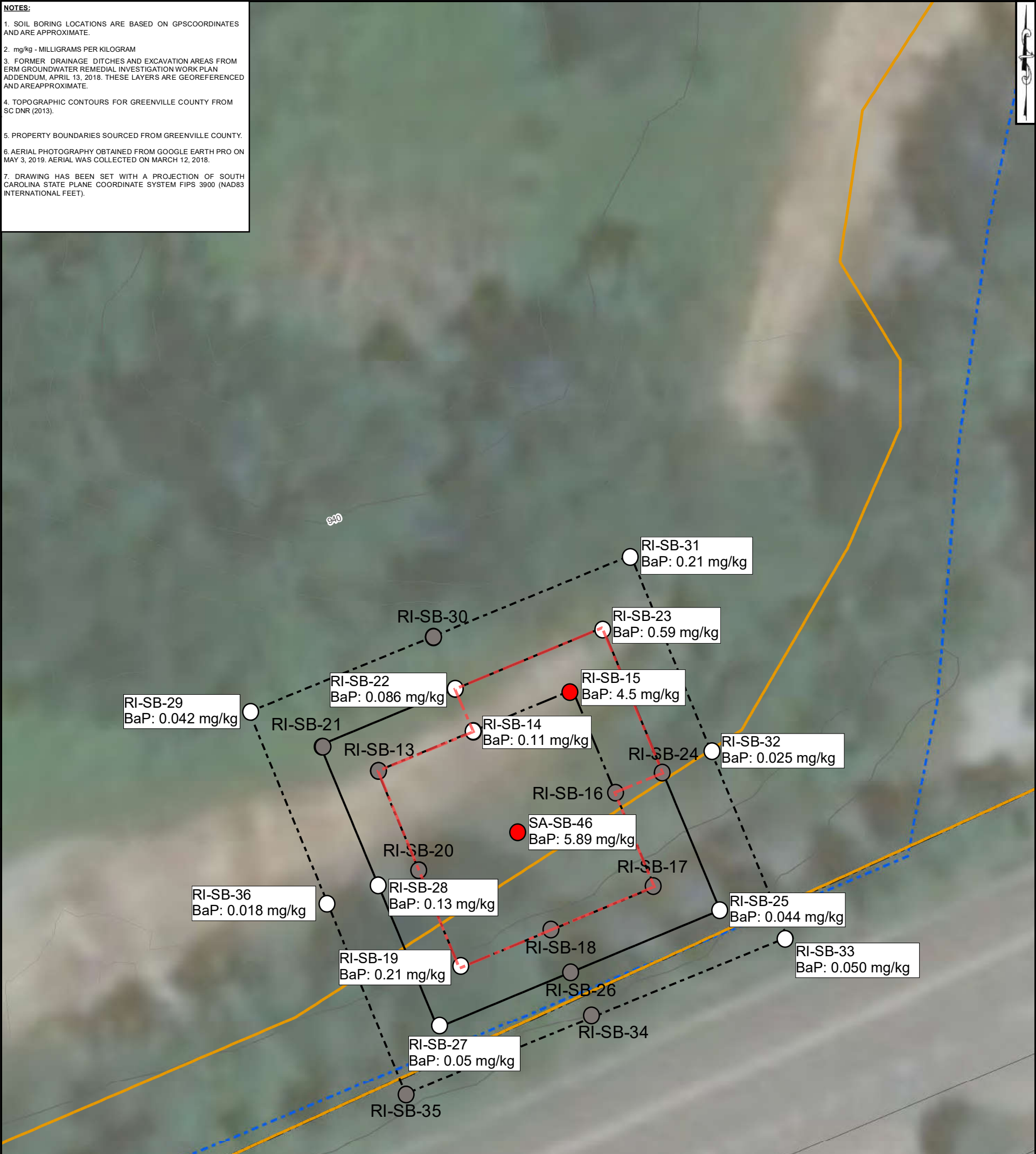
REFERENCES

- SynTerra, 2018. SynTerra Corporation. Quality Assurance Project Plan (QAPP): Former Bramlette MGP Site. 2018.
- USEPA, 1989. United States Environmental Protection Agency, Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A). December 1989.
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- USEPA 2018, United States Environmental Protection Agency, Region 4 Human Health Risk Assessment Supplemental Guidance. March 2018. https://www.epa.gov/sites/default/files/2018-03/documents/hhra_regional_supplemental_guidance_report-march-2018_update.pdf
- VURAM 2020, Virginia Department of Environmental Quality. Virginia Unified Risk Assessment Model (VURAM) User Guide. June 2020. <https://www.deq.virginia.gov/home/showpublisheddocument/6949/637514940761700000>

FIGURE

NOTES:

1. SOIL BORING LOCATIONS ARE BASED ON GPS COORDINATES AND ARE APPROXIMATE.
2. mg/kg - MILLIGRAMS PER KILOGRAM
3. FORMER DRAINAGE DITCHES AND EXCAVATION AREAS FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND ARE APPROXIMATE.
4. TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).
5. PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.
6. AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 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 INTERNATIONAL FEET).



LEGEND

- SOIL BORING - BaP DETECTED
- SOIL BORING - BaP MAX CONCENTRATIONS
- SOIL BORING - BaP NOT DETECTED

Notes:
BaP - Benzo(a)pyrene

- - - PROPOSED SOIL REMOVAL EXTENT
- DELINEATION SAMPLING GRID (20 FOOT)
- DELINEATION SAMPLING GRID (30 FOOT)
- DELINEATION SAMPLING GRID (40 FOOT)
- EXCAVATED AREA (2001-2002)
- FORMER AND/OR CURRENT DRAINAGE DITCH (1964)
- PARCEL BOUNDARY
- TOPOGRAPHIC CONTOUR

	DRAWN BY: C. DAVIS DATE: 05/21/2019 REVISED BY: T. PLATING DATE: 03/04/2021 CHECKED BY: K. SIMMS DATE: 03/04/2021 APPROVED BY: T. PLATING DATE: 03/04/2021 PROJECT MANAGER: T. PLATING
	www.synterracorp.com

FIGURE 1
PROPOSED LIMITED SOIL REMOVAL
FORMER BRAMLETTE ROAD MGP SITE
REMEDIAL INVESTIGATION REPORT
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS 2019
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene
Reporting Unit				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
USEPA RSL Industrial Soil				21	2.1	21	210	2.1	21	17
USEPA RSL Residential Soil				1.1	0.11	1.1	11	0.11	1.1	3.8
Sample ID	Start Depth (feet bls)	End Depth (feet bls)	Sample Collection Date	Analytical Results						
SA-SB-01	0.5	1	11/15/2019	0.0362	0.0258	0.0536	0.0164	0.0083 j	0.0247	<0.0053
SA-SB-02	0.5	1	11/12/2019	0.0072 j	0.0077 j	0.0099 j	0.0043 j	0.0014 j	0.0051 j	0.0032 j
SA-SB-03	0.5	1	11/15/2019	0.0341	0.0585	0.079	0.0235	0.0156	0.0516	<0.0051
SA-SB-04	0.5	1	11/13/2019	0.204	0.183	0.283	0.0948	0.0392	0.129	<0.0046
SA-SB-05	0.5	1	11/12/2019	0.0358	0.0399	0.0644	0.0241	0.0119	0.0403	<0.0043
SA-SB-06	0.5	1	11/12/2019	0.0141	0.0111 j	0.0231	0.0082 j	0.0033 j	0.0099 j	<0.111
SA-SB-07	0.5	1	11/13/2019	0.112	0.0851	0.161	0.0601	0.0234	0.0699	<0.0058
SA-SB-08	0.5	1	11/13/2019	0.104	0.0915	0.17	0.0562	0.0275	0.0839	<0.0047
SA-SB-09	0.5	1	11/13/2019	0.618	0.673	0.856	0.369	0.161	0.464	<0.0048 R0
SA-SB-10	0.5	1	11/12/2019	0.0138	0.0096 j	0.0219	0.0059 j	0.0033 j	0.0087 j	<0.149
SA-SB-11	0.5	1	11/12/2019	0.0045 j	0.0041 j	0.0077 j	0.0028 j	<0.0128 R1	0.0032 j	0.0103 j
SA-SB-12	0.5	1	11/14/2019	0.212	0.158	0.227	0.0864	0.0293	0.0899	<0.0046
SA-SB-13	0.5	1	11/13/2019	0.0439	0.0391	0.0716	0.0223	0.01 j	0.0305	<0.0049
SA-SB-14	0.5	1	11/13/2019	0.0823	0.118	0.145	0.0509	0.0299	0.106	<0.0053
SA-SB-15	0.5	1	11/12/2019	0.0625	0.173	0.159	0.0537	0.0696	0.272	<0.0045
SA-SB-16	0.5	1	11/12/2019	0.0865	0.0915	0.13	0.0485	0.0215	0.0635	<0.0056
SA-SB-17	0.5	1	11/12/2019	0.0014 j	0.00089 j	0.0019 j	0.00068 j	<0.0148	<0.0148	0.0042 j
SA-SB-18	0.5	1	11/14/2019	0.109	0.0708	0.134	0.0416	0.0175	0.0467	<0.0051
SA-SB-19	0.5	1	11/14/2019	0.0125 M1 R1	0.0107 j M1 R1	0.021 M1 R1	0.0065 j M1 R1	0.0032 j M1 R1	0.009 j M1 R1	0.0402 j
SA-SB-20	0.5	1	11/13/2019	0.035	0.0333	0.0639	0.0181	0.01 j	0.0298	<0.0057
SA-SB-21	0.5	1	11/13/2019	0.372	0.331	0.429	0.187	0.0503	0.198	<0.0042
SA-SB-22	0.5	1	11/13/2019	0.0576	0.0635	0.112	0.038	0.0198	0.0637	<0.0054
SA-SB-23	0.5	1	11/12/2019	0.0312	0.0435	0.0585	0.0225	0.0091 j	0.0325	0.0106 j
SA-SB-24	0.5	1	11/12/2019	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.004
SA-SB-25	0.5	1	11/14/2019	0.0762	0.0688	0.111	0.0358	0.0182	0.0558	<0.0046
SA-SB-26	0.5	1	11/14/2019	0.0155	0.032	0.0393	0.0135	0.0082 j	0.0236	0.0096 j B
SA-SB-27	0.5	1	11/13/2019	0.0098 S1	0.0091 S1	0.0143 S1	0.0061 S1	0.0023 S1	0.0067 S1	0.0096 S1
SA-SB-28	0.5	1	11/13/2019	0.116	0.102	0.155	0.0599	0.0217	0.0696	<0.0043 R0
SA-SB-29	0.5	1	11/13/2019	0.0997	0.083	0.151	0.0529	0.0219	0.0681	<0.0044
SA-SB-30	0.5	1	11/13/2019	0.0364	0.0428	0.0567	0.0233	0.0087 j	0.0287	0.0032 j
SA-SB-31	0.5	1	11/12/2019	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	<0.107
SA-SB-32	0.5	1	11/14/2019	0.00083 j	0.00072 j	0.0011 j	<0.0113	<0.0113	<0.0113	<0.0042
SA-SB-33	0.5	1	11/14/2019	0.0396 S1	0.0342 S1	0.054 S1	0.0177 S1	0.0077 S1	0.0236 S1	<0.005
SA-SB-34	0.5	1	11/14/2019	0.053	0.0423	0.0841	0.0256	0.012	0.0359	<0.0055
SA-SB-35	0.5	1	11/13/2019	0.114	0.0646	0.157	0.0491	0.0231	0.0621	<0.0051 R0
SA-SB-36	0.5	1	11/13/2019	0.0027 j	0.003 j	0.0043 j	0.0017 j	<0.0115	0.0022 j	0.00093 j
SA-SB-37	0.5	1	11/13/2019	0.0099 j	0.0104 j	0.0141	0.0049 j	0.0021 j	0.0065 j	0.0012 j
SA-SB-38	0.5	1	11/12/2019	0.706	0.675	0.928	0.335	0.151	0.408	<0.0048
SA-SB-39	0.5	1	11/14/2019	0.0027 j	0.0018 j	0.0023 j	0.0012 j	<0.0115	<0.0115	<0.0046

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS 2019
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene
Reporting Unit				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
USEPA RSL Industrial Soil				21	2.1	21	210	2.1	21	17
USEPA RSL Residential Soil				1.1	0.11	1.1	11	0.11	1.1	3.8
Sample ID	Start Depth (feet bls)	End Depth (feet bls)	Sample Collection Date	Analytical Results						
SA-SB-40	0.5	1	11/14/2019	0.376	0.354	0.442	0.184	0.0638	0.182	<0.0063
SA-SB-41	0.5	1	11/14/2019	0.0023 j	0.0023 j	0.0025 j	0.003 j	0.0038 j	0.0033 j	<0.0047
SA-SB-42	0.5	1	11/14/2019	0.0557	0.0524	0.0736	0.0292	0.0104 j	0.0371	0.0017 j B
SA-SB-43	0.5	1	11/13/2019	0.0012 j	0.0012 j	0.0018 j	0.00063 j	<0.012	<0.012	<0.0045
SA-SB-44	0.5	1	11/14/2019	<0.0127	<0.0127	<0.0127	<0.0127	<0.0127	<0.0127	<0.0047
SA-SB-45	0.5	1	11/14/2019	0.0211	0.0243	0.0288	0.014	0.0044 j	0.0141	0.0092 j
SA-SB-46	0.5	1	11/14/2019	6.47 S1	5.89 S1	7.7 S1	2.94 S1	1.08 S1	2.72 S1	0.0749 S1
SA-SB-47	0.5	1	11/14/2019	0.041	0.0442	0.0559	0.0202	0.0083 j	0.0278	<0.0089
SA-SB-01	5.5	6	11/15/2019	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0063
SA-SB-02	5.5	6	11/12/2019	0.0085 j	0.0066 j	0.0182	0.0099 j	0.0015 j	0.0047 j	<0.0068
SA-SB-03	5.5	6	11/15/2019	0.0215	0.0146	0.0279	0.0113 j	0.004 j	0.0114 j	<0.006
SA-SB-04	5.5	6	11/13/2019	NA	NA	NA	NA	NA	NA	<0.0044
SA-SB-05	5.5	6	11/12/2019	0.0542	0.043	0.0771	0.0323	0.0124	0.0377	<0.0045
SA-SB-06	5.5	6	11/12/2019	0.0459	0.0289	0.0567	0.02	0.0077 j	0.0221	<0.0049
SA-SB-07	5.5	6	11/13/2019	0.589	0.469	0.893	0.282	0.121	0.349	<0.0045
SA-SB-08	5.5	6	11/13/2019	0.418	0.311	0.538	0.191	0.0703	0.2	<0.0048
SA-SB-09	5.5	6	11/13/2019	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	0.829
SA-SB-10	5.5	6	11/12/2019	0.0754	0.072	0.133	0.0471	0.0212	0.0572	<0.004
SA-SB-11	5.5	6	11/12/2019	0.0146	0.0109 j	0.0187	0.008 j	0.0027 j	0.0077 j	<0.0044
SA-SB-12	5.5	6	11/14/2019	0.0312	0.0226	0.0424	0.0146	0.0054 j	0.0151	0.0661 j
SA-SB-13	5.5	6	11/13/2019	0.368	0.309	0.451	0.188	0.0691	0.184	<0.0047
SA-SB-14	5.5	6	11/13/2019	0.214	0.193	0.154	0.0754	0.0263 j	0.0711	27.3 M1
SA-SB-15	5.5	6	11/12/2019	0.185	0.144	0.189	0.064	0.0246	0.0743	<0.0047
SA-SB-16	5.5	6	11/12/2019	0.0177	0.0184	0.0243	0.0103 j	0.0038 j	0.0117 j	<0.0038
SA-SB-17	5.5	6	11/12/2019	0.0038 j	0.0043 j	0.008 j	0.0075 j	<0.0112	0.0027 j	0.0032 j
SA-SB-18	5.5	6	11/14/2019	0.268	0.227	0.322	0.13	0.0494	0.154	<0.0048
SA-SB-19	5.5	6	11/14/2019	0.142 S1	0.125 S1	0.185 S1	0.0775 S1	0.0286 S1	0.087 S1	<0.0049
SA-SB-20	5.5	6	11/13/2019	0.0038 j	0.0039 j	0.0051 j	0.0022 j	<0.0115	0.0021 j	0.0019 j
SA-SB-21	5.5	6	11/13/2019	0.0402	0.034	0.0498	0.0218	0.0071 j	0.0226	<0.0033
SA-SB-22	5.5	6	11/13/2019	0.0943	0.0864	0.0969	0.0341	0.0128	0.047	0.0062 j
SA-SB-23	5.5	6	11/12/2019	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0052
SA-SB-24	5.5	6	11/12/2019	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0044
SA-SB-25	5.5	6	11/14/2019	0.136	0.13	0.184	0.0583	0.0311	0.0973	0.0023 j B
SA-SB-26	5.5	6	11/14/2019	0.153	0.118	0.199	0.0694	0.0263	0.0791	<0.0043
SA-SB-27	5.5	6	11/13/2019	0.109 M1	0.104 M1	0.143 M1	0.0737	0.0212 S1	0.0653 S1	<0.0045 M1
SA-SB-28	5.5	6	11/13/2019	0.0512	0.0421	0.058	0.024	0.0078 j	0.0237	0.0047 j
SA-SB-29	5.5	6	11/13/2019	0.0689	0.0809	0.1	0.0456	0.0153	0.0495	0.0073 j
SA-SB-30	5.5	6	11/13/2019	0.004 j	0.0042 j	0.0051 j	0.0022 j	<0.0125	0.0024 j	0.0013 j B
SA-SB-31	5.5	6	11/12/2019	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0048

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS 2019
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Naphthalene
Reporting Unit				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
USEPA RSL Industrial Soil				21	2.1	21	210	2.1	21	17
USEPA RSL Residential Soil				1.1	0.11	1.1	11	0.11	1.1	3.8
Sample ID	Start Depth (feet bls)	End Depth (feet bls)	Sample Collection Date	Analytical Results						
SA-SB-32	5.5	6	11/14/2019	0.0376	0.0361	0.0467	0.017	0.0066 j	0.0196	0.0051 j B
SA-SB-33	5.5	6	11/14/2019	0.143 M1	0.108 M1	0.192 M1	0.0615	0.0271	0.0845	0.116 M1
SA-SB-34	5.5	6	11/14/2019	0.157	0.127	0.212	0.0779	0.0297	0.0828	<0.0045
SA-SB-35	5.5	6	11/13/2019	0.0015 j	0.0014 j	0.0023 j	0.00073 j	<0.0122	<0.0122	<0.004
SA-SB-36	5.5	6	11/13/2019	0.0031 j	0.0028 j	0.0023 j	0.0043 j	0.0053 j	0.0033 j	<0.0045
SA-SB-37	5.5	6	11/13/2019	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0049 R0
SA-SB-38	5.5	6	11/12/2019	0.0011 j	0.0011 j	0.0011 j	0.0014 j	0.002 j	0.0017 j	<0.0053
SA-SB-39	5.5	6	11/14/2019	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	0.0058 j B
SA-SB-40	5.5	6	11/14/2019	0.0068 j	0.0068 j	0.0077 j	0.003 j	<0.0113	0.004 j	0.0034 j B
SA-SB-41	5.5	6	11/14/2019	0.0068 j	0.0052 j	0.0087 j	0.0032 j	<0.0116	0.0038 j	0.0082 j B
SA-SB-42	5.5	6	11/14/2019	<0.0112	<0.0112	<0.0112	<0.0112	<0.0112	<0.0112	0.0061 j B
SA-SB-43	5.5	6	11/13/2019	0.157	0.0586	0.0921	0.0331	0.0089 j	0.021	<0.0047
SA-SB-44	5.5	6	11/14/2019	0.0857	0.0826	0.102	0.0347	0.0126	0.0445	6.19
SA-SB-45	5.5	6	11/14/2019	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.112
SA-SB-46	5.5	6	11/14/2019	27.9 M1 R1	21.5 M1 R1	27.2 M1 R1	12.1 M1 R1	2.17 M1 R1	11 M1 R1	0.0057 j M1 R1
SA-SB-47	5.5	6	11/14/2019	0.0023 j	0.0026 j	0.0046 j	0.0015 j	<0.0123	0.0025 j	0.0028 j

Prepared by: KCS Checked by: JPC

Notes:

- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Industrial limit.

- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Residential limit.

< - Concentration not detected at or greater than the adjusted reporting limit

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.

bls - below land surface

j - Estimated concentration greater than the adjusted method detection limit and less than the adjusted reporting limit.

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

mg/kg - milligrams per kilogram

NA - Not analyzed

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

R1 - Relative percent difference value was outside control limits.

RSL - Regional Screening Level

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

USEPA - United States Environmental Protection Agency

RSL - Regional Screening Level

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS FOR PROPOSED LIMITED SOIL REMOVAL DELINEATION
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				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	
Reporting Unit				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
EPA RSL Industrial Soil				73	3,000	45,000	NE	230,000	21	2.1	21	NE	210	2,100	
EPA RSL Residential Soil				18	240	3,600	NE	18,000	1.1	0.11	1.1	NE	11	110	
Sample ID	Start Depth	End Depth	Sample Collection Date	Analytical Results											
SA-SB-46	0.5	1	11/14/2019	1.02 S1	1.25 S1	1.28 S1	1.45 S1	3.25 S1	6.47 S1	5.89 S1	--	7.7 S1	3 S1	2.94 S1	6.23 S1
RI-SB-13	0.5	1	3/15/2021	< 0.381	< 0.381	< 0.381	< 0.381	< 0.381	< 0.381	< 0.012 a.	< 0.381	< 0.381	< 0.381	< 0.381	< 0.381
RI-SB-14	0.5	1	3/15/2021	< 0.368	< 0.368	< 0.368	< 0.368	< 0.368	< 0.368	0.11 a.	< 0.368	< 0.368	< 0.368	< 0.368	< 0.368
RI-SB-15	0.5	1	3/15/2021	0.458	0.52	0.214 j	0.169 j	0.376	0.801	4.5	a.	0.944	0.436	0.398	0.822
RI-SB-16	0.5	1	3/15/2021	< 0.389	< 0.389	< 0.389	< 0.389	< 0.389	< 0.389	< 0.011 a.	< 0.389	< 0.389	< 0.389	< 0.389	< 0.389
RI-SB-17	0.5	1	3/15/2021	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.012 a.	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414
RI-SB-18	0.5	1	3/15/2021	< 0.411	< 0.411	< 0.411	< 0.411	< 0.411	< 0.411	< 0.012 a.	< 0.411	< 0.411	< 0.411	< 0.411	< 0.411
RI-SB-19	0.5	1	3/15/2021	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429	0.21	a.	< 0.429	< 0.429	< 0.429	< 0.429
RI-SB-20	0.5	1	3/15/2021	< 0.383	< 0.383	< 0.383	< 0.383	< 0.383	< 0.383	< 0.011 a.	< 0.383	< 0.383	< 0.383	< 0.383	< 0.383
RI-SB-21	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	< 0.012 --	NS	NS	NS	NS	NS
RI-SB-22	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.086 --	NS	NS	NS	NS	NS
RI-SB-23	0.5	1	3/15/2021	< 0.385	< 0.385	< 0.385	< 0.385	< 0.385	< 0.385	0.59	a.	< 0.385	< 0.385 ,v1	< 0.385	< 0.385
RI-SB-24	0.5	1	3/15/2021	< 0.388	< 0.388	< 0.388	< 0.388	< 0.388	< 0.388	< 0.011 a.	< 0.388	< 0.388 ,v1	< 0.388	< 0.388	< 0.388
RI-SB-25	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.044 --	NS	NS	NS	NS	NS
RI-SB-26	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	< 0.014 --	NS	NS	NS	NS	NS
RI-SB-27	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.05 --	NS	NS	NS	NS	NS
RI-SB-28	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.13	--	NS	NS	NS	NS
RI-SB-29	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.042 --	NS	NS	NS	NS	NS
RI-SB-30	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	< 0.013 --	NS	NS	NS	NS	NS
RI-SB-31	0.5	1	3/17/2021	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	0.21	a.	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0
RI-SB-32	0.5	1	3/17/2021	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	0.025 a.	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0
RI-SB-33	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.05 --	NS	NS	NS	NS	NS
RI-SB-34	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	< 0.015 --	NS	NS	NS	NS	NS
RI-SB-35	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	< 0.013 --	NS	NS	NS	NS	NS
RI-SB-36	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	0.018 --	NS	NS	NS	NS	NS
SA-SB-46	5.5	6	11/14/2019	1.17 M1 R1	1.45 M1 R1	1.15 M1	4.38 M1 R1	21.1 M1 R1	27.9 M1 R1	21.5 M1 R1	--	27.2 M1 R1	12.3 M1 R1	12.1 M1 R1	24 M1 R1
RI-SB-13	5.5	6	3/15/2021	< 0.557	< 0.557	< 0.557	< 0.557	< 0.557	0.291 j	0.254 j	--	0.33 j	< 0.557	< 0.557	0.271 j
RI-SB-14	5.5	6	3/15/2021	< 0.493	< 0.493	< 0.493	< 0.493	< 0.493	0.269 j	0.231 j	--	0.333 j	< 0.493	< 0.493	0.255 j
RI-SB-15	5.5	6	3/15/2021	< 0.517	< 0.517	0.269 j	0.185 j	0.716	1.64	1.44	--	2.02	0.975	0.791	1.53
RI-SB-16	5.5	6	3/15/2021	1.49	0.695	7.71 E	< 0.516	17.3	23.8	15.9	--	21.3	9.63	8.16	23
RI-SB-17	5.5	6	3/15/2021	< 0.423	< 0.423	< 0.423	< 0.423	< 0.423	< 0.423	< 0.423 --	< 0.423	< 0.423	< 0.423	< 0.423	< 0.423
RI-SB-18	5.5	6	3/15/2021	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429 --	< 0.429	< 0.429	< 0.429	< 0.429	< 0.429
RI-SB-19	5.5	6	3/15/2021	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42 --	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
RI-SB-20	5.5	6	3/15/2021	< 0.408	< 0.408	< 0.408	< 0.408	< 0.408	< 0.408	< 0.408 --	< 0.408	< 0.408	< 0.408	< 0.408	< 0.408
RI-SB-23	5.5	6	3/15/2021	< 0.416	< 0.416	< 0.416	< 0.416	< 0.416	< 0.416	< 0.416 --	< 0.416	< 0.416 ,v1	< 0.416	< 0.416	< 0.416
RI-SB-24	5.5	6	3/15/2021	< 0.492	< 0.492	< 0.492	0.194 j	< 0.492	0.172 j	0.184 j	--	0.306 j	0.224 j,v1	< 0.492	0.199 j
RI-SB-31	5.5	6	3/17/2021	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	0.132 H3,R0	--	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0
RI-SB-32	5.5	6	3/17/2021	0.304 j,H3,R0	0.319 j,H3,R0	0.219 j,H3,R0	< 0.402 ,H3,R0	< 0.402 ,H3,R0	0.525 H3,R0	0.0117 j,H3,R0	--	0.999 H3,R0	0.782 H3,R0	0.4 j,H3,R0	0.413 H3,R0

Notes:

- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Industrial limit.
- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Residential limit.
- a. - Analytical result from 6/30/2021 sampling event.
- < - Concentration not detected at or greater than the adjusted reporting limit.
- - No value or indicator
- C8 - Result may be biased high due to carryover from previously analyzed sample.
- E - Analyte concentration exceeded the calibration range. The reported result is estimated.
- H3 - Sample was received or analysis requested beyond the recognized method holding time.
- j - Estimated concentration greater than the adjusted method detection limit and less than the adjusted reporting limit.
- M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
- mg/kg - milligrams per kilogram
- 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.
- NS - not sampled
- R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
- R1 - Relative percent difference (RPD) value was outside control limits.
- RS - The RPD value in one of the constituent analytes was outside the control limits.
- RSL - Regional Screening Level
- S1 - Data review findings indicate result may be biased: however, data is usable.
- USEPA - United States Environmental Protection Agency
- v1 - The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS FOR PROPOSED LIMITED SOIL REMOVAL DELINEATION
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Ethylbenzene	m,p-Xylenes	Toluene	Xylene (Total)	Xylene, o-	Benzene	
Reporting Unit				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	
EPA RSL Industrial Soil				2.1	30,000	30,000	21	17	NE	23,000	25	2,400	47,000	2,500	2,800	5.1	
EPA RSL Residential Soil				0.11	2,400	2,400	1.1	3.8	NE	1,800	5.8	560	4,900	580	650	1.2	
Sample ID	Start Depth	End Depth	Sample Collection Date	Analytical Results													
SA-SB-46	0.5	1	11/14/2019	1.08 S1	--	11 S1	1.86	2.72 S1	0.0749 S1	9.41 S1	9.67 S1	< 0.0062	NA	< 0.0062	< 0.0123	< 0.0062	< 0.0062
RI-SB-13	0.5	1	3/15/2021	< 0.012	a.	< 0.381	< 0.381	< 0.381	< 0.0063	< 0.381	< 0.381	< 0.0063	< 0.0125	< 0.0063	< 0.0125	< 0.0063	< 0.0063
RI-SB-14	0.5	1	3/15/2021	0.027	a.	< 0.368	< 0.368	< 0.368	0.0297	< 0.368	< 0.368	< 0.0070	0.0205	0.0128	0.0325	0.012	< 0.0070
RI-SB-15	0.5	1	3/15/2021	0.64	a.	1.37	0.289 j	0.37 j	0.372	1.47	1.4	0.0234	0.0498	0.0646	0.0704	0.0206	0.0418
RI-SB-16	0.5	1	3/15/2021	< 0.011	a.	< 0.389	< 0.389	< 0.389	0.0078	< 0.389	< 0.389	< 0.0062	0.0105 j	0.0097	0.0105 j	< 0.0062	< 0.0062
RI-SB-17	0.5	1	3/15/2021	< 0.012	a.	< 0.414	< 0.414	< 0.414	0.0080 j,C8	< 0.414	< 0.414	< 0.0087	0.0114 j	0.0127	0.0114 j	< 0.0087	< 0.0087
RI-SB-18	0.5	1	3/15/2021	< 0.012	a.	< 0.411	< 0.411	< 0.411	< 0.0074	< 0.411	< 0.411	< 0.0074	< 0.0148	< 0.0074	< 0.0148	< 0.0074	< 0.0074
RI-SB-19	0.5	1	3/15/2021	0.032	a.	< 0.429	< 0.429	< 0.429	0.0064 j	< 0.429	< 0.429	< 0.0073	< 0.0146	0.0057 j	< 0.0146	< 0.0073	< 0.0073
RI-SB-20	0.5	1	3/15/2021	< 0.011	a.	< 0.383	< 0.383	< 0.383	< 0.0066	< 0.383	< 0.383	< 0.0066	< 0.0131	0.0141	< 0.0131	< 0.0066	< 0.0066
RI-SB-21	0.5	1	6/30/2021	< 0.012	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-22	0.5	1	6/30/2021	0.015	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-23	0.5	1	3/15/2021	0.08	a.	< 0.385	< 0.385	< 0.385	< 0.0071	< 0.385	< 0.385	< 0.0071	< 0.0141	< 0.0071	< 0.0141	< 0.0071	< 0.0071
RI-SB-24	0.5	1	3/15/2021	< 0.011	a.	< 0.388	< 0.388	< 0.388	0.0077	< 0.388	< 0.388	< 0.0071	< 0.0141	0.0046 j	< 0.0141	< 0.0071	< 0.0071
RI-SB-25	0.5	1	6/30/2021	< 0.015	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-26	0.5	1	6/30/2021	< 0.014	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-27	0.5	1	6/30/2021	< 0.012	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-28	0.5	1	6/30/2021	0.026	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-29	0.5	1	6/30/2021	< 0.012	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-30	0.5	1	6/30/2021	< 0.013	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-31	0.5	1	3/17/2021	0.034	a.	< 0.382 ,H3,R0	< 0.382 ,H3,R0	< 0.382 ,H3,R0	0.0149 H3,R0	0.177 j,H3,R0	< 0.382 ,H3,R0	< 0.0057 ,H3,R0	< 0.0114 ,H3,R0	0.0086 H3,R0	< 0.0114	< 0.0057 ,H3,R0	< 0.0057 ,H3,R0
RI-SB-32	0.5	1	3/17/2021	< 0.012	a.	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	0.0083 H3,R0	< 0.391 ,H3,R0	< 0.391 ,H3,R0	< 0.0058 ,H3,R0	0.0068 j,H3,R0	0.0046 j,H3,R0	0.0101 j	0.0033 j,H3,R0	< 0.0058 ,H3,R0
RI-SB-33	0.5	1	6/30/2021	< 0.012	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-34	0.5	1	6/30/2021	< 0.015	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-35	0.5	1	6/30/2021	< 0.013	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-36	0.5	1	6/30/2021	< 0.011	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SA-SB-46	5.5	6	11/14/2019	2.17 M1 R1	--	63.3 M1 R1	8.84 M1	11 M1 R1	0.0057 j M1 R1	77.7 M1 R1	50.3 M1 R1	< 0.0061 R1	NA	< 0.0061 R1	< 0.0122 RS	< 0.0061 R1	< 0.0061 R1
RI-SB-13	5.5	6	3/15/2021	< 0.557	--	0.574	< 0.557	< 0.557	0.315	0.219 j	0.556 j	0.0406	0.0906	0.0325	0.153	0.0623	< 0.0193
RI-SB-14	5.5	6	3/15/2021	< 0.493	--	0.598	< 0.493	< 0.493	0.203	0.406 j	0.505	0.0328	0.0437	0.02	0.0741	0.0304	< 0.0128
RI-SB-15	5.5	6	3/15/2021	< 0.517	--	3.92	0.329 j	0.8	0.06	2.73	3.54	< 0.01	0.0157 j	0.0051 j	0.0157 j	< 0.01	< 0.01
RI-SB-16	5.5	6	3/15/2021	2.92	--	58.5	10.2 E	9.2	1.41	55.4	48.1	0.0108	0.0695	0.0172	0.131	0.0611	< 0.0107
RI-SB-17	5.5	6	3/15/2021	< 0.423	--	< 0.423	< 0.423	< 0.423	< 0.0064	< 0.423	< 0.423	< 0.0064	< 0.0129	0.0050 j	< 0.0129	< 0.0064	< 0.0064
RI-SB-18	5.5	6	3/15/2021	< 0.429	--	< 0.429	< 0.429	< 0.429	< 0.0091	< 0.429	< 0.429	< 0.0091	< 0.0183	< 0.0091	< 0.0183	< 0.0091	< 0.0091
RI-SB-19	5.5	6	3/15/2021	< 0.42	--	< 0.42	< 0.42	< 0.42	< 0.0169	< 0.42	< 0.42	0.0092 j	0.0659	< 0.0169	0.0899	0.024	< 0.0169
RI-SB-20	5.5	6	3/15/2021	< 0.408	--	< 0.408	< 0.408	< 0.408	< 0.0063	< 0.408	< 0.408	< 0.0063	< 0.0126	0.0050 j	< 0.0126	< 0.0063	< 0.0063
RI-SB-23	5.5	6	3/15/2021	< 0.416	--	< 0.416	< 0.416	< 0.416	0.021	< 0.416	< 0.416	0.0054 j	< 0.0176	0.0081 j	< 0.0176	< 0.0088	< 0.0088
RI-SB-24	5.5	6	3/15/2021	< 0.492	--	0.267 j	< 0.492	0.209 j	1.32	< 0.492	0.261 j	0.019	0.0942	0.0241	0.174	0.0801	0.0057 j
RI-SB-31	5.5	6	3/17/2021	< 0.445 ,H3,R0	--	< 0.445 ,H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	0.959 H3,R0	< 0.445 ,H3,R0	< 0.445 ,H3,R0	0.103 H3,R0	0.396 H3,R0	0.214 H3,R0	0.632	0.237 H3,R0	0.0311 H3,R0
RI-SB-32	5.5	6	3/17/2021	< 0.402 ,H3,R0	--	0.225 j,H3,R0	0.169 j,H3,R0	0.717 H3,R0	0.0183 H3,R0	0.398 j,H3,R0	0.294 j,H3,R0	0.0057 j,H3,R0	0.0109 j,H3,R0	0.0051 j,H3,R0	0.0224	0.0115 H3,R0	< 0.0058 ,H3,R0

Notes:
 - Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Industrial limit.
 - Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Residential limit.
a. - Analytical result from 6/30/2021 sampling event.
< - Concentration not detected at or greater than the adjusted reporting limit.
-- - No value or indicator
C8 - Result may be biased high due to carryover from previously analyzed sample.
E - Analyte concentration exceeded the calibration range. The reported result is estimated.
H3 - Sample was received or analysis requested beyond the recognized method holding time.
j - Estimated concentration greater than the adjusted method detection limit and less than the adjusted reporting limit.
M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
mg/kg - milligrams per kilogram
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.
NS - not sampled
R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
R1 - Relative percent difference (RPD) value was outside control limits.
RS - The RPD value in one of the constituent analytes was outside the control limits.
RSL - Regional Screening Level
S1 - Data review findings indicate result may be biased: however, data is usable.
USEPA - United States Environmental Protection Agency
v1 - The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

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FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Analytical Parameter				p-I sopropyltoluene	Styrene	1,2,4-Trimethylbenzene	1,4-Dichlorobenzene	2-Butanone (MEK)	Acetone	Chlorobenzene	Dibenzofuran	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene
Reporting Unit				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EPA RSL Industrial Soil				NE	35,000	1,800	11	190,000	670,000	1,300	1,000	9,900	24,000	1500
EPA RSL Residential Soil				NE	6,000	300	2.6	27,000	61,000	280	73	1,900	3,800	270
Sample ID	Start Depth	End Depth	Sample Collection Date	Analytical Results										
SA-SB-46	0.5	1	11/14/2019	< 0.0062	< 0.0062	< 0.0062	< 0.0062	< 0.123	< 0.123	< 0.0062	< 3.83	< 0.0062	< 0.0062	< 0.0062
RI-SB-13	0.5	1	3/15/2021	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.125	< 0.125	< 0.0063	< 0.381	< 0.0063	< 0.0063	< 0.0063
RI-SB-14	0.5	1	3/15/2021	< 0.0070	< 0.0070	0.011	< 0.0070	< 0.139	< 0.139	< 0.0070	< 0.368	< 0.0070	< 0.0070	< 0.0070
RI-SB-15	0.5	1	3/15/2021	0.0096	0.0038 j	0.0192	0.0096	< 0.125	< 0.125	0.007	0.26 j	0.0057 j	< 0.0063	0.0068
RI-SB-16	0.5	1	3/15/2021	< 0.0062	< 0.0062	0.0034 j	< 0.0062	< 0.124	< 0.124	< 0.0062	< 0.389	< 0.0062	< 0.0062	< 0.0062
RI-SB-17	0.5	1	3/15/2021	< 0.0087	< 0.0087	< 0.0087	< 0.0087	< 0.174	< 0.174	< 0.0087	< 0.414	< 0.0087	< 0.0087	< 0.0087
RI-SB-18	0.5	1	3/15/2021	< 0.0074	< 0.0074	< 0.0074	< 0.0074	< 0.148	< 0.148	< 0.0074	< 0.411	< 0.0074	< 0.0074	< 0.0074
RI-SB-19	0.5	1	3/15/2021	< 0.0073	< 0.0073	< 0.0073	< 0.0073	0.0476 j	0.0973 j	< 0.0073	< 0.429	< 0.0073	< 0.0073	< 0.0073
RI-SB-20	0.5	1	3/15/2021	< 0.0066	< 0.0066	< 0.0066	< 0.0066	< 0.131	< 0.131	< 0.0066	< 0.383	< 0.0066	< 0.0066	< 0.0066
RI-SB-21	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-22	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-23	0.5	1	3/15/2021	< 0.0071	< 0.0071	< 0.0071	< 0.0071	< 0.141	< 0.141	< 0.0071	< 0.385	< 0.0071	< 0.0071	< 0.0071
RI-SB-24	0.5	1	3/15/2021	< 0.0071	< 0.0071	< 0.0071	< 0.0071	< 0.141	< 0.141	< 0.0071	< 0.388	< 0.0071	< 0.0071	< 0.0071
RI-SB-25	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-26	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-27	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-28	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-29	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-30	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-31	0.5	1	3/17/2021	0.0071 H3,R0	0.192 H3,R0	< 0.0057 ,H3,R0	< 0.0057 ,H3,R0	< 0.114 ,H3,R0	0.0612 j,H3,R0	< 0.0057 ,H3,R0	< 0.382 ,H3,R0	< 0.0057 ,H3,R0	< 0.0057 ,H3,R0	< 0.0057 ,H3,R0
RI-SB-32	0.5	1	3/17/2021	0.0252 H3,R0	< 0.0058 ,H3,R0	0.0118 H3,R0	< 0.0058 ,H3,R0	< 0.116 ,H3,R0	< 0.116 ,H3,R0	< 0.0058 ,H3,R0	< 0.391 ,H3,R0	< 0.0058 ,H3,R0	< 0.0058 ,H3,R0	< 0.0058 ,H3,R0
RI-SB-33	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-34	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-35	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RI-SB-36	0.5	1	6/30/2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SA-SB-46	5.5	6	11/14/2019	0.0023 j M1 R1	< 0.0061 M1 R1	< 0.0061 R1	< 0.0061	< 0.122	0.0768 j M1	< 0.0061 R1	< 2.25	< 0.0061 R1	< 0.0061 R1	< 0.0061 R1
RI-SB-13	5.5	6	3/15/2021	0.0541	< 0.0193	0.0667	< 0.0193	0.0975 j	0.139 j	0.0119 j	< 0.557	0.0952	< 0.0193	0.0249
RI-SB-14	5.5	6	3/15/2021	0.0704	< 0.0128	0.0334	0.0065 j	0.0810 j	0.164 j	0.0208	< 0.493	0.0978	< 0.0128	< 0.0128
RI-SB-15	5.5	6	3/15/2021	0.0343	< 0.01	0.013	< 0.01	< 0.199	< 0.199	0.0068 j	< 0.517	0.0206	< 0.01	< 0.01
RI-SB-16	5.5	6	3/15/2021	0.0569	0.0058 j	0.107	0.0122	0.0746 j	0.0835 j	0.0402	4.16	0.173	< 0.0107	0.043
RI-SB-17	5.5	6	3/15/2021	< 0.0064	< 0.0064	< 0.0064	< 0.0064	< 0.129	< 0.129	< 0.0064	< 0.423	< 0.0064	< 0.0064	< 0.0064
RI-SB-18	5.5	6	3/15/2021	< 0.0091	< 0.0091	< 0.0091	< 0.0091	< 0.183	< 0.183	< 0.0091	< 0.429	< 0.0091	< 0.0091	< 0.0091
RI-SB-19	5.5	6	3/15/2021	< 0.0169	< 0.0169	< 0.0169	< 0.0169	< 0.337	< 0.337	< 0.0169	< 0.42	< 0.0169	< 0.0169	< 0.0169
RI-SB-20	5.5	6	3/15/2021	< 0.0063	< 0.0063	< 0.0063	< 0.0063	< 0.126	< 0.126	< 0.0063	< 0.408	< 0.0063	< 0.0063	< 0.0063
RI-SB-23	5.5	6	3/15/2021	< 0.0088	< 0.0088	< 0.0088	< 0.0088	< 0.176	< 0.176	< 0.0088	< 0.416	< 0.0088	< 0.0088	< 0.0088
RI-SB-24	5.5	6	3/15/2021	< 0.0111	< 0.0111	0.0693	< 0.0111	0.117 j	0.273	0.0172	< 0.492	0.254	0.0161	0.0299
RI-SB-31	5.5	6	3/17/2021	0.0981 H3,R0	< 0.0094 ,H3,R0	0.207 H3,R0	0.0060 j,H3,R0	0.0640 j,H3,R0	0.185 j,H3,R0	0.0300 H3,R0	< 0.445 ,H3,R0	0.193 H3,R0	0.0315 H3,R0	0.0827 H3,R0
RI-SB-32	5.5	6	3/17/2021	0.0321 H3,R0	< 0.0058 ,H3,R0	0.0224 H3,R0	< 0.0058 ,H3,R0	< 0.116 ,H3,R0	0.0625 j,H3,R0	< 0.0058 ,H3,R0	< 0.402 ,H3,R0	< 0.0058 ,H3,R0	0.178 H3,R0	< 0.0058 ,H3,R0

Prepared by: KCS Checked by: JPC

Notes:

- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Industrial limit.
- Bold highlighted concentrations indicate that the compound was detected at a concentration greater than the USEPA Regional Screening Level Residential limit.
- a. - Analytical result from 6/30/2021 sampling event.
- < - Concentration not detected at or greater than the adjusted reporting limit.
- - No value or indicator
- C8 - Result may be biased high due to carryover from previously analyzed sample.
- E - Analyte concentration exceeded the calibration range. The reported result is estimated.
- H3 - Sample was received or analysis requested beyond the recognized method holding time.
- j - Estimated concentration greater than the adjusted method detection limit and less than the adjusted reporting limit.
- M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.
- mg/kg - milligrams per kilogram
- 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.
- NS - not sampled
- R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
- R1 - Relative percent difference (RPD) value was outside control limits.
- RS - The RPD value in one of the constituent analytes was outside the control limits.
- RSL - Regional Screening Level
- S1 - Data review findings indicate result may be biased: however, data is usable.
- USEPA - United States Environmental Protection Agency
- v1 - The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

ATTACHMENT 1

SURFACE SOIL 2019 PROUCL OUTPUT

UCL Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.15/27/2020 10:56:33 AM
From File	Soil_Data_risk_assessment_d.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-Trichlorobenzene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	29
		Number of Missing Observations	3
Number of Detects	1	Number of Non-Detects	43
Number of Distinct Detects	1	Number of Distinct Non-Detects	28

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2,4-Trichlorobenzene was not processed!

1,2,4-Trimethylbenzene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	28

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2,4-Trimethylbenzene was not processed!

1,3,5-Trimethylbenzene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	28

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,3,5-Trimethylbenzene was not processed!

1-Methylnaphthalene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	42
Number of Detects	38	Number of Non-Detects	9
Number of Distinct Detects	35	Number of Distinct Non-Detects	8
Minimum Detect	1.1	Minimum Non-Detect	11
Maximum Detect	1020	Maximum Non-Detect	12.7
Variance Detects	26584	Percent Non-Detects	19.15%

Mean Detects	51.97	SD Detects	163
Median Detects	20	CV Detects	3.138
Skewness Detects	5.96	Kurtosis Detects	36.25
Mean of Logged Detects	2.783	SD of Logged Detects	1.434

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.274
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.4
5% Lilliefors Critical Value	0.142

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	42.8	KM Standard Error of Mean	21.57
KM SD	145.9	95% KM (BCA) UCL	86.12
95% KM (t) UCL	79	95% KM (Percentile Bootstrap) UCL	83.94
95% KM (z) UCL	78.27	95% KM Bootstrap t UCL	231.1
90% KM Chebyshev UCL	107.5	95% KM Chebyshev UCL	136.8
97.5% KM Chebyshev UCL	177.5	99% KM Chebyshev UCL	257.4

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.069
5% A-D Critical Value	0.809
K-S Test Statistic	0.191
5% K-S Critical Value	0.151

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.538	k star (bias corrected MLE)	0.513
Theta hat (MLE)	96.61	Theta star (bias corrected MLE)	101.3
nu hat (MLE)	40.88	nu star (bias corrected)	38.99

Mean (detects) 51.97

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	42.02
Maximum	1020	Median	13.2
SD	147.7	CV	3.515
k hat (MLE)	0.292	k star (bias corrected MLE)	0.288
Theta hat (MLE)	143.8	Theta star (bias corrected MLE)	146
nu hat (MLE)	27.47	nu star (bias corrected)	27.05
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (27.05, α)	16.19	Adjusted Chi Square Value (27.05, β)	15.92
95% Gamma Approximate UCL (use when $n \geq 50$)	70.2	95% Gamma Adjusted UCL (use when $n < 50$)	71.38

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	42.8	SD (KM)	145.9
Variance (KM)	21284	SE of Mean (KM)	21.57
k hat (KM)	0.0861	k star (KM)	0.0948
nu hat (KM)	8.09	nu star (KM)	8.907
theta hat (KM)	497.3	theta star (KM)	451.7
80% gamma percentile (KM)	27.39	90% gamma percentile (KM)	111.3
95% gamma percentile (KM)	249	99% gamma percentile (KM)	698.3

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (8.91, α)	3.271	Adjusted Chi Square Value (8.91, β)	3.163
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	116.5	95% Gamma Adjusted KM-UCL (use when $n < 50$)	120.5

95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.952
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.112
5% Lilliefors Critical Value	0.142

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	42.72	Mean in Log Scale	2.495
SD in Original Scale	147.5	SD in Log Scale	1.421
95% t UCL (assumes normality of ROS data)	78.83	95% Percentile Bootstrap UCL	83.78
95% BCA Bootstrap UCL	125.3	95% Bootstrap t UCL	227.7
95% H-UCL (Log ROS)	60.05		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.466	KM Geo Mean	11.77
KM SD (logged)	1.47	95% Critical H Value (KM-Log)	2.884
KM Standard Error of Mean (logged)	0.227	95% H-UCL (KM -Log)	64.83
KM SD (logged)	1.47	95% Critical H Value (KM-Log)	2.884
KM Standard Error of Mean (logged)	0.227		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	43.14
SD in Original Scale	147.4
95% t UCL (Assumes normality)	79.23

DL/2 Log-Transformed

Mean in Log Scale	2.589
SD in Log Scale	1.348
95% H-Stat UCL	56.81

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 64.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-Butanone (MEK)

General Statistics

Total Number of Observations	44	Number of Distinct Observations	40
		Number of Missing Observations	3
Number of Detects	1	Number of Non-Detects	43
Number of Distinct Detects	1	Number of Distinct Non-Detects	39

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 2-Butanone (MEK) was not processed!

2-Hexanone

General Statistics

Total Number of Observations	44	Number of Distinct Observations	44
		Number of Missing Observations	3
Number of Detects	6	Number of Non-Detects	38
Number of Distinct Detects	6	Number of Distinct Non-Detects	38
Minimum Detect	4.6	Minimum Non-Detect	39.2

Maximum Detect	82.1	Maximum Non-Detect	1530
Variance Detects	1065	Percent Non-Detects	86.36%
Mean Detects	45.67	SD Detects	32.64
Median Detects	52.55	CV Detects	0.715
Skewness Detects	-0.305	Kurtosis Detects	-2.201
Mean of Logged Detects	3.414	SD of Logged Detects	1.172

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.893
5% Shapiro Wilk Critical Value	0.788
Lilliefors Test Statistic	0.246
5% Lilliefors Critical Value	0.325

Shapiro Wilk GOF Test

Detected Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	22.49	KM Standard Error of Mean	8.745
KM SD	20.47	95% KM (BCA) UCL	42.83
95% KM (t) UCL	37.19	95% KM (Percentile Bootstrap) UCL	42.02
95% KM (z) UCL	36.87	95% KM Bootstrap t UCL	55.47
90% KM Chebyshev UCL	48.72	95% KM Chebyshev UCL	60.6
97.5% KM Chebyshev UCL	77.1	99% KM Chebyshev UCL	109.5

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.481
5% A-D Critical Value	0.71
K-S Test Statistic	0.278
5% K-S Critical Value	0.338

Anderson-Darling GOF Test

Detected data appear Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.37	k star (bias corrected MLE)	0.796
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Theta hat (MLE)	33.34	Theta star (bias corrected MLE)	57.37
nu hat (MLE)	16.44	nu star (bias corrected)	9.553
Mean (detects)	45.67		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.6	Mean	20.72
Maximum	82.1	Median	16.44
SD	15	CV	0.724
k hat (MLE)	3.986	k star (bias corrected MLE)	3.73
Theta hat (MLE)	5.198	Theta star (bias corrected MLE)	5.556
nu hat (MLE)	350.8	nu star (bias corrected)	328.2
Adjusted Level of Significance (β)	0.0445		
Approximate Chi Square Value (328.21, α)	287.2	Adjusted Chi Square Value (328.21, β)	285.9
95% Gamma Approximate UCL (use when $n \geq 50$)	23.68	95% Gamma Adjusted UCL (use when $n < 50$)	23.78

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	22.49	SD (KM)	20.47
Variance (KM)	419	SE of Mean (KM)	8.745
k hat (KM)	1.207	k star (KM)	1.14
nu hat (KM)	106.2	nu star (KM)	100.3
theta hat (KM)	18.63	theta star (KM)	19.73
80% gamma percentile (KM)	35.78	90% gamma percentile (KM)	50.13
95% gamma percentile (KM)	64.34	99% gamma percentile (KM)	97.03

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (100.29, α)	78.18	Adjusted Chi Square Value (100.29, β)	77.52
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95% Gamma Approximate KM-UCL (use when n>=50)	28.84	95% Gamma Adjusted KM-UCL (use when n<50)	29.09
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Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.846
5% Shapiro Wilk Critical Value	0.788
Lilliefors Test Statistic	0.251
5% Lilliefors Critical Value	0.325

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	16.65	Mean in Log Scale	2.616
SD in Original Scale	16.13	SD in Log Scale	0.514
95% t UCL (assumes normality of ROS data)	20.74	95% Percentile Bootstrap UCL	20.63
95% BCA Bootstrap UCL	22.4	95% Bootstrap t UCL	23.05
95% H-UCL (Log ROS)	18.14		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.679	KM Geo Mean	14.57
KM SD (logged)	0.955	95% Critical H Value (KM-Log)	2.318
KM Standard Error of Mean (logged)	0.508	95% H-UCL (KM -Log)	32.23
KM SD (logged)	0.955	95% Critical H Value (KM-Log)	2.318
KM Standard Error of Mean (logged)	0.508		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	116.6
SD in Original Scale	226.8
95% t UCL (Assumes normality)	174.1

DL/2 Log-Transformed

Mean in Log Scale	3.698
SD in Log Scale	1.208
95% H-Stat UCL	135.3

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 37.19

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2-Methylnaphthalene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	43
Number of Detects	39	Number of Non-Detects	8
Number of Distinct Detects	37	Number of Distinct Non-Detects	7
Minimum Detect	0.77	Minimum Non-Detect	11
Maximum Detect	1250	Maximum Non-Detect	12.7
Variance Detects	38989	Percent Non-Detects	17.02%
Mean Detects	65.81	SD Detects	197.5
Median Detects	26	CV Detects	3
Skewness Detects	5.972	Kurtosis Detects	36.62
Mean of Logged Detects	3.03	SD of Logged Detects	1.489

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.287
5% Shapiro Wilk Critical Value	0.939
Lilliefors Test Statistic	0.378
5% Lilliefors Critical Value	0.14

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	55.35	KM Standard Error of Mean	26.46
KM SD	179	95% KM (BCA) UCL	107.8
95% KM (t) UCL	99.76	95% KM (Percentile Bootstrap) UCL	107
95% KM (z) UCL	98.87	95% KM Bootstrap t UCL	267.6
90% KM Chebyshev UCL	134.7	95% KM Chebyshev UCL	170.7
97.5% KM Chebyshev UCL	220.6	99% KM Chebyshev UCL	318.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.792
5% A-D Critical Value	0.809
K-S Test Statistic	0.167
5% K-S Critical Value	0.149

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.542	k star (bias corrected MLE)	0.518
Theta hat (MLE)	121.3	Theta star (bias corrected MLE)	127.1
nu hat (MLE)	42.31	nu star (bias corrected)	40.39
Mean (detects)	65.81		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	54.61
Maximum	1250	Median	19.2
SD	181.2	CV	3.318
k hat (MLE)	0.303	k star (bias corrected MLE)	0.298

Theta hat (MLE)	180.1	Theta star (bias corrected MLE)	183.2
nu hat (MLE)	28.51	nu star (bias corrected)	28.02
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (28.02, α)	16.95	Adjusted Chi Square Value (28.02, β)	16.67
95% Gamma Approximate UCL (use when $n \geq 50$)	90.31	95% Gamma Adjusted UCL (use when $n < 50$)	91.79

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	55.35	SD (KM)	179
Variance (KM)	32058	SE of Mean (KM)	26.46
k hat (KM)	0.0955	k star (KM)	0.104
nu hat (KM)	8.982	nu star (KM)	9.742
theta hat (KM)	579.2	theta star (KM)	534
80% gamma percentile (KM)	40.4	90% gamma percentile (KM)	149.4
95% gamma percentile (KM)	320.5	99% gamma percentile (KM)	863.5

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.74, α)	3.781	Adjusted Chi Square Value (9.74, β)	3.664
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	142.6	95% Gamma Adjusted KM-UCL (use when $n < 50$)	147.2
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.939
Lilliefors Test Statistic	0.13
5% Lilliefors Critical Value	0.14

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	55.3	Mean in Log Scale	2.749
SD in Original Scale	181	SD in Log Scale	1.494
95% t UCL (assumes normality of ROS data)	99.61	95% Percentile Bootstrap UCL	106.4

95% BCA Bootstrap UCL	135.6	95% Bootstrap t UCL	258
95% H-UCL (Log ROS)	90.72		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.714	KM Geo Mean	15.1
KM SD (logged)	1.548	95% Critical H Value (KM-Log)	2.983
KM Standard Error of Mean (logged)	0.238	95% H-UCL (KM -Log)	98.74
KM SD (logged)	1.548	95% Critical H Value (KM-Log)	2.983
KM Standard Error of Mean (logged)	0.238		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	55.61
SD in Original Scale	180.9
95% t UCL (Assumes normality)	99.9

DL/2 Log-Transformed

Mean in Log Scale	2.816
SD in Log Scale	1.436
95% H-Stat UCL	85.44

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL	98.74
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

4-Bromophenylphenyl ether

General Statistics

Total Number of Observations	47	Number of Distinct Observations	35
Number of Detects	1	Number of Non-Detects	46
Number of Distinct Detects	1	Number of Distinct Non-Detects	34

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 4-Bromophenylphenyl ether was not processed!

Acenaphthene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	44
Number of Detects	29	Number of Non-Detects	18
Number of Distinct Detects	28	Number of Distinct Non-Detects	16
Minimum Detect	0.61	Minimum Non-Detect	11
Maximum Detect	1280	Maximum Non-Detect	14.8
Variance Detects	55989	Percent Non-Detects	38.3%
Mean Detects	50.04	SD Detects	236.6
Median Detects	3.8	CV Detects	4.728
Skewness Detects	5.38	Kurtosis Detects	28.96
Mean of Logged Detects	1.513	SD of Logged Detects	1.535

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.208
5% Shapiro Wilk Critical Value	0.926
Lilliefors Test Statistic	0.518
5% Lilliefors Critical Value	0.161

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	32.49	KM Standard Error of Mean	27.32
KM SD	184	95% KM (BCA) UCL	87.38
95% KM (t) UCL	78.34	95% KM (Percentile Bootstrap) UCL	86.59
95% KM (z) UCL	77.42	95% KM Bootstrap t UCL	1090
90% KM Chebyshev UCL	114.4	95% KM Chebyshev UCL	151.6
97.5% KM Chebyshev UCL	203.1	99% KM Chebyshev UCL	304.3

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.458
5% A-D Critical Value	0.861
K-S Test Statistic	0.395
5% K-S Critical Value	0.177

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.289	k star (bias corrected MLE)	0.282
Theta hat (MLE)	173.1	Theta star (bias corrected MLE)	177.4
nu hat (MLE)	16.77	nu star (bias corrected)	16.37
Mean (detects)	50.04		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	30.88
Maximum	1280	Median	0.96
SD	186.2	CV	6.031
k hat (MLE)	0.176	k star (bias corrected MLE)	0.179

Theta hat (MLE)	175.3	Theta star (bias corrected MLE)	172.4
nu hat (MLE)	16.56	nu star (bias corrected)	16.83
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (16.83, α)	8.554	Adjusted Chi Square Value (16.83, β)	8.367
95% Gamma Approximate UCL (use when $n \geq 50$)	60.77	95% Gamma Adjusted UCL (use when $n < 50$)	62.14

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	32.49	SD (KM)	184
Variance (KM)	33856	SE of Mean (KM)	27.32
k hat (KM)	0.0312	k star (KM)	0.0434
nu hat (KM)	2.931	nu star (KM)	4.077
theta hat (KM)	1042	theta star (KM)	749.1
80% gamma percentile (KM)	2.547	90% gamma percentile (KM)	40.38
95% gamma percentile (KM)	162.7	99% gamma percentile (KM)	746

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (4.08, α)	0.752	Adjusted Chi Square Value (4.08, β)	0.71
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	176.1	95% Gamma Adjusted KM-UCL (use when $n < 50$)	186.5
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.863
5% Shapiro Wilk Critical Value	0.926
Lilliefors Test Statistic	0.144
5% Lilliefors Critical Value	0.161

Detected Data appear Approximate Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data Not Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	32.11	Mean in Log Scale	1.37
SD in Original Scale	186	SD in Log Scale	1.222
95% t UCL (assumes normality of ROS data)	77.67	95% Percentile Bootstrap UCL	86.16

95% BCA Bootstrap UCL	113.8	95% Bootstrap t UCL	1425
95% H-UCL (Log ROS)	13.21		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.337	KM Geo Mean	3.807
KM SD (logged)	1.342	95% Critical H Value (KM-Log)	2.723
KM Standard Error of Mean (logged)	0.23	95% H-UCL (KM -Log)	16.05
KM SD (logged)	1.342	95% Critical H Value (KM-Log)	2.723
KM Standard Error of Mean (logged)	0.23		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	33.19
SD in Original Scale	185.9
95% t UCL (Assumes normality)	78.7

DL/2 Log-Transformed

Mean in Log Scale	1.621
SD in Log Scale	1.206
95% H-Stat UCL	16.51

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	151.6
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Acenaphthylene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	46
Number of Detects	38	Number of Non-Detects	9
Number of Distinct Detects	38	Number of Distinct Non-Detects	8
Minimum Detect	0.54	Minimum Non-Detect	11.3
Maximum Detect	1450	Maximum Non-Detect	14.8
Variance Detects	57138	Percent Non-Detects	19.15%
Mean Detects	67.31	SD Detects	239
Median Detects	8.7	CV Detects	3.552
Skewness Detects	5.555	Kurtosis Detects	32.39
Mean of Logged Detects	2.25	SD of Logged Detects	1.792

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.297
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.407
5% Lilliefors Critical Value	0.142

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	55.28	KM Standard Error of Mean	31.57
KM SD	213.5	95% KM (BCA) UCL	116.9
95% KM (t) UCL	108.3	95% KM (Percentile Bootstrap) UCL	114.1
95% KM (z) UCL	107.2	95% KM Bootstrap t UCL	326.4
90% KM Chebyshev UCL	150	95% KM Chebyshev UCL	192.9
97.5% KM Chebyshev UCL	252.4	99% KM Chebyshev UCL	369.4

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.348
5% A-D Critical Value	0.847
K-S Test Statistic	0.286
5% K-S Critical Value	0.155

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.344	k star (bias corrected MLE)	0.335
Theta hat (MLE)	195.5	Theta star (bias corrected MLE)	201.2
nu hat (MLE)	26.16	nu star (bias corrected)	25.43
Mean (detects)	67.31		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	54.42
Maximum	1450	Median	6.5
SD	216	CV	3.97
k hat (MLE)	0.235	k star (bias corrected MLE)	0.234
Theta hat (MLE)	232	Theta star (bias corrected MLE)	232.8
nu hat (MLE)	22.05	nu star (bias corrected)	21.98
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (21.98, α)	12.32	Adjusted Chi Square Value (21.98, β)	12.09
95% Gamma Approximate UCL (use when $n \geq 50$)	97.07	95% Gamma Adjusted UCL (use when $n < 50$)	98.91

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	55.28	SD (KM)	213.5
Variance (KM)	45594	SE of Mean (KM)	31.57
k hat (KM)	0.067	k star (KM)	0.0769
nu hat (KM)	6.3	nu star (KM)	7.231
theta hat (KM)	824.8	theta star (KM)	718.6
80% gamma percentile (KM)	24.33	90% gamma percentile (KM)	127.8

95% gamma percentile (KM)	320.7	99% gamma percentile (KM)	997.3
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Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.23, α)	2.298	Adjusted Chi Square Value (7.23, β)	2.211
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	173.9	95% Gamma Adjusted KM-UCL (use when $n < 50$)	180.8
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.961
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.113
5% Lilliefors Critical Value	0.142

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	55.1	Mean in Log Scale	2.056
SD in Original Scale	215.9	SD in Log Scale	1.662
95% t UCL (assumes normality of ROS data)	108	95% Percentile Bootstrap UCL	115.9
95% BCA Bootstrap UCL	151.7	95% Bootstrap t UCL	325.5
95% H-UCL (Log ROS)	66.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.032	KM Geo Mean	7.629
KM SD (logged)	1.706	95% Critical H Value (KM-Log)	3.19
KM Standard Error of Mean (logged)	0.263	95% H-UCL (KM -Log)	72.87
KM SD (logged)	1.706	95% Critical H Value (KM-Log)	3.19
KM Standard Error of Mean (logged)	0.263		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	55.6
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DL/2 Log-Transformed

Mean in Log Scale	2.168
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SD in Original Scale	215.8	SD in Log Scale	1.617
95% t UCL (Assumes normality)	108.4	95% H-Stat UCL	67.15

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 192.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Acetone

General Statistics

Total Number of Observations	44	Number of Distinct Observations	40
		Number of Missing Observations	3
Number of Detects	11	Number of Non-Detects	33
Number of Distinct Detects	10	Number of Distinct Non-Detects	32
Minimum Detect	11.3	Minimum Non-Detect	78.4
Maximum Detect	168	Maximum Non-Detect	3070
Variance Detects	2084	Percent Non-Detects	75%
Mean Detects	86.28	SD Detects	45.66
Median Detects	81.2	CV Detects	0.529
Skewness Detects	0.00347	Kurtosis Detects	-0.196
Mean of Logged Detects	4.254	SD of Logged Detects	0.782

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.975	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.12	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.251	Detected Data appear Normal at 5% Significance Level	
Detected Data appear Normal at 5% Significance Level			

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	62.9	KM Standard Error of Mean	10.39
KM SD	35.97	95% KM (BCA) UCL	79.3
95% KM (t) UCL	80.37	95% KM (Percentile Bootstrap) UCL	80.73
95% KM (z) UCL	80	95% KM Bootstrap t UCL	81.14
90% KM Chebyshev UCL	94.08	95% KM Chebyshev UCL	108.2
97.5% KM Chebyshev UCL	127.8	99% KM Chebyshev UCL	166.3

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.456	Anderson-Darling GOF Test	
5% A-D Critical Value	0.736	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.181	Kolmogorov-Smirnov GOF	
5% K-S Critical Value	0.258	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.61	k star (bias corrected MLE)	1.959
Theta hat (MLE)	33.06	Theta star (bias corrected MLE)	44.05
nu hat (MLE)	57.42	nu star (bias corrected)	43.09
Mean (detects)	86.28		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	11.3	Mean	59.97
Maximum	168	Median	51.43
SD	27.08	CV	0.452
k hat (MLE)	6.342	k star (bias corrected MLE)	5.924
Theta hat (MLE)	9.457	Theta star (bias corrected MLE)	10.12
nu hat (MLE)	558.1	nu star (bias corrected)	521.3
Adjusted Level of Significance (β)	0.0445		
Approximate Chi Square Value (521.34, α)	469.4	Adjusted Chi Square Value (521.34, β)	467.7
95% Gamma Approximate UCL (use when $n \geq 50$)	66.61	95% Gamma Adjusted UCL (use when $n < 50$)	66.84

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	62.9	SD (KM)	35.97
Variance (KM)	1294	SE of Mean (KM)	10.39
k hat (KM)	3.058	k star (KM)	2.865
nu hat (KM)	269.1	nu star (KM)	252.1
theta hat (KM)	20.57	theta star (KM)	21.96
80% gamma percentile (KM)	90.22	90% gamma percentile (KM)	112.7
95% gamma percentile (KM)	133.8	99% gamma percentile (KM)	179.5

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (252.10, α)	216.3	Adjusted Chi Square Value (252.10, β)	215.2
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	73.3	95% Gamma Adjusted KM-UCL (use when $n < 50$)	73.68

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.852
5% Shapiro Wilk Critical Value	0.85
Lilliefors Test Statistic	0.233
5% Lilliefors Critical Value	0.251

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	53.62	Mean in Log Scale	3.877
SD in Original Scale	29.32	SD in Log Scale	0.444
95% t UCL (assumes normality of ROS data)	61.05	95% Percentile Bootstrap UCL	61.45
95% BCA Bootstrap UCL	62.82	95% Bootstrap t UCL	64.22
95% H-UCL (Log ROS)	60.42		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.913	KM Geo Mean	50.03
KM SD (logged)	0.762	95% Critical H Value (KM-Log)	2.124
KM Standard Error of Mean (logged)	0.27	95% H-UCL (KM -Log)	85.59
KM SD (logged)	0.762	95% Critical H Value (KM-Log)	2.124
KM Standard Error of Mean (logged)	0.27		

DL/2 Statistics**DL/2 Normal**

Mean in Original Scale	237
SD in Original Scale	452.6
95% t UCL (Assumes normality)	351.7

DL/2 Log-Transformed

Mean in Log Scale	4.455
SD in Log Scale	1.182
95% H-Stat UCL	275.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	80.37
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Anthracene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	45
Number of Detects	41	Number of Non-Detects	6
Number of Distinct Detects	41	Number of Distinct Non-Detects	6
Minimum Detect	0.52	Minimum Non-Detect	11.3
Maximum Detect	3250	Maximum Non-Detect	14.8
Variance Detects	254718	Percent Non-Detects	12.77%
Mean Detects	122.3	SD Detects	504.7
Median Detects	22.9	CV Detects	4.126
Skewness Detects	6.249	Kurtosis Detects	39.61
Mean of Logged Detects	3.016	SD of Logged Detects	1.695

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.234
5% Shapiro Wilk Critical Value	0.941
Lilliefors Test Statistic	0.409
5% Lilliefors Critical Value	0.137

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	107.3	KM Standard Error of Mean	69
KM SD	467.3	95% KM (BCA) UCL	250.9
95% KM (t) UCL	223.1	95% KM (Percentile Bootstrap) UCL	241.9
95% KM (z) UCL	220.8	95% KM Bootstrap t UCL	949.3
90% KM Chebyshev UCL	314.3	95% KM Chebyshev UCL	408.1
97.5% KM Chebyshev UCL	538.2	99% KM Chebyshev UCL	793.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.412
5% A-D Critical Value	0.842
K-S Test Statistic	0.248
5% K-S Critical Value	0.148

Detected Data Not Gamma Distributed at 5% Significance Level

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.372	k star (bias corrected MLE)	0.361
Theta hat (MLE)	328.9	Theta star (bias corrected MLE)	338.9
nu hat (MLE)	30.49	nu star (bias corrected)	29.59
Mean (detects)	122.3		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	106.7
Maximum	3250	Median	19.1
SD	472.4	CV	4.428
k hat (MLE)	0.267	k star (bias corrected MLE)	0.265
Theta hat (MLE)	399	Theta star (bias corrected MLE)	403.3
nu hat (MLE)	25.14	nu star (bias corrected)	24.87
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (24.87, α)	14.51	Adjusted Chi Square Value (24.87, β)	14.26
95% Gamma Approximate UCL (use when $n \geq 50$)	182.9	95% Gamma Adjusted UCL (use when $n < 50$)	186.1

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	107.3	SD (KM)	467.3
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Variance (KM)	218323	SE of Mean (KM)	69
k hat (KM)	0.0527	k star (KM)	0.0636
nu hat (KM)	4.957	nu star (KM)	5.974
theta hat (KM)	2035	theta star (KM)	1688
80% gamma percentile (KM)	30.29	90% gamma percentile (KM)	213.3
95% gamma percentile (KM)	608.3	99% gamma percentile (KM)	2111

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (5.97, α)	1.627	Adjusted Chi Square Value (5.97, β)	1.556
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	394.1	95% Gamma Adjusted KM-UCL (use when $n < 50$)	411.9
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.981
5% Shapiro Wilk Critical Value	0.941
Lilliefors Test Statistic	0.0832
5% Lilliefors Critical Value	0.137

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	107.2	Mean in Log Scale	2.797
SD in Original Scale	472.3	SD in Log Scale	1.684
95% t UCL (assumes normality of ROS data)	222.8	95% Percentile Bootstrap UCL	243.1
95% BCA Bootstrap UCL	327.5	95% Bootstrap t UCL	933.7
95% H-UCL (Log ROS)	148.3		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.785	KM Geo Mean	16.2
KM SD (logged)	1.709	95% Critical H Value (KM-Log)	3.194
KM Standard Error of Mean (logged)	0.259	95% H-UCL (KM -Log)	156
KM SD (logged)	1.709	95% Critical H Value (KM-Log)	3.194

KM Standard Error of Mean (logged) 0.259

DL/2 Statistics

DL/2 Normal

Mean in Original Scale 107.5
SD in Original Scale 472.3
95% t UCL (Assumes normality) 223.1

DL/2 Log-Transformed

Mean in Log Scale 2.864
SD in Log Scale 1.631
95% H-Stat UCL 139.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 408.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	28

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Benzene was not processed!

Benzo(a)anthracene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	45
Number of Detects	44	Number of Non-Detects	3
Number of Distinct Detects	43	Number of Distinct Non-Detects	3
Minimum Detect	0.83	Minimum Non-Detect	11.6
Maximum Detect	6470	Maximum Non-Detect	12.7
Variance Detects	946557	Percent Non-Detects	6.383%
Mean Detects	239.5	SD Detects	972.9
Median Detects	40.3	CV Detects	4.062
Skewness Detects	6.395	Kurtosis Detects	41.76
Mean of Logged Detects	3.615	SD of Logged Detects	1.822

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.241
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.403
5% Lilliefors Critical Value	0.132

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	224.5	KM Standard Error of Mean	137.6
KM SD	932.4	95% KM (BCA) UCL	511.5
95% KM (t) UCL	455.5	95% KM (Percentile Bootstrap) UCL	493.6
95% KM (z) UCL	450.8	95% KM Bootstrap t UCL	1650
90% KM Chebyshev UCL	637.2	95% KM Chebyshev UCL	824.2

97.5% KM Chebyshev UCL

1084

99% KM Chebyshev UCL

1593

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic 3.212
5% A-D Critical Value 0.847
K-S Test Statistic 0.268
5% K-S Critical Value 0.144

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE) 0.359
Theta hat (MLE) 666.6
nu hat (MLE) 31.62
Mean (detects) 239.5

k star (bias corrected MLE) 0.35
Theta star (bias corrected MLE) 684.5
nu star (bias corrected) 30.8

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	224.2
Maximum	6470	Median	36.4
SD	942.5	CV	4.203
k hat (MLE)	0.297	k star (bias corrected MLE)	0.293
Theta hat (MLE)	754.1	Theta star (bias corrected MLE)	766.5
nu hat (MLE)	27.95	nu star (bias corrected)	27.5
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (27.50, α)	16.54	Adjusted Chi Square Value (27.50, β)	16.27
95% Gamma Approximate UCL (use when $n \geq 50$)	372.8	95% Gamma Adjusted UCL (use when $n < 50$)	379

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	224.5	SD (KM)	932.4
Variance (KM)	869301	SE of Mean (KM)	137.6
k hat (KM)	0.058	k star (KM)	0.0685
nu hat (KM)	5.451	nu star (KM)	6.436
theta hat (KM)	3872	theta star (KM)	3279
80% gamma percentile (KM)	76.36	90% gamma percentile (KM)	476
95% gamma percentile (KM)	1288	99% gamma percentile (KM)	4273

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.44, α)	1.867	Adjusted Chi Square Value (6.44, β)	1.79
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	774.1	95% Gamma Adjusted KM-UCL (use when $n < 50$)	807.2
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.974
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.121
5% Lilliefors Critical Value	0.132

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level**Lognormal ROS Statistics Using Imputed Non-Detects**

Mean in Original Scale	224.5	Mean in Log Scale	3.472
SD in Original Scale	942.5	SD in Log Scale	1.847
95% t UCL (assumes normality of ROS data)	455.3	95% Percentile Bootstrap UCL	491.2
95% BCA Bootstrap UCL	651.1	95% Bootstrap t UCL	1665
95% H-UCL (Log ROS)	445.1		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.458	KM Geo Mean	31.76
KM SD (logged)	1.856	95% Critical H Value (KM-Log)	3.393

KM Standard Error of Mean (logged)	0.276	95% H-UCL (KM -Log)	450.2
KM SD (logged)	1.856	95% Critical H Value (KM-Log)	3.393
KM Standard Error of Mean (logged)	0.276		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	224.6
SD in Original Scale	942.4
95% t UCL (Assumes normality)	455.4

DL/2 Log-Transformed

Mean in Log Scale	3.5
SD in Log Scale	1.817
95% H-Stat UCL	422.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	824.2
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(a)pyrene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	46
Number of Detects	44	Number of Non-Detects	3
Number of Distinct Detects	43	Number of Distinct Non-Detects	3
Minimum Detect	0.72	Minimum Non-Detect	11.6
Maximum Detect	5890	Maximum Non-Detect	12.7
Variance Detects	786259	Percent Non-Detects	6.383%

Mean Detects	224.1	SD Detects	886.7
Median Detects	43.15	CV Detects	3.957
Skewness Detects	6.354	Kurtosis Detects	41.36
Mean of Logged Detects	3.582	SD of Logged Detects	1.849

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.247
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.405
5% Lilliefors Critical Value	0.132

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	210.2	KM Standard Error of Mean	125.4
KM SD	849.8	95% KM (BCA) UCL	453.8
95% KM (t) UCL	420.7	95% KM (Percentile Bootstrap) UCL	456.4
95% KM (z) UCL	416.4	95% KM Bootstrap t UCL	1395
90% KM Chebyshev UCL	586.3	95% KM Chebyshev UCL	756.7
97.5% KM Chebyshev UCL	993.2	99% KM Chebyshev UCL	1458

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.073
5% A-D Critical Value	0.846
K-S Test Statistic	0.236
5% K-S Critical Value	0.144

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.365	k star (bias corrected MLE)	0.355
Theta hat (MLE)	614.2	Theta star (bias corrected MLE)	631
nu hat (MLE)	32.11	nu star (bias corrected)	31.25

Mean (detects) 224.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	209.8
Maximum	5890	Median	42.3
SD	859.1	CV	4.095
k hat (MLE)	0.301	k star (bias corrected MLE)	0.296
Theta hat (MLE)	696.4	Theta star (bias corrected MLE)	708.2
nu hat (MLE)	28.32	nu star (bias corrected)	27.85
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (27.85, α)	16.81	Adjusted Chi Square Value (27.85, β)	16.54
95% Gamma Approximate UCL (use when $n \geq 50$)	347.6	95% Gamma Adjusted UCL (use when $n < 50$)	353.3

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	210.2	SD (KM)	849.8
Variance (KM)	722198	SE of Mean (KM)	125.4
k hat (KM)	0.0612	k star (KM)	0.0714
nu hat (KM)	5.749	nu star (KM)	6.715
theta hat (KM)	3436	theta star (KM)	2942
80% gamma percentile (KM)	78.86	90% gamma percentile (KM)	460.7
95% gamma percentile (KM)	1212	99% gamma percentile (KM)	3924

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.72, α)	2.016	Adjusted Chi Square Value (6.72, β)	1.935
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	700.2	95% Gamma Adjusted KM-UCL (use when $n < 50$)	729.2

95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.134
5% Lilliefors Critical Value	0.132

Detected Data appear Approximate Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	210.1	Mean in Log Scale	3.454
SD in Original Scale	859	SD in Log Scale	1.855
95% t UCL (assumes normality of ROS data)	420.5	95% Percentile Bootstrap UCL	454
95% BCA Bootstrap UCL	579.3	95% Bootstrap t UCL	1389
95% H-UCL (Log ROS)	446.5		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.438	KM Geo Mean	31.12
KM SD (logged)	1.869	95% Critical H Value (KM-Log)	3.41
KM Standard Error of Mean (logged)	0.279	95% H-UCL (KM -Log)	456.5
KM SD (logged)	1.869	95% Critical H Value (KM-Log)	3.41
KM Standard Error of Mean (logged)	0.279		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	210.2
SD in Original Scale	859
95% t UCL (Assumes normality)	420.5

DL/2 Log-Transformed

Mean in Log Scale	3.469
SD in Log Scale	1.841
95% H-Stat UCL	435.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 756.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(b)fluoranthene**General Statistics**

Total Number of Observations	47	Number of Distinct Observations	47
Number of Detects	44	Number of Non-Detects	3
Number of Distinct Detects	44	Number of Distinct Non-Detects	3
Minimum Detect	1.1	Minimum Non-Detect	11.6
Maximum Detect	7700	Maximum Non-Detect	12.7
Variance Detects	1340074	Percent Non-Detects	6.383%
Mean Detects	303.6	SD Detects	1158
Median Detects	68	CV Detects	3.813
Skewness Detects	6.352	Kurtosis Detects	41.35
Mean of Logged Detects	4.014	SD of Logged Detects	1.817

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.25
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.397
5% Lilliefors Critical Value	0.132

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	284.5	KM Standard Error of Mean	163.7
KM SD	1110	95% KM (BCA) UCL	621.4
95% KM (t) UCL	559.3	95% KM (Percentile Bootstrap) UCL	604.2
95% KM (z) UCL	553.8	95% KM Bootstrap t UCL	1814
90% KM Chebyshev UCL	775.7	95% KM Chebyshev UCL	998.2
97.5% KM Chebyshev UCL	1307	99% KM Chebyshev UCL	1914

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.767
5% A-D Critical Value	0.84
K-S Test Statistic	0.254
5% K-S Critical Value	0.143

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.388	k star (bias corrected MLE)	0.377
Theta hat (MLE)	781.7	Theta star (bias corrected MLE)	805.1
nu hat (MLE)	34.18	nu star (bias corrected)	33.18
Mean (detects)	303.6		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	284.2
Maximum	7700	Median	63.9
SD	1122	CV	3.946
k hat (MLE)	0.313	k star (bias corrected MLE)	0.307
Theta hat (MLE)	907.6	Theta star (bias corrected MLE)	924.7

nu hat (MLE)	29.44	nu star (bias corrected)	28.89
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (28.89, α)	17.63	Adjusted Chi Square Value (28.89, β)	17.35
95% Gamma Approximate UCL (use when $n \geq 50$)	466	95% Gamma Adjusted UCL (use when $n < 50$)	473.5

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	284.5	SD (KM)	1110
Variance (KM)	1231392	SE of Mean (KM)	163.7
k hat (KM)	0.0657	k star (KM)	0.0757
nu hat (KM)	6.178	nu star (KM)	7.117
theta hat (KM)	4328	theta star (KM)	3757
80% gamma percentile (KM)	121.1	90% gamma percentile (KM)	650.5
95% gamma percentile (KM)	1649	99% gamma percentile (KM)	5171

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.12, α)	2.235	Adjusted Chi Square Value (7.12, β)	2.15
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	905.9	95% Gamma Adjusted KM-UCL (use when $n < 50$)	942
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.152
5% Lilliefors Critical Value	0.132

[Detected Data appear Approximate Lognormal at 5% Significance Level](#)

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	284.5	Mean in Log Scale	3.855
SD in Original Scale	1122	SD in Log Scale	1.861
95% t UCL (assumes normality of ROS data)	559.2	95% Percentile Bootstrap UCL	596.7
95% BCA Bootstrap UCL	900.2	95% Bootstrap t UCL	1798

95% H-UCL (Log ROS) 677.5

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.828	KM Geo Mean	45.98
KM SD (logged)	1.886	95% Critical H Value (KM-Log)	3.433
KM Standard Error of Mean (logged)	0.28	95% H-UCL (KM -Log)	706.8
KM SD (logged)	1.886	95% Critical H Value (KM-Log)	3.433
KM Standard Error of Mean (logged)	0.28		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	284.6
SD in Original Scale	1122
95% t UCL (Assumes normality)	559.3

DL/2 Log-Transformed

Mean in Log Scale	3.873
SD in Log Scale	1.839
95% H-Stat UCL	650

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 998.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(g,h,i)perylene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	47
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Number of Detects	40	Number of Non-Detects	7
Number of Distinct Detects	40	Number of Distinct Non-Detects	7
Minimum Detect	2.7	Minimum Non-Detect	11.3
Maximum Detect	3000	Maximum Non-Detect	14.8
Variance Detects	226072	Percent Non-Detects	14.89%
Mean Detects	165.7	SD Detects	475.5
Median Detects	51	CV Detects	2.869
Skewness Detects	5.722	Kurtosis Detects	34.54
Mean of Logged Detects	3.898	SD of Logged Detects	1.478

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.326
5% Shapiro Wilk Critical Value	0.94
Lilliefors Test Statistic	0.366
5% Lilliefors Critical Value	0.139

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	142	KM Standard Error of Mean	64.53
KM SD	436.8	95% KM (BCA) UCL	278.3
95% KM (t) UCL	250.3	95% KM (Percentile Bootstrap) UCL	267.5
95% KM (z) UCL	248.2	95% KM Bootstrap t UCL	546.2
90% KM Chebyshev UCL	335.6	95% KM Chebyshev UCL	423.3
97.5% KM Chebyshev UCL	545	99% KM Chebyshev UCL	784.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.043
5% A-D Critical Value	0.811
K-S Test Statistic	0.212
5% K-S Critical Value	0.147

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.521	k star (bias corrected MLE)	0.498
Theta hat (MLE)	318.3	Theta star (bias corrected MLE)	332.6
nu hat (MLE)	41.65	nu star (bias corrected)	39.86
Mean (detects)	165.7		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	141.1
Maximum	3000	Median	39.1
SD	441.8	CV	3.132
k hat (MLE)	0.298	k star (bias corrected MLE)	0.293
Theta hat (MLE)	473.5	Theta star (bias corrected MLE)	481.3
nu hat (MLE)	28	nu star (bias corrected)	27.55
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (27.55, α)	16.58	Adjusted Chi Square Value (27.55, β)	16.31
95% Gamma Approximate UCL (use when $n \geq 50$)	234.4	95% Gamma Adjusted UCL (use when $n < 50$)	238.3

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	142	SD (KM)	436.8
Variance (KM)	190812	SE of Mean (KM)	64.53
k hat (KM)	0.106	k star (KM)	0.113
nu hat (KM)	9.935	nu star (KM)	10.63
theta hat (KM)	1344	theta star (KM)	1255
80% gamma percentile (KM)	116.2	90% gamma percentile (KM)	395.4
95% gamma percentile (KM)	815.9	99% gamma percentile (KM)	2119

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (10.63, α)	4.342	Adjusted Chi Square Value (10.63, β)	4.215
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	347.8	95% Gamma Adjusted KM-UCL (use when $n < 50$)	358.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.978
5% Shapiro Wilk Critical Value	0.94
Lilliefors Test Statistic	0.101
5% Lilliefors Critical Value	0.139

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	142	Mean in Log Scale	3.594
SD in Original Scale	441.5	SD in Log Scale	1.546
95% t UCL (assumes normality of ROS data)	250.1	95% Percentile Bootstrap UCL	264.4
95% BCA Bootstrap UCL	376	95% Bootstrap t UCL	531.3
95% H-UCL (Log ROS)	237.4		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.574	KM Geo Mean	35.66
KM SD (logged)	1.566	95% Critical H Value (KM-Log)	3.007
KM Standard Error of Mean (logged)	0.235	95% H-UCL (KM -Log)	243.5
KM SD (logged)	1.566	95% Critical H Value (KM-Log)	3.007
KM Standard Error of Mean (logged)	0.235		

DL/2 Statistics**DL/2 Normal**

Mean in Original Scale	142
SD in Original Scale	441.6
95% t UCL (Assumes normality)	250.1

DL/2 Log-Transformed

Mean in Log Scale	3.588
SD in Log Scale	1.554
95% H-Stat UCL	239.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 243.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness. These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(k)fluoranthene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	47
Number of Detects	43	Number of Non-Detects	4
Number of Distinct Detects	43	Number of Distinct Non-Detects	4
Minimum Detect	0.63	Minimum Non-Detect	11.3
Maximum Detect	2940	Maximum Non-Detect	12.7
Variance Detects	200381	Percent Non-Detects	8.511%
Mean Detects	117.7	SD Detects	447.6
Median Detects	23.5	CV Detects	3.805
Skewness Detects	6.257	Kurtosis Detects	40.19
Mean of Logged Detects	3.11	SD of Logged Detects	1.685

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.254
5% Shapiro Wilk Critical Value	0.943
Lilliefors Test Statistic	0.404

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

5% Lilliefors Critical Value 0.134 Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	108	KM Standard Error of Mean	62.63
KM SD	424.4	95% KM (BCA) UCL	236.4
95% KM (t) UCL	213.1	95% KM (Percentile Bootstrap) UCL	229.3
95% KM (z) UCL	211	95% KM Bootstrap t UCL	672.4
90% KM Chebyshev UCL	295.9	95% KM Chebyshev UCL	381
97.5% KM Chebyshev UCL	499.1	99% KM Chebyshev UCL	731.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.223
5% A-D Critical Value	0.837
K-S Test Statistic	0.272
5% K-S Critical Value	0.145

Detected Data Not Gamma Distributed at 5% Significance Level

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.397	k star (bias corrected MLE)	0.385
Theta hat (MLE)	296.1	Theta star (bias corrected MLE)	305.5
nu hat (MLE)	34.17	nu star (bias corrected)	33.12
Mean (detects)	117.7		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	107.6
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Maximum	2940	Median	22.5
SD	429	CV	3.986
k hat (MLE)	0.308	k star (bias corrected MLE)	0.303
Theta hat (MLE)	349	Theta star (bias corrected MLE)	355.3
nu hat (MLE)	28.99	nu star (bias corrected)	28.48
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (28.48, α)	17.3	Adjusted Chi Square Value (28.48, β)	17.02
95% Gamma Approximate UCL (use when $n \geq 50$)	177.2	95% Gamma Adjusted UCL (use when $n < 50$)	180.1

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	108	SD (KM)	424.4
Variance (KM)	180073	SE of Mean (KM)	62.63
k hat (KM)	0.0647	k star (KM)	0.0748
nu hat (KM)	6.085	nu star (KM)	7.03
theta hat (KM)	1668	theta star (KM)	1444
80% gamma percentile (KM)	44.79	90% gamma percentile (KM)	244.7
95% gamma percentile (KM)	625.2	99% gamma percentile (KM)	1974

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.03, α)	2.187	Adjusted Chi Square Value (7.03, β)	2.103
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	347.1	95% Gamma Adjusted KM-UCL (use when $n < 50$)	361
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.974
5% Shapiro Wilk Critical Value	0.943
Lilliefors Test Statistic	0.116
5% Lilliefors Critical Value	0.134

[Detected Data appear Lognormal at 5% Significance Level](#)

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	107.9	Mean in Log Scale	2.949
SD in Original Scale	428.9	SD in Log Scale	1.696
95% t UCL (assumes normality of ROS data)	213	95% Percentile Bootstrap UCL	228.3
95% BCA Bootstrap UCL	302.5	95% Bootstrap t UCL	699.4
95% H-UCL (Log ROS)	177.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.935	KM Geo Mean	18.81
KM SD (logged)	1.711	95% Critical H Value (KM-Log)	3.198
KM Standard Error of Mean (logged)	0.256	95% H-UCL (KM -Log)	182.3
KM SD (logged)	1.711	95% Critical H Value (KM-Log)	3.198
KM Standard Error of Mean (logged)	0.256		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	108.2
SD in Original Scale	428.9
95% t UCL (Assumes normality)	213.2

DL/2 Log-Transformed

Mean in Log Scale	2.998
SD in Log Scale	1.652
95% H-Stat UCL	167.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 381

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Bromomethane

General Statistics

Total Number of Observations	44	Number of Distinct Observations	34
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	34

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Bromomethane was not processed!

Chloroform

General Statistics

Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	28

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Chloroform was not processed!

Chrysene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	47
Number of Detects	44	Number of Non-Detects	3
Number of Distinct Detects	44	Number of Distinct Non-Detects	3
Minimum Detect	0.65	Minimum Non-Detect	11.6
Maximum Detect	6230	Maximum Non-Detect	12.7
Variance Detects	875185	Percent Non-Detects	6.383%
Mean Detects	238.9	SD Detects	935.5
Median Detects	50.2	CV Detects	3.916
Skewness Detects	6.395	Kurtosis Detects	41.76
Mean of Logged Detects	3.73	SD of Logged Detects	1.819

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.245
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.399
5% Lilliefors Critical Value	0.132

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**

KM Mean	223.9	KM Standard Error of Mean	132.3
KM SD	896.7	95% KM (BCA) UCL	491.2
95% KM (t) UCL	446	95% KM (Percentile Bootstrap) UCL	480.3
95% KM (z) UCL	441.5	95% KM Bootstrap t UCL	1643
90% KM Chebyshev UCL	620.8	95% KM Chebyshev UCL	800.6
97.5% KM Chebyshev UCL	1050	99% KM Chebyshev UCL	1540

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.744
5% A-D Critical Value	0.842

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

K-S Test Statistic	0.229	Kolmogorov-Smirnov GOF	
5% K-S Critical Value	0.143	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.38	k star (bias corrected MLE)	0.369
Theta hat (MLE)	628.7	Theta star (bias corrected MLE)	647
nu hat (MLE)	33.44	nu star (bias corrected)	32.49
Mean (detects)	238.9		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	223.6
Maximum	6230	Median	44.5
SD	906.4	CV	4.053
k hat (MLE)	0.31	k star (bias corrected MLE)	0.304
Theta hat (MLE)	721.3	Theta star (bias corrected MLE)	734.6
nu hat (MLE)	29.14	nu star (bias corrected)	28.62
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (28.62, α)	17.41	Adjusted Chi Square Value (28.62, β)	17.13
95% Gamma Approximate UCL (use when $n \geq 50$)	367.6	95% Gamma Adjusted UCL (use when $n < 50$)	373.6

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	223.9	SD (KM)	896.7
Variance (KM)	803991	SE of Mean (KM)	132.3
k hat (KM)	0.0624	k star (KM)	0.0726
nu hat (KM)	5.862	nu star (KM)	6.821

theta hat (KM)	3591	theta star (KM)	3086
80% gamma percentile (KM)	87	90% gamma percentile (KM)	496.6
95% gamma percentile (KM)	1293	99% gamma percentile (KM)	4150

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.82, α)	2.073	Adjusted Chi Square Value (6.82, β)	1.991
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	736.8	95% Gamma Adjusted KM-UCL (use when $n < 50$)	767.1
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.976
5% Shapiro Wilk Critical Value	0.944
Lilliefors Test Statistic	0.115
5% Lilliefors Critical Value	0.132

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	223.9	Mean in Log Scale	3.582
SD in Original Scale	906.4	SD in Log Scale	1.849
95% t UCL (assumes normality of ROS data)	445.8	95% Percentile Bootstrap UCL	483.7
95% BCA Bootstrap UCL	653.3	95% Bootstrap t UCL	1546
95% H-UCL (Log ROS)	500.2		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.563	KM Geo Mean	35.26
KM SD (logged)	1.867	95% Critical H Value (KM-Log)	3.407
KM Standard Error of Mean (logged)	0.278	95% H-UCL (KM -Log)	514.3
KM SD (logged)	1.867	95% Critical H Value (KM-Log)	3.407
KM Standard Error of Mean (logged)	0.278		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	224
SD in Original Scale	906.3
95% t UCL (Assumes normality)	446

DL/2 Log-Transformed

Mean in Log Scale	3.607
SD in Log Scale	1.822
95% H-Stat UCL	475.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 800.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Dibenz(a,h)anthracene**General Statistics**

Total Number of Observations	47	Number of Distinct Observations	42
Number of Detects	38	Number of Non-Detects	9
Number of Distinct Detects	35	Number of Distinct Non-Detects	8
Minimum Detect	1.4	Minimum Non-Detect	11.3
Maximum Detect	1080	Maximum Non-Detect	14.8
Variance Detects	30510	Percent Non-Detects	19.15%
Mean Detects	52.97	SD Detects	174.7
Median Detects	13.8	CV Detects	3.298
Skewness Detects	5.799	Kurtosis Detects	34.75
Mean of Logged Detects	2.714	SD of Logged Detects	1.318

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.283
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.384
5% Lilliefors Critical Value	0.142

Detected Data Not Normal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	44.05	KM Standard Error of Mean	23.07
KM SD	156.1	95% KM (BCA) UCL	86.03
95% KM (t) UCL	82.78	95% KM (Percentile Bootstrap) UCL	89.08
95% KM (z) UCL	82	95% KM Bootstrap t UCL	228.7
90% KM Chebyshev UCL	113.3	95% KM Chebyshev UCL	144.6
97.5% KM Chebyshev UCL	188.1	99% KM Chebyshev UCL	273.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.454
5% A-D Critical Value	0.812
K-S Test Statistic	0.27
5% K-S Critical Value	0.151

Detected Data Not Gamma Distributed at 5% Significance Level

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.505	k star (bias corrected MLE)	0.483
Theta hat (MLE)	104.9	Theta star (bias corrected MLE)	109.7
nu hat (MLE)	38.37	nu star (bias corrected)	36.68
Mean (detects)	52.97		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	42.83
Maximum	1080	Median	10
SD	158.1	CV	3.691
k hat (MLE)	0.284	k star (bias corrected MLE)	0.281
Theta hat (MLE)	150.5	Theta star (bias corrected MLE)	152.7
nu hat (MLE)	26.74	nu star (bias corrected)	26.37
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (26.37, α)	15.66	Adjusted Chi Square Value (26.37, β)	15.4
95% Gamma Approximate UCL (use when $n \geq 50$)	72.09	95% Gamma Adjusted UCL (use when $n < 50$)	73.32

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	44.05	SD (KM)	156.1
Variance (KM)	24356	SE of Mean (KM)	23.07
k hat (KM)	0.0797	k star (KM)	0.0888
nu hat (KM)	7.488	nu star (KM)	8.343
theta hat (KM)	552.9	theta star (KM)	496.3
80% gamma percentile (KM)	25.34	90% gamma percentile (KM)	110.9
95% gamma percentile (KM)	256.7	99% gamma percentile (KM)	742.1

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (8.34, α)	2.935	Adjusted Chi Square Value (8.34, β)	2.835
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	125.2	95% Gamma Adjusted KM-UCL (use when $n < 50$)	129.7

95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.953
5% Shapiro Wilk Critical Value	0.938
Lilliefors Test Statistic	0.118

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

5% Lilliefors Critical Value 0.142 Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	43.92	Mean in Log Scale	2.525
SD in Original Scale	157.8	SD in Log Scale	1.248
95% t UCL (assumes normality of ROS data)	82.55	95% Percentile Bootstrap UCL	86.21
95% BCA Bootstrap UCL	115.2	95% Bootstrap t UCL	229.3
95% H-UCL (Log ROS)	44.01		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.516	KM Geo Mean	12.38
KM SD (logged)	1.269	95% Critical H Value (KM-Log)	2.635
KM Standard Error of Mean (logged)	0.194	95% H-UCL (KM -Log)	45.35
KM SD (logged)	1.269	95% Critical H Value (KM-Log)	2.635
KM Standard Error of Mean (logged)	0.194		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	44
SD in Original Scale	157.8
95% t UCL (Assumes normality)	82.63

DL/2 Log-Transformed

Mean in Log Scale	2.541
SD in Log Scale	1.236
95% H-Stat UCL	43.72

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 45.35

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Dibenzofuran

General Statistics

Total Number of Observations	47	Number of Distinct Observations	38
Number of Detects	9	Number of Non-Detects	38
Number of Distinct Detects	9	Number of Distinct Non-Detects	29
Minimum Detect	75.6	Minimum Non-Detect	355
Maximum Detect	432	Maximum Non-Detect	3830
Variance Detects	13426	Percent Non-Detects	80.85%
Mean Detects	152.1	SD Detects	115.9
Median Detects	98.9	CV Detects	0.762
Skewness Detects	2.169	Kurtosis Detects	4.764
Mean of Logged Detects	4.847	SD of Logged Detects	0.578

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.695	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.333	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.274	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	124.3	KM Standard Error of Mean	19.49
KM SD	67.5	95% KM (BCA) UCL	156.9
95% KM (t) UCL	157	95% KM (Percentile Bootstrap) UCL	159.3
95% KM (z) UCL	156.3	95% KM Bootstrap t UCL	189.4
90% KM Chebyshev UCL	182.8	95% KM Chebyshev UCL	209.2

97.5% KM Chebyshev UCL	246	99% KM Chebyshev UCL	318.2
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Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.851
5% A-D Critical Value	0.727
K-S Test Statistic	0.275
5% K-S Critical Value	0.281

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.965	k star (bias corrected MLE)	2.051
Theta hat (MLE)	51.29	Theta star (bias corrected MLE)	74.16
nu hat (MLE)	53.38	nu star (bias corrected)	36.92
Mean (detects)	152.1		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	64.71	Mean	121.4
Maximum	432	Median	112.4
SD	55.8	CV	0.46
k hat (MLE)	8.211	k star (bias corrected MLE)	7.701
Theta hat (MLE)	14.78	Theta star (bias corrected MLE)	15.76
nu hat (MLE)	771.9	nu star (bias corrected)	723.9
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (723.92, α)	662.5	Adjusted Chi Square Value (723.92, β)	660.6
95% Gamma Approximate UCL (use when $n \geq 50$)	132.7	95% Gamma Adjusted UCL (use when $n < 50$)	133

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	124.3	SD (KM)	67.5
Variance (KM)	4557	SE of Mean (KM)	19.49
k hat (KM)	3.39	k star (KM)	3.187
nu hat (KM)	318.6	nu star (KM)	299.6
theta hat (KM)	36.67	theta star (KM)	38.99
80% gamma percentile (KM)	176	90% gamma percentile (KM)	217.6
95% gamma percentile (KM)	256.4	99% gamma percentile (KM)	340

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (299.62, α)	260.5	Adjusted Chi Square Value (299.62, β)	259.4
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	142.9	95% Gamma Adjusted KM-UCL (use when $n < 50$)	143.6

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.836
5% Shapiro Wilk Critical Value	0.829
Lilliefors Test Statistic	0.232
5% Lilliefors Critical Value	0.274

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	120.8	Mean in Log Scale	4.742
SD in Original Scale	53.43	SD in Log Scale	0.287
95% t UCL (assumes normality of ROS data)	133.9	95% Percentile Bootstrap UCL	134.6
95% BCA Bootstrap UCL	141	95% Bootstrap t UCL	149.5
95% H-UCL (Log ROS)	128.9		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.725	KM Geo Mean	112.7
KM SD (logged)	0.404	95% Critical H Value (KM-Log)	1.825
KM Standard Error of Mean (logged)	0.133	95% H-UCL (KM -Log)	136.4

KM SD (logged)	0.404	95% Critical H Value (KM-Log)	1.825
KM Standard Error of Mean (logged)	0.133		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	228.2
SD in Original Scale	257.3
95% t UCL (Assumes normality)	291.2

DL/2 Log-Transformed

Mean in Log Scale	5.261
SD in Log Scale	0.462
95% H-Stat UCL	243.3

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	143.6	95% GROS Adjusted Gamma UCL	133
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When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Ethylbenzene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	28

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Ethylbenzene was not processed!

Fluoranthene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	46
Number of Detects	41	Number of Non-Detects	6
Number of Distinct Detects	40	Number of Distinct Non-Detects	6
Minimum Detect	2.6	Minimum Non-Detect	11.3
Maximum Detect	11000	Maximum Non-Detect	12.7
Variance Detects	2945261	Percent Non-Detects	12.77%
Mean Detects	454.5	SD Detects	1716
Median Detects	113	CV Detects	3.776
Skewness Detects	6.099	Kurtosis Detects	38.19
Mean of Logged Detects	4.448	SD of Logged Detects	1.668

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.258	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.396	Lilliefors GOF Test
5% Lilliefors Critical Value	0.137	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	397.2	KM Standard Error of Mean	234.9
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KM SD	1590	95% KM (BCA) UCL	885.4
95% KM (t) UCL	791.4	95% KM (Percentile Bootstrap) UCL	852.2
95% KM (z) UCL	783.5	95% KM Bootstrap t UCL	2841
90% KM Chebyshev UCL	1102	95% KM Chebyshev UCL	1421
97.5% KM Chebyshev UCL	1864	99% KM Chebyshev UCL	2734

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.087
5% A-D Critical Value	0.837
K-S Test Statistic	0.225
5% K-S Critical Value	0.148

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.395	k star (bias corrected MLE)	0.382
Theta hat (MLE)	1152	Theta star (bias corrected MLE)	1190
nu hat (MLE)	32.36	nu star (bias corrected)	31.33
Mean (detects)	454.5		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	396.5
Maximum	11000	Median	76.9
SD	1608	CV	4.054
k hat (MLE)	0.262	k star (bias corrected MLE)	0.259
Theta hat (MLE)	1513	Theta star (bias corrected MLE)	1528
nu hat (MLE)	24.63	nu star (bias corrected)	24.39

Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (24.39, α)	14.15	Adjusted Chi Square Value (24.39, β)	13.9
95% Gamma Approximate UCL (use when $n \geq 50$)	683.7	95% Gamma Adjusted UCL (use when $n < 50$)	695.9

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	397.2	SD (KM)	1590
Variance (KM)	2529099	SE of Mean (KM)	234.9
k hat (KM)	0.0624	k star (KM)	0.0726
nu hat (KM)	5.863	nu star (KM)	6.822
theta hat (KM)	6368	theta star (KM)	5473
80% gamma percentile (KM)	154.4	90% gamma percentile (KM)	881
95% gamma percentile (KM)	2294	99% gamma percentile (KM)	7362

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.82, α)	2.073	Adjusted Chi Square Value (6.82, β)	1.992
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	1307	95% Gamma Adjusted KM-UCL (use when $n < 50$)	1360
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.981
5% Shapiro Wilk Critical Value	0.941
Lilliefors Test Statistic	0.0786
5% Lilliefors Critical Value	0.137

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	397.2	Mean in Log Scale	4.097
SD in Original Scale	1607	SD in Log Scale	1.812
95% t UCL (assumes normality of ROS data)	790.8	95% Percentile Bootstrap UCL	847.4
95% BCA Bootstrap UCL	1145	95% Bootstrap t UCL	2985
95% H-UCL (Log ROS)	756.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.076	KM Geo Mean	58.94
KM SD (logged)	1.827	95% Critical H Value (KM-Log)	3.353
KM Standard Error of Mean (logged)	0.272	95% H-UCL (KM -Log)	771.5
KM SD (logged)	1.827	95% Critical H Value (KM-Log)	3.353
KM Standard Error of Mean (logged)	0.272		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	397.3
SD in Original Scale	1607
95% t UCL (Assumes normality)	790.9

DL/2 Log-Transformed

Mean in Log Scale	4.109
SD in Log Scale	1.796
95% H-Stat UCL	733.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1421
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Fluorene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	44
Number of Detects	37	Number of Non-Detects	10

Number of Distinct Detects	34	Number of Distinct Non-Detects	10
Minimum Detect	0.68	Minimum Non-Detect	11
Maximum Detect	1860	Maximum Non-Detect	14.8
Variance Detects	92659	Percent Non-Detects	21.28%
Mean Detects	62.93	SD Detects	304.4
Median Detects	5.7	CV Detects	4.837
Skewness Detects	6.036	Kurtosis Detects	36.6
Mean of Logged Detects	1.796	SD of Logged Detects	1.639

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.206
5% Shapiro Wilk Critical Value	0.936
Lilliefors Test Statistic	0.429
5% Lilliefors Critical Value	0.144

Detected Data Not Normal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	50.45	KM Standard Error of Mean	39.56
KM SD	267.5	95% KM (BCA) UCL	130.5
95% KM (t) UCL	116.9	95% KM (Percentile Bootstrap) UCL	128.4
95% KM (z) UCL	115.5	95% KM Bootstrap t UCL	898
90% KM Chebyshev UCL	169.1	95% KM Chebyshev UCL	222.9
97.5% KM Chebyshev UCL	297.5	99% KM Chebyshev UCL	444

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.496
5% A-D Critical Value	0.86
K-S Test Statistic	0.314
5% K-S Critical Value	0.158

Detected Data Not Gamma Distributed at 5% Significance Level

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.295	k star (bias corrected MLE)	0.289
Theta hat (MLE)	213.4	Theta star (bias corrected MLE)	217.8
nu hat (MLE)	21.82	nu star (bias corrected)	21.38
Mean (detects)	62.93		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	49.54
Maximum	1860	Median	2.8
SD	270.5	CV	5.461
k hat (MLE)	0.21	k star (bias corrected MLE)	0.211
Theta hat (MLE)	235.4	Theta star (bias corrected MLE)	234.5
nu hat (MLE)	19.79	nu star (bias corrected)	19.86
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (19.86, α)	10.74	Adjusted Chi Square Value (19.86, β)	10.53
95% Gamma Approximate UCL (use when $n \geq 50$)	91.55	95% Gamma Adjusted UCL (use when $n < 50$)	93.4

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	50.45	SD (KM)	267.5
Variance (KM)	71551	SE of Mean (KM)	39.56
k hat (KM)	0.0356	k star (KM)	0.0475
nu hat (KM)	3.344	nu star (KM)	4.464
theta hat (KM)	1418	theta star (KM)	1062
80% gamma percentile (KM)	5.67	90% gamma percentile (KM)	71.81
95% gamma percentile (KM)	263.1	99% gamma percentile (KM)	1120

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (4.46, α)	0.913	Adjusted Chi Square Value (4.46, β)	0.865
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	246.7	95% Gamma Adjusted KM-UCL (use when $n < 50$)	260.4
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.912
5% Shapiro Wilk Critical Value	0.936
Lilliefors Test Statistic	0.135
5% Lilliefors Critical Value	0.144

[Detected Data appear Approximate Lognormal at 5% Significance Level](#)

Shapiro Wilk GOF Test

Detected Data Not Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	50.31	Mean in Log Scale	1.688
SD in Original Scale	270.4	SD in Log Scale	1.465
95% t UCL (assumes normality of ROS data)	116.5	95% Percentile Bootstrap UCL	129.2
95% BCA Bootstrap UCL	169.3	95% Bootstrap t UCL	886.2
95% H-UCL (Log ROS)	29.44		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.65	KM Geo Mean	5.207
KM SD (logged)	1.517	95% Critical H Value (KM-Log)	2.943
KM Standard Error of Mean (logged)	0.235	95% H-UCL (KM -Log)	31.77
KM SD (logged)	1.517	95% Critical H Value (KM-Log)	2.943
KM Standard Error of Mean (logged)	0.235		

DL/2 Statistics**DL/2 Normal**

Mean in Original Scale	50.84
SD in Original Scale	270.3
95% t UCL (Assumes normality)	117

DL/2 Log-Transformed

Mean in Log Scale	1.798
SD in Log Scale	1.45
95% H-Stat UCL	31.84

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 222.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Indeno(1,2,3-cd)pyrene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	46
Number of Detects	40	Number of Non-Detects	7
Number of Distinct Detects	39	Number of Distinct Non-Detects	7
Minimum Detect	2.2	Minimum Non-Detect	11.3
Maximum Detect	2720	Maximum Non-Detect	14.8
Variance Detects	185355	Percent Non-Detects	14.89%
Mean Detects	140.2	SD Detects	430.5
Median Detects	38.7	CV Detects	3.071
Skewness Detects	5.812	Kurtosis Detects	35.33
Mean of Logged Detects	3.67	SD of Logged Detects	1.464

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.307
5% Shapiro Wilk Critical Value	0.94
Lilliefors Test Statistic	0.374

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

5% Lilliefors Critical Value 0.139 Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	120.2	KM Standard Error of Mean	58.36
KM SD	395.1	95% KM (BCA) UCL	242.9
95% KM (t) UCL	218.2	95% KM (Percentile Bootstrap) UCL	231.1
95% KM (z) UCL	216.2	95% KM Bootstrap t UCL	543.4
90% KM Chebyshev UCL	295.3	95% KM Chebyshev UCL	374.6
97.5% KM Chebyshev UCL	484.7	99% KM Chebyshev UCL	700.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.499
5% A-D Critical Value	0.813
K-S Test Statistic	0.23
5% K-S Critical Value	0.148

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.499	k star (bias corrected MLE)	0.478
Theta hat (MLE)	280.8	Theta star (bias corrected MLE)	293
nu hat (MLE)	39.94	nu star (bias corrected)	38.27
Mean (detects)	140.2		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	119.3
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Maximum	2720	Median	30.5
SD	399.6	CV	3.35
k hat (MLE)	0.295	k star (bias corrected MLE)	0.29
Theta hat (MLE)	404.4	Theta star (bias corrected MLE)	410.9
nu hat (MLE)	27.73	nu star (bias corrected)	27.29
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (27.29, α)	16.38	Adjusted Chi Square Value (27.29, β)	16.11
95% Gamma Approximate UCL (use when $n \geq 50$)	198.8	95% Gamma Adjusted UCL (use when $n < 50$)	202.1

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	120.2	SD (KM)	395.1
Variance (KM)	156084	SE of Mean (KM)	58.36
k hat (KM)	0.0926	k star (KM)	0.101
nu hat (KM)	8.703	nu star (KM)	9.481
theta hat (KM)	1298	theta star (KM)	1192
80% gamma percentile (KM)	84.45	90% gamma percentile (KM)	321.1
95% gamma percentile (KM)	697.4	99% gamma percentile (KM)	1901

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (9.48, α)	3.62	Adjusted Chi Square Value (9.48, β)	3.506
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	314.8	95% Gamma Adjusted KM-UCL (use when $n < 50$)	325.1
95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)			

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.975
5% Shapiro Wilk Critical Value	0.94
Lilliefors Test Statistic	0.114
5% Lilliefors Critical Value	0.139

[Detected Data appear Lognormal at 5% Significance Level](#)

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	120.2	Mean in Log Scale	3.396
SD in Original Scale	399.3	SD in Log Scale	1.501
95% t UCL (assumes normality of ROS data)	218	95% Percentile Bootstrap UCL	228.6
95% BCA Bootstrap UCL	292.7	95% Bootstrap t UCL	527.2
95% H-UCL (Log ROS)	176.1		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.376	KM Geo Mean	29.26
KM SD (logged)	1.52	95% Critical H Value (KM-Log)	2.947
KM Standard Error of Mean (logged)	0.228	95% H-UCL (KM -Log)	179.7
KM SD (logged)	1.52	95% Critical H Value (KM-Log)	2.947
KM Standard Error of Mean (logged)	0.228		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	120.2
SD in Original Scale	399.3
95% t UCL (Assumes normality)	218

DL/2 Log-Transformed

Mean in Log Scale	3.394
SD in Log Scale	1.504
95% H-Stat UCL	176.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

KM H-UCL 179.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

m&p-Xylene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	34
		Number of Missing Observations	3
Number of Detects	0	Number of Non-Detects	44
Number of Distinct Detects	0	Number of Distinct Non-Detects	34

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable m&p-Xylene was not processed!

Methylene chloride

General Statistics

Total Number of Observations	44	Number of Distinct Observations	38
		Number of Missing Observations	3
Number of Detects	2	Number of Non-Detects	42
Number of Distinct Detects	2	Number of Distinct Non-Detects	36
Minimum Detect	502	Minimum Non-Detect	15.7
Maximum Detect	628	Maximum Non-Detect	613
Variance Detects	7938	Percent Non-Detects	95.45%
Mean Detects	565	SD Detects	89.1
Median Detects	565	CV Detects	0.158
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	6.331	SD of Logged Detects	0.158

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	41.5	KM Standard Error of Mean	25.28
KM SD	116.8	95% KM (BCA) UCL	N/A
95% KM (t) UCL	83.99	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	83.07	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	117.3	95% KM Chebyshev UCL	151.7
97.5% KM Chebyshev UCL	199.3	99% KM Chebyshev UCL	293

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	80.09	k star (bias corrected MLE)	N/A
Theta hat (MLE)	7.054	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	320.4	nu star (bias corrected)	N/A
Mean (detects)	565		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	41.5	SD (KM)	116.8
Variance (KM)	13633	SE of Mean (KM)	25.28
k hat (KM)	0.126	k star (KM)	0.133
nu hat (KM)	11.12	nu star (KM)	11.69
theta hat (KM)	328.5	theta star (KM)	312.4
80% gamma percentile (KM)	40.51	90% gamma percentile (KM)	120.5
95% gamma percentile (KM)	233.4	99% gamma percentile (KM)	569.6

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (11.69, α)	5.024	Adjusted Chi Square Value (11.69, β)	4.876
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	96.56	95% Gamma Adjusted KM-UCL (use when $n < 50$)	99.5

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	221.6	Mean in Log Scale	5.364
SD in Original Scale	80.17	SD in Log Scale	0.24
95% t UCL (assumes normality of ROS data)	241.9	95% Percentile Bootstrap UCL	243.5
95% BCA Bootstrap UCL	252.7	95% Bootstrap t UCL	286.5
95% H-UCL (Log ROS)	234.2		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	2.922	KM Geo Mean	18.58
KM SD (logged)	0.758	95% Critical H Value (KM-Log)	2.12
KM Standard Error of Mean (logged)	0.165	95% H-UCL (KM -Log)	31.63
KM SD (logged)	0.758	95% Critical H Value (KM-Log)	2.12
KM Standard Error of Mean (logged)	0.165		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	59.65
SD in Original Scale	136.9
95% t UCL (Assumes normality)	94.34

DL/2 Log-Transformed

Mean in Log Scale	2.788
SD in Log Scale	1.249
95% H-Stat UCL	58.81

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	83.99	KM H-UCL	31.63
95% KM (BCA) UCL	N/A		

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness. These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Naphthalene

General Statistics

Total Number of Observations	44	Number of Distinct Observations	33
		Number of Missing Observations	3
Number of Detects	13	Number of Non-Detects	31
Number of Distinct Detects	11	Number of Distinct Non-Detects	22
Minimum Detect	0.93	Minimum Non-Detect	4
Maximum Detect	85.2	Maximum Non-Detect	149
Variance Detects	817.1	Percent Non-Detects	70.45%
Mean Detects	19.99	SD Detects	28.58
Median Detects	9.6	CV Detects	1.43
Skewness Detects	1.758	Kurtosis Detects	1.84
Mean of Logged Detects	2.066	SD of Logged Detects	1.465

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.669	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.398	Lilliefors GOF Test

5% Lilliefors Critical Value 0.234 Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	7.735	KM Standard Error of Mean	2.879
KM SD	17.59	95% KM (BCA) UCL	13.42
95% KM (t) UCL	12.57	95% KM (Percentile Bootstrap) UCL	12.71
95% KM (z) UCL	12.47	95% KM Bootstrap t UCL	20.54
90% KM Chebyshev UCL	16.37	95% KM Chebyshev UCL	20.29
97.5% KM Chebyshev UCL	25.72	99% KM Chebyshev UCL	36.38

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.743
5% A-D Critical Value	0.778
K-S Test Statistic	0.283
5% K-S Critical Value	0.247

Anderson-Darling GOF Test

Detected data appear Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.656	k star (bias corrected MLE)	0.556
Theta hat (MLE)	30.45	Theta star (bias corrected MLE)	35.94
nu hat (MLE)	17.07	nu star (bias corrected)	14.46
Mean (detects)	19.99		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	6.01
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Maximum	85.2	Median	0.01
SD	17.67	CV	2.94
k hat (MLE)	0.179	k star (bias corrected MLE)	0.182
Theta hat (MLE)	33.63	Theta star (bias corrected MLE)	33.08
nu hat (MLE)	15.73	nu star (bias corrected)	15.99
Adjusted Level of Significance (β)	0.0445		
Approximate Chi Square Value (15.99, α)	7.954	Adjusted Chi Square Value (15.99, β)	7.761
95% Gamma Approximate UCL (use when $n \geq 50$)	12.08	95% Gamma Adjusted UCL (use when $n < 50$)	12.38

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	7.735	SD (KM)	17.59
Variance (KM)	309.5	SE of Mean (KM)	2.879
k hat (KM)	0.193	k star (KM)	0.195
nu hat (KM)	17.01	nu star (KM)	17.18
theta hat (KM)	40.01	theta star (KM)	39.61
80% gamma percentile (KM)	10.06	90% gamma percentile (KM)	23.39
95% gamma percentile (KM)	40.1	99% gamma percentile (KM)	86.29

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (17.18, α)	8.804	Adjusted Chi Square Value (17.18, β)	8.6
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	15.1	95% Gamma Adjusted KM-UCL (use when $n < 50$)	15.46

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.93
5% Shapiro Wilk Critical Value	0.866
Lilliefors Test Statistic	0.189
5% Lilliefors Critical Value	0.234

Detected Data appear Lognormal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	7.388	Mean in Log Scale	1.07
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SD in Original Scale	17.22	SD in Log Scale	1.079
95% t UCL (assumes normality of ROS data)	11.75	95% Percentile Bootstrap UCL	11.68
95% BCA Bootstrap UCL	13.76	95% Bootstrap t UCL	18.17
95% H-UCL (Log ROS)	7.82		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.06	KM Geo Mean	2.887
KM SD (logged)	1.127	95% Critical H Value (KM-Log)	2.512
KM Standard Error of Mean (logged)	0.252	95% H-UCL (KM -Log)	8.391
KM SD (logged)	1.127	95% Critical H Value (KM-Log)	2.512
KM Standard Error of Mean (logged)	0.252		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	11.68
SD in Original Scale	21.93
95% t UCL (Assumes normality)	17.24

DL/2 Log-Transformed

Mean in Log Scale	1.471
SD in Log Scale	1.187
95% H-Stat UCL	14.05

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$ but $k \leq 1$) 15.46

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
 However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Percent Moisture

General Statistics

Total Number of Observations	47	Number of Distinct Observations	38
		Number of Missing Observations	0
Minimum	5.4	Mean	17.12
Maximum	43.3	Median	16
SD	5.817	Std. Error of Mean	0.848
Coefficient of Variation	0.34	Skewness	2.254

Normal GOF Test

Shapiro Wilk Test Statistic	0.82
5% Shapiro Wilk Critical Value	0.946
Lilliefors Test Statistic	0.18
5% Lilliefors Critical Value	0.128

Data Not Normal at 5% Significance Level

Shapiro Wilk GOF Test

Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL

95% Student's-t UCL	18.54
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95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	18.81
95% Modified-t UCL (Johnson-1978)	18.59

Gamma GOF Test

A-D Test Statistic	1.412
5% A-D Critical Value	0.749
K-S Test Statistic	0.135
5% K-S Critical Value	0.129

Anderson-Darling Gamma GOF Test

Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov Gamma GOF Test

Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	10.56	k star (bias corrected MLE)	9.899
Theta hat (MLE)	1.621	Theta star (bias corrected MLE)	1.729
nu hat (MLE)	992.5	nu star (bias corrected)	930.5
MLE Mean (bias corrected)	17.12	MLE Sd (bias corrected)	5.441
		Approximate Chi Square Value (0.05)	860.7
Adjusted Level of Significance	0.0449	Adjusted Chi Square Value	858.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	18.51	95% Adjusted Gamma UCL (use when n<50)	18.55
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Lognormal GOF Test

Shapiro Wilk Test Statistic	0.925
5% Shapiro Wilk Critical Value	0.946
Lilliefors Test Statistic	0.145
5% Lilliefors Critical Value	0.128

Shapiro Wilk Lognormal GOF Test

Data Not Lognormal at 5% Significance Level

Lilliefors Lognormal GOF Test

Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.686	Mean of logged Data	2.792
Maximum of Logged Data	3.768	SD of logged Data	0.312

Assuming Lognormal Distribution

95% H-UCL	18.59	90% Chebyshev (MVUE) UCL	19.5
95% Chebyshev (MVUE) UCL	20.58	97.5% Chebyshev (MVUE) UCL	22.08
99% Chebyshev (MVUE) UCL	25.03		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	18.51	95% Jackknife UCL	18.54
95% Standard Bootstrap UCL	18.54	95% Bootstrap-t UCL	18.9
95% Hall's Bootstrap UCL	19.65	95% Percentile Bootstrap UCL	18.54
95% BCA Bootstrap UCL	18.76		
90% Chebyshev(Mean, Sd) UCL	19.66	95% Chebyshev(Mean, Sd) UCL	20.82
97.5% Chebyshev(Mean, Sd) UCL	22.42	99% Chebyshev(Mean, Sd) UCL	25.56

Suggested UCL to Use

95% Student's-t UCL	18.54	or 95% Modified-t UCL	18.59
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Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Phenanthrene

General Statistics

Total Number of Observations	47	Number of Distinct Observations	47
Number of Detects	41	Number of Non-Detects	6
Number of Distinct Detects	41	Number of Distinct Non-Detects	6
Minimum Detect	1.6	Minimum Non-Detect	11.3
Maximum Detect	9410	Maximum Non-Detect	12.7
Variance Detects	2125683	Percent Non-Detects	12.77%
Mean Detects	386.6	SD Detects	1458
Median Detects	101	CV Detects	3.772
Skewness Detects	6.223	Kurtosis Detects	39.38
Mean of Logged Detects	4.379	SD of Logged Detects	1.693

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.246
5% Shapiro Wilk Critical Value	0.941
Lilliefors Test Statistic	0.397
5% Lilliefors Critical Value	0.137

Detected Data Not Normal at 5% Significance Level

Shapiro Wilk GOF Test

Detected Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	337.9	KM Standard Error of Mean	199.5
KM SD	1351	95% KM (BCA) UCL	769.1
95% KM (t) UCL	672.8	95% KM (Percentile Bootstrap) UCL	728.6
95% KM (z) UCL	666.1	95% KM Bootstrap t UCL	2497
90% KM Chebyshev UCL	936.5	95% KM Chebyshev UCL	1208
97.5% KM Chebyshev UCL	1584	99% KM Chebyshev UCL	2323

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.629
5% A-D Critical Value	0.833
K-S Test Statistic	0.219
5% K-S Critical Value	0.148

Detected Data Not Gamma Distributed at 5% Significance Level

Anderson-Darling GOF Test

Detected Data Not Gamma Distributed at 5% Significance Level

Kolmogorov-Smirnov GOF

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.414	k star (bias corrected MLE)	0.4
Theta hat (MLE)	932.6	Theta star (bias corrected MLE)	965.4
nu hat (MLE)	33.99	nu star (bias corrected)	32.83
Mean (detects)	386.6		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	337.2
Maximum	9410	Median	76.3
SD	1366	CV	4.05
k hat (MLE)	0.271	k star (bias corrected MLE)	0.268
Theta hat (MLE)	1245	Theta star (bias corrected MLE)	1260
nu hat (MLE)	25.46	nu star (bias corrected)	25.17
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (25.17, α)	14.74	Adjusted Chi Square Value (25.17, β)	14.49
95% Gamma Approximate UCL (use when $n \geq 50$)	575.8	95% Gamma Adjusted UCL (use when $n < 50$)	585.9

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	337.9	SD (KM)	1351
Variance (KM)	1825269	SE of Mean (KM)	199.5
k hat (KM)	0.0626	k star (KM)	0.0728
nu hat (KM)	5.881	nu star (KM)	6.839
theta hat (KM)	5401	theta star (KM)	4645
80% gamma percentile (KM)	132.1	90% gamma percentile (KM)	750.9
95% gamma percentile (KM)	1952	99% gamma percentile (KM)	6256

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.84, α)	2.082	Adjusted Chi Square Value (6.84, β)	2.001
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	1110	95% Gamma Adjusted KM-UCL (use when $n < 50$)	1155

95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.972
5% Shapiro Wilk Critical Value	0.941
Lilliefors Test Statistic	0.129

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors GOF Test

5% Lilliefors Critical Value 0.137 Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	338	Mean in Log Scale	4.057
SD in Original Scale	1366	SD in Log Scale	1.794
95% t UCL (assumes normality of ROS data)	672.4	95% Percentile Bootstrap UCL	724.4
95% BCA Bootstrap UCL	953.3	95% Bootstrap t UCL	2462
95% H-UCL (Log ROS)	692.7		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	4.016	KM Geo Mean	55.46
KM SD (logged)	1.841	95% Critical H Value (KM-Log)	3.372
KM Standard Error of Mean (logged)	0.276	95% H-UCL (KM -Log)	754.5
KM SD (logged)	1.841	95% Critical H Value (KM-Log)	3.372
KM Standard Error of Mean (logged)	0.276		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale	338
SD in Original Scale	1366
95% t UCL (Assumes normality)	672.4

DL/2 Log-Transformed

Mean in Log Scale	4.048
SD in Log Scale	1.805
95% H-Stat UCL	706.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 1208

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

p-Isopropyltoluene

General Statistics			
Total Number of Observations	44	Number of Distinct Observations	28
		Number of Missing Observations	3
Number of Detects	1	Number of Non-Detects	43
Number of Distinct Detects	1	Number of Distinct Non-Detects	28

**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**

The data set for variable p-Isopropyltoluene was not processed!

Pyrene

General Statistics			
Total Number of Observations	47	Number of Distinct Observations	47
Number of Detects	43	Number of Non-Detects	4
Number of Distinct Detects	43	Number of Distinct Non-Detects	4
Minimum Detect	1.3	Minimum Non-Detect	11.3
Maximum Detect	9670	Maximum Non-Detect	12.7
Variance Detects	2175761	Percent Non-Detects	8.511%
Mean Detects	385.9	SD Detects	1475
Median Detects	72.4	CV Detects	3.823
Skewness Detects	6.228	Kurtosis Detects	39.89
Mean of Logged Detects	4.149	SD of Logged Detects	1.839

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.258	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.943	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.397	Lilliefors GOF Test
5% Lilliefors Critical Value	0.134	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	353.4	KM Standard Error of Mean	206.4
KM SD	1398	95% KM (BCA) UCL	781.6
95% KM (t) UCL	699.9	95% KM (Percentile Bootstrap) UCL	763.3
95% KM (z) UCL	692.9	95% KM Bootstrap t UCL	2415
90% KM Chebyshev UCL	972.6	95% KM Chebyshev UCL	1253
97.5% KM Chebyshev UCL	1642	99% KM Chebyshev UCL	2407

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.812	Anderson-Darling GOF Test
5% A-D Critical Value	0.844	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.243	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.145	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.369	k star (bias corrected MLE)	0.359
Theta hat (MLE)	1046	Theta star (bias corrected MLE)	1075
nu hat (MLE)	31.74	nu star (bias corrected)	30.86
Mean (detects)	385.9		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	353
Maximum	9670	Median	69.2
SD	1414	CV	4.004
k hat (MLE)	0.283	k star (bias corrected MLE)	0.279
Theta hat (MLE)	1249	Theta star (bias corrected MLE)	1266
nu hat (MLE)	26.58	nu star (bias corrected)	26.21
Adjusted Level of Significance (β)	0.0449		
Approximate Chi Square Value (26.21, α)	15.54	Adjusted Chi Square Value (26.21, β)	15.28
95% Gamma Approximate UCL (use when $n \geq 50$)	595.4	95% Gamma Adjusted UCL (use when $n < 50$)	605.5

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	353.4	SD (KM)	1398
Variance (KM)	1955637	SE of Mean (KM)	206.4
k hat (KM)	0.0639	k star (KM)	0.074
nu hat (KM)	6.003	nu star (KM)	6.953
theta hat (KM)	5534	theta star (KM)	4778
80% gamma percentile (KM)	143.2	90% gamma percentile (KM)	794.8
95% gamma percentile (KM)	2044	99% gamma percentile (KM)	6493

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.95, α)	2.145	Adjusted Chi Square Value (6.95, β)	2.061
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	1146	95% Gamma Adjusted KM-UCL (use when $n < 50$)	1192

95% Gamma Adjusted KM-UCL (use when $k \leq 1$ and $15 < n < 50$)

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.979
5% Shapiro Wilk Critical Value	0.943

Shapiro Wilk GOF Test

Detected Data appear Lognormal at 5% Significance Level

Lilliefors Test Statistic 0.0892
 5% Lilliefors Critical Value 0.134

Lilliefors GOF Test

Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	353.4	Mean in Log Scale	3.924
SD in Original Scale	1414	SD in Log Scale	1.909
95% t UCL (assumes normality of ROS data)	699.5	95% Percentile Bootstrap UCL	755.9
95% BCA Bootstrap UCL	1095	95% Bootstrap t UCL	2361
95% H-UCL (Log ROS)	830.3		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	3.898	KM Geo Mean	49.31
KM SD (logged)	1.934	95% Critical H Value (KM-Log)	3.5
KM Standard Error of Mean (logged)	0.288	95% H-UCL (KM -Log)	868.5
KM SD (logged)	1.934	95% Critical H Value (KM-Log)	3.5
KM Standard Error of Mean (logged)	0.288		

DL/2 Statistics

DL/2 Normal

Mean in Original Scale 353.5
 SD in Original Scale 1414
 95% t UCL (Assumes normality) 699.7

DL/2 Log-Transformed

Mean in Log Scale 3.948
 SD in Log Scale 1.879
 95% H-Stat UCL 781.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 1253

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ATTACHMENT 2A

RESIDENTIAL & CONSTRUCTION OUTPUT AND DEFAULT EXPOSURE FACTORS

VURAM

Virginia Unified Risk Assessment Model

VERSION: 3.0

Residential Quantitative Risk Assessment Report

Total Hazard Index/Risk for All Media

Program: Voluntary Remediation Program (VRP)

Site Name: Former MGP Surface Soil

Non-Cancer Adult

Total: 4.97E-03

does not exceed hazard index

Non-Cancer Child

Total: 4.26E-02

does not exceed hazard index

Cancer

Total: 8.76E-06

Exceeds Cumulative Risk!

Risk Based Performance Criteria

Default Hazard Index

1

Default Cumulative Risk-All Chemicals

1.00E-06

**All Report Pages are Required for Risk Assessment Submission
DETAILED REPORT FOLLOWS**

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Soil

Analyte: Benz[a]anthracene

CAS: 56-55-3

Concentration mg/kg:	8.20E-01
RfDo (mg/kg-day):	
RfCi (mg/m3):	
SFO (mg/kg-day)-1:	1.00E-01
IUR (µg/m3)-1:	6.00E-05
Mutagen:	Y
VOC:	Y

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:			5.35E-07
Dermal:			1.79E-07
Inhalation:			1.10E-08
Total:	0.00E+00	0.00E+00	7.25E-07

% Contribution to Media Hazard/Risk 0.00% 0.00% 8.28%

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Recommended Acceptable Concentration	N/A	N/A	N/A

Analyte: Benzo[a]pyrene

CAS: 50-32-8

Concentration mg/kg:	7.60E-01
RfDo (mg/kg-day):	3.00E-04
RfCi (mg/m3):	2.00E-06
SFO (mg/kg-day)-1:	1.00E+00
IUR (µg/m3)-1:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:	3.04E-03	3.24E-02	4.96E-06
Dermal:	1.67E-03	9.99E-03	1.66E-06
Inhalation:	2.68E-04	2.68E-04	3.31E-10
Total:	4.97E-03	4.26E-02	6.62E-06

% Contribution to Media Hazard/Risk 100.00% 100.00% 75.54%

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Exceeds Risk! Recommended Acceptable Concentration	N/A	N/A	1.15E-01

Analyte: Benzo[b]fluoranthene

CAS: 205-99-2

Concentration mg/kg:	9.98E-01
RfDo (mg/kg-day):	
RfCi (mg/m3):	
SFO (mg/kg-day)-1:	1.00E-01
IUR (µg/m3)-1:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:			6.52E-07
Dermal:			2.17E-07
Inhalation:			4.34E-11
Total:	0.00E+00	0.00E+00	8.69E-07

% Contribution to Media Hazard/Risk 0.00% 0.00% 9.92%

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Soil

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Recommended Acceptable Concentration	N/A	N/A	N/A

Analyte: Dibenz[a,h]anthracene

CAS: 53-70-3

Concentration mg/kg:	4.50E-02
RfDo (mg/kg-day):	
RfCi (mg/m3):	
SFO (mg/kg-day)-1:	1.00E+00
IUR (µg/m3)-1:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:			2.94E-07
Dermal:			9.81E-08
Inhalation:			1.96E-11
Total:	0.00E+00	0.00E+00	3.92E-07

% Contribution to Media Hazard/Risk 0.00% 0.00% 4.47%

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Recommended Acceptable Concentration	N/A	N/A	N/A

Analyte: Indeno[1,2,3-cd]pyrene

CAS: 193-39-5

Concentration mg/kg:	1.80E-01
RfDo (mg/kg-day):	
RfCi (mg/m3):	
SFO (mg/kg-day)-1:	1.00E-01
IUR (µg/m3)-1:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:			1.18E-07
Dermal:			3.92E-08
Inhalation:			7.83E-12
Total:	0.00E+00	0.00E+00	1.57E-07

% Contribution to Media Hazard/Risk 0.00% 0.00% 1.79%

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Recommended Acceptable Concentration	N/A	N/A	N/A

Total Calculated Hazard Index/Risk For Media:

Soil

Non-Cancer Adult

Ingestion: 3.04E-03
Dermal: 1.67E-03
Inhalation: 2.68E-04
Total: 4.97E-03

Non-Cancer Child

Ingestion: 3.24E-02
Dermal: 9.99E-03
Inhalation: 2.68E-04
Total: 4.26E-02

Cancer

Ingestion: 6.56E-06
Dermal: 2.19E-06
Inhalation: 1.14E-08
Total: 8.76E-06

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Ingestion: 3.04E-03
Dermal: 1.67E-03
Inhalation: 2.68E-04

Total: 4.97E-03

does not exceed hazard index

Non-Cancer Child

Ingestion: 3.24E-02
Dermal: 9.99E-03
Inhalation: 2.68E-04

Total: 4.26E-02

does not exceed hazard index

Cancer

Ingestion: 6.56E-06
Dermal: 2.19E-06
Inhalation: 1.14E-08

Total: 8.76E-06

Exceeds Cumulative Risk!

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

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Exposure Defaults Follow

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Residential Exposure Default Values

Symbol	Description	Value	Units
AF0-02	Soil Adherence Factor - age segment 0-2	0.2	(mg/cm ²)
AF02-06	Soil Adherence Factor - age segment 2-6	0.2	(mg/cm ²)
AF06-16	Soil Adherence Factor - age segment 6-16	0.07	(mg/cm ²)
AF16-26	Soil Adherence Factor - age segment 16-26	0.07	(mg/cm ²)
AFres-a	Resident Soil Adherence Factor - adult	0.07	(mg/cm ²)
AFres-c	Resident Soil Adherence Factor - child	0.2	(mg/cm ²)
ATr	Resident Averaging Time	365	(days/yr)
ATres	Resident Averaging Time: 365 x LT	25550	(days)
ATres-a	Resident Averaging Time - adult: 365 x EDres	9490	(days)
ATres-c	Resident Averaging Time - child: 365 x EDres-c	2190	(days)
BW0-02	Body Weight - age segment 0-2	15	(kg)
BW02-06	Body Weight - age segment 2-6	15	(kg)
BW06-16	Body Weight - age segment 6-16	80	(kg)
BW16-26	Body Weight - age segment 16-26	80	(kg)
BWres-a	Resident Body Weight - adult	80	(kg)
BWres-c	Resident Body Weight - child	15	(kg)
DFSMres-adj	Resident Soil Mutagenic Dermal Contact Factor - age adjusted	428260	(mg/kg)
DFSres-adj	Resident Soil Dermal Contact Factor - age adjusted	103390	(mg/kg)
DFWMres-adj	Resident Groundwater Mutagenic Dermal Contact Factor - age adjusted	8191633.33333333	(cm ² -event/kg)
DFWres-adj	Resident Groundwater Dermal Contact Factor - age adjusted	2610650	(cm ² -event/kg)
ED0-02	Exposure Duration - age segment 0-2	2	(yrs)
ED02-06	Exposure Duration - age segment 2-6	4	(yrs)
ED06-16	Exposure Duration -age segment 6-16	10	(yrs)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

ED16-26	Exposure Duration -age segment 16-26		10 (yrs)
EDres	Resident Total Exposure Duration		26 (yrs)
EDres-a	Resident Exposure Duration - adult		20 (yrs)
EDres-c	Resident Exposure Duration - child		6 (yrs)
EFres	Resident Exposure Frequency		350 (days/yr)
EFres0-02	Resident Exposure Frequency - age segment 0-2		350 (days/yr)
EFres02-06	Resident Exposure Frequency - age segment 2-6		350 (days/yr)
EFres06-16	Resident Exposure Frequency - age segment 6-16		350 (days/yr)
EFres16-26	Resident Exposure Frequency - age segment 16-26		350 (days/yr)
EFres-a	Resident Exposure Frequency - adult		350 (days/yr)
EFres-c	Resident Exposure Frequency - child		350 (days/yr)
ETevent-res(0-02)	Resident Water Exposure Time - age segment 0-2		0.54 (hrs/event)
ETevent-res(02-06)	Resident Water Exposure Time - age segment 2-6		0.54 (hrs/event)
ETevent-res(06-16)	Resident Water Exposure Time - age segment 6-16		0.71 (hrs/event)
ETevent-res(16-26)	Resident Water Exposure Time - age segment 16-26		0.71 (hrs/event)
ETevent-res-a	Resident Groundwater Exposure Time -adult		0.71 (hrs/event)
ETevent-res-adj	Resident Water Exposure Time -age adjusted	0.670769230769231	(hrs/event)
ETevent-res-c	Resident Groundwater Exposure Time - child		0.54 (hrs/event)
ETevent-res-madj	Resident Water Exposure Time - mutagen age adjusted	0.670769230769231	(hrs/event)
ETrai	Resident Air Inhalation Exposure Time		24 (hrs/day)
ETres	Resident Soil Exposure Time		24 (hrs/day)
ETres0-02	Resident Exposure Time - age segment 0-2		24 (hrs/day)
ETres02-06	Resident Exposure Time - age segment 2-6		24 (hrs/day)
ETres06-16	Resident Exposure Time - age segment 6-16		24 (hrs/day)
ETres16-26	Resident Exposure Time - age segment 16-26		24 (hrs/day)
ETres-a	Resident Exposure Time - adult		24 (hrs/day)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

ETres-c	Resident Exposure Time - child	24 (hrs/day)
ETres-gwi	Resident Groundwater Inhalation Exposure Time	24 (hrs/day)
EVres-a	Resident Groundwater Events - adult	1 (events/day)
EVres-c	Resident Groundwater Events - child	1 (events/day)
IFSMres-adj	Resident Mutagenic Soil Ingestion Rate - age adjusted	166833.333333333 (mg/kg)
IFSres-adj	Resident Soil Ingestion Rate - age adjusted	36750 (mg/kg)
IFWMres-adj	Resident Mutagenic Drinking Groundwater Ingestion Rate - age adjusted	1019.9 (L/kg)
IFWres-adj	Resident Drinking Groundwater Ingestion Rate - age adjusted	327.95 (L/kg)
INHMres-ai-adj	Resident Air Inhalation Exposure Duration Mutagen - age adjusted	604800 (hrs)
INHMres-gw-adj	Resident Groundwater Inhalation Exposure Duration Mutagen - age adjusted	25200 (days)
INHMres-s-adj	Resident Soil Inhalation Exposure Duration Mutagen - age adjusted	25200 (days)
IREres-a	Resident Food Eggs Ingestion Rate - Virginia DEQ	150000 (mg/day)
IRFres-a	Resident Food Fish/Shellfish Ingestion Rate - Exposure Defaults Handbook	54000 (mg/day)
IRFVres-a	Resident Food Fruit/Vegetables Ingestion Rate - Exposure Defaults Handbook	122000 (mg/day)
IRMDres-a	Resident Food Meat/Dairy - Virginia DEQ	280000 (mg/day)
IRS0-02	Soil/Sediment Ingestion Rate - age segment 0-2	200 (mg/day)
IRS02-06	Soil/Sediment Ingestion Rate - age segment 2-6	200 (mg/day)
IRS06-16	Soil/Sediment Ingestion Rate - age segment 6-16	100 (mg/day)
IRS16-26	Soil/Sediment Ingestion Rate - age segment 16-26	100 (mg/day)
IRSres-a	Resident Soil Ingestion Rate - adult	100 (mg/day)
IRSres-c	Resident Soil Ingestion Rate - child	200 (mg/day)
IRW0-02	Drinking Water Ingestion Rate - age segment 0-2	0.78 (L/day)
IRW02-06	Drinking Water Ingestion Rate - age segment 2-6	0.78 (L/day)
IRW06-16	Drinking Water Ingestion Rate - age segment 6-16	2.5 (L/day)
IRW16-26	Drinking Water Ingestion Rate - age segment 16-26	2.5 (L/day)
IRWres-a	Resident Drinking Groundwater Ingestion Rate - adult	2.5 (L/day)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

IRWres-c	Resident Drinking Groundwater Ingestion Rate - child	0.78	(L/day)
SAres-a	Resident Soil Surface Area - adult	6032	(cm2/day)
SAres-a	Resident Water Surface Area - adult	19652	(cm2)
SAres-c	Resident Water Surface Area - child	6365	(cm2)
SAres-c	Resident Soil Surface Area - child	2373	(cm2/day)
SAs0-02	Surface Area Soil/Sediment - age segment 0-2	2373	(cm2/day)
SAs02-06	Surface Area Soil/Sediment - age segment 2-6	2373	(cm2/day)
SAs06-16	Surface Area Soil/Sediment - age segment 6-16	6032	(cm2/day)
SAs16-26	Surface Area Soil/Sediment - age segment 16-26	6032	(cm2/day)
SAw0-02	Surface Area Water - age segment 0-2	6365	(cm2)
SAw02-06	Surface Area Water - age segment 2-6	6365	(cm2)
SAw06-16	Surface Area Water - age segment 6- 16	19652	(cm2)
SAw16-26	Surface Area Water - age segment 16- 26	19652	(cm2)

END OF REPORT

VURAM

Virginia Unified Risk Assessment Model

VERSION: 3.0

Construction Worker Quantitative Risk Assessment Report

Site Name: Former MGP Subsurface Soil

Program: Voluntary Remediation Program

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Total: 2.90E-02

does not exceed hazard index

Cancer

Total: 1.03E-07

does not exceed cumulative risk

Risk Based Performance Criteria

Default Hazard Index

1

Default Cumulative Risk-All Chemicals

1.00E-06

**All Report Pages are Required for Risk Assessment Submission
DETAILED REPORT FOLLOWS**

Site Name: **Bramlette Subsurface**
 Program: **Voluntary Remediation Program**

Construction

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Soil

Analyte: **Benz[a]anthracene**
 CAS: **56-55-3**

Concentration mg/kg:	4.48E+00
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	Y

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	9.04E-09
Dermal:		Dermal:	3.77E-09
Inhalation:		Inhalation:	6.15E-11
Total:	0.00E+00	Total:	1.29E-08

% Contribution to Media Risk

0.00%

12.54%

Analyte: **Benzo[a]pyrene**
 CAS: **50-32-8**

Concentration mg/kg:	2.57E+00
RfDo:	3.00E-04
RfCi:	2.00E-06
SFO:	1.00E+00
IUR:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:	1.26E-02	Ingestion:	5.19E-08
Dermal:	5.26E-03	Dermal:	2.16E-08
Inhalation:	1.02E-02	Inhalation:	1.68E-10
Total:	2.81E-02	Total:	7.37E-08

% Contribution to Media Risk

96.89%

71.86%

Analyte: **Benzo[b]fluoranthene**
 CAS: **205-99-2**

Concentration mg/kg:	3.27E+00
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	6.60E-09
Dermal:		Dermal:	2.75E-09
Inhalation:		Inhalation:	2.12E-11
Total:	0.00E+00	Total:	9.37E-09

% Contribution to Media Risk

0.00%

9.14%

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Soil

Analyte: **Benzo[k]fluoranthene**
 CAS: **207-08-9**

Concentration mg/kg:	1.45E+00
RfDo:	
RfCi:	
SFO:	1.00E-02
IUR:	6.00E-06
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	2.92E-10
Dermal:		Dermal:	1.22E-10
Inhalation:		Inhalation:	9.45E-13
Total:	0.00E+00	Total:	4.15E-10

% Contribution to Media Risk

0.00%

0.40%

Analyte: **Dibenz[a,h]anthracene**
 CAS: **53-70-3**

Concentration mg/kg:	4.12E-02
RfDo:	
RfCi:	
SFO:	1.00E+00
IUR:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	8.32E-10
Dermal:		Dermal:	3.47E-10
Inhalation:		Inhalation:	1.45E-12
Total:	0.00E+00	Total:	1.18E-09

% Contribution to Media Risk

0.00%

1.15%

Analyte: **Indeno[1,2,3-cd]pyrene**
 CAS: **193-39-5**

Concentration mg/kg:	1.32E+00
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	2.67E-09
Dermal:		Dermal:	1.11E-09
Inhalation:		Inhalation:	4.64E-12
Total:	0.00E+00	Total:	3.79E-09

% Contribution to Media Risk

0.00%

3.70%

Site Name: **Bramlette Subsurface**
 Program: **Voluntary Remediation Program**

Construction

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Soil

Analyte: **Naphthalene**

CAS: **91-20-3**

Concentration mg/kg:	4.59E+00
RfDo:	6.00E-01
RfCi:	3.00E-03
SFO:	
IUR:	3.40E-05
Mutagen:	
VOC:	Y

Calculated Hazard Quotient/Risk

Non-Cancer Adult

Ingestion: 1.13E-05
 Dermal: 4.70E-06
 Inhalation: 8.87E-04
Total: 9.03E-04

Cancer

Ingestion:
 Dermal:
 Inhalation: 1.24E-09
Total: 1.24E-09

% Contribution to Media Risk

3.11%

1.21%

Total Calculated Hazard Index/Risk For Media:

Soil

Non-Cancer Adult

Ingestion: 1.26E-02
 Dermal: 5.27E-03
 Inhalation: 1.11E-02
Total: 2.90E-02

Cancer

Ingestion: 7.13E-08
 Dermal: 2.97E-08
 Inhalation: 1.50E-09
Total: 1.03E-07

Site Name: **Bramlette Subsurface**
Program: **Voluntary Remediation Program**

Construction

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Ingestion: 1.26E-02
Dermal: 5.27E-03
Inhalation: 1.11E-02
Total: 2.90E-02

does not exceed hazard index

Cancer

Ingestion: 7.13E-08
Dermal: 2.97E-08
Inhalation: 1.50E-09
Total: 1.03E-07

does not exceed cumulative risk

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Construction Exposure Default Values

Symbol	Description	Value	Units
A	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	14.0111	(unitless)
AFcw	Construction Worker Soil Adherence Factor	0.3	(mg/cm ²)
As	Areal extent of the site or contamination	0.5	(acres)
ATcw	Construction Worker Averaging Time: 365 x LT	25550	(days)
ATcw	Construction Worker Averaging Time	365	(days/yr)
ATcw-a	Construction Worker Averaging Time: EWcw x 7 x EDcw	350	(days)
B	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	19.6154	(unitless)
BWcw	Construction Worker Body Weight	80	(kg)
C	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	225.3397	(unitless)
DWcw	Construction Worker Days Worked	5	(days/week)
EDcw	Construction Worker Exposure Duration	1	(yrs)
EFcw	Construction Worker Exposure Frequency	250	(days/yrs)
EFcw-a	Construction Worker Air Exposure Frequency	250	(days/yr)
EFcw-s	Construction Worker Soil Exposure Frequency	250	(days/yr)
EFcw-vrp	Construction Worker Soil Exposure Frequency - VRP ONLY - Virginia DEQ	125	(days/yr)
ETcw	Construction Worker Exposure Time	8	(hrs/day)
ETcw-s	Construction Worker Soil Exposure Time	8	(hrs/day)
EWcw	Construction Worker Weeks Worked	50	(weeks/yr)
F(x)	Function Dependent on $0.886 \times (Ut/U_m)$	0.194	(unitless)
Fd	Dispersion Correction Factor	0.185	(unitless)
IRcw	Construction Worker Soil Ingestion Rate	330	(mg/day)
n	Total soil porosity: $1-(\rho_b/\rho_s)$	0.433962264150943	(unitless)
PEFsc	Particulate Emission Factor Subchronic - Virginia DEQ calculated	1266503136.97919	(m ³ /kg)

Site Name: Bramlette Subsurface
Program: Voluntary Remediation Program

Construction

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

Q/C	Inverse of the ratio of the 1-h geometric mean concentration to the emission flux along a straight road segment bisecting a square site - Virginia DEQ	87.3689772162309	(g/m ² -s per kg/m)
SACw	Construction Worker Surface Area	3527	(cm ² /day)
Tc	Total time over which construction occurs: EDcw*EWcw*7days/wk*24hrs/day*3600s/hr	30240000	(s)
TR-ACH	Trench Air Changes per Hour - Virginia DEQ	2	(h)-1
TR-ACvad	Trench Advection Coefficient Groundwater greater than 15ft - Virginia DEQ	0.25	(cm ³ /cm ³)
TR-CF1	Trench Conversion Factor-1	0.001	(L/cm ³)
TR-CF2	Trench Conversion Factor-2	10000	(cm ² /m ²)
TR-CF3	Trench Conversion Factor-3	3600	(s/hr)
TR-CF4	Trench Conversion Factor-4	1000000	(cm ³ /m ³)
TR-D-dir	Trench Depth - groundwater less Than 15ft - Virginia DEQ	2.44	(m)
TR-D-ind	Trench Depth - groundwater greater than 15ft - Virginia DEQ	4.57	(m)
TR-Dsg	Trench - Depth to soil gas vapor source - Virginia DEQ	1	(cm)
TR-EFcw	Trench Construction Worker Exposure Frequency - Virginia DEQ	125	(days/yr)
TR-ETcw	Trench Construction Worker Exposure Time - Virginia DEQ	4	(hrs/day)
TR-EVcw	Trench Construction Worker Events - Virginia DEQ	1	(events/day)
TR-F	Trench Fraction of floor through which contaminant can enter - Virginia DEQ	1	(unitless)
TR-HV	Trench Thickness of Vadose Zone - groundwater greater than 15 ft - Virginia DEQ	30	(cm)
TR-IRcw	Trench Construction Worker Groundwater Ingestion Rate - Virginia DEQ	0.02	(L/day)
TR-KGH2O	Trench Gas-phase mass transfer coefficient of water vapor at 25deg C - Virginia DEQ	0.833	(cm/s)
TR-KLO2	Trench Liquid-phase mass transfer coefficient of oxygen at 25deg C - Virginia DEQ	0.002	(cm/s)
TR-L	Trench Length - Virginia DEQ	2.44	(m)
TR-Lgw	Trench Depth to groundwater - Virginia DEQ	488	(cm)
TR-MWH2O	Trench Molecular Weight of Water - Virginia DEQ	18	(unitless)
TR-MWO2	Trench Molecular Weight of Oxygen - Virginia DEQ	32	(unitless)
TR-Porvad	Trench Porosity in Vadose Zone - groundwater greater than 15ft - Virginia DEQ	0.44	(cm ³ /cm ³)
TR-R	Trench Ideal Gas Constant - Virginia DEQ	0.000082	(atm-m ³ /mol-K)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-04

TR-Temp-F	Trench Temperature Fahrenheit - Virginia DEQ	77 (F)
TR-Temp-K	Trench Temperature - Virginia DEQ	298 (K)
TR-W	Trench Width - Virginia DEQ	0.91 (m)
TR-W/D	Trench Width to Depth Ratio - Virginia DEQ	0.38 (unitless)
Um	Mean Annual Wind Speed	4.69 (m/s)
Ut	Equivalent Threshold Value of Wind Speed at 7m	11.32 (m/s)
V	V Fraction of Vegetative Cover	0.5 (unitless)
Θa	Air filled soil porosity: n-Θw	0.133962264150943 (unitless)
Θw	Water filled soil porosity	0.3 (unitless)
ρb	Dry soil bulk density	1.5 (kg/L)
ρs	Soil particle density	2.65 (kg/L)

END OF REPORT

VURAM

Virginia Unified Risk Assessment Model

VERSION: 3.0

Construction Worker Quantitative Risk Assessment Report

Site Name: Former MGP Surface Soil

Program: Voluntary Remediation Program

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Total: 8.30E-03

does not exceed hazard index

Cancer

Total: 2.88E-08

does not exceed cumulative risk

Risk Based Performance Criteria

Default Hazard Index

1

Default Cumulative Risk-All Chemicals

1.00E-06

All Report Pages are Required for Risk Assessment Submission

DETAILED REPORT FOLLOWS

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk Individual Chemical
1.00E-06

Default Cumulative Risk-All Chemicals
1.00E-06

Soil

Analyte: **Benz[a]anthracene**
 CAS: **56-55-3**

Concentration mg/kg:	8.20E-01
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	Y

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	1.65E-09
Dermal:		Dermal:	6.90E-10
Inhalation:		Inhalation:	1.13E-11
Total:	0.00E+00	Total:	2.36E-09

% Contribution to Media Risk

0.00%

8.18%

Analyte: **Benzo[a]pyrene**
 CAS: **50-32-8**

Concentration mg/kg:	7.60E-01
RfDo:	3.00E-04
RfCi:	2.00E-06
SFO:	1.00E+00
IUR:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:	3.73E-03	Ingestion:	1.53E-08
Dermal:	1.56E-03	Dermal:	6.39E-09
Inhalation:	3.01E-03	Inhalation:	4.95E-11
Total:	8.30E-03	Total:	2.18E-08

% Contribution to Media Risk

100.00%

75.63%

Analyte: **Benzo[b]fluoranthene**
 CAS: **205-99-2**

Concentration mg/kg:	9.98E-01
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	2.01E-09
Dermal:		Dermal:	8.40E-10
Inhalation:		Inhalation:	6.46E-12
Total:	0.00E+00	Total:	2.86E-09

% Contribution to Media Risk

0.00%

9.93%

Site Name: Former MGP

Construction

Program: Voluntary Remediation Program

Risk Based Performance Criteria

Default Hazard Index

Default Risk Individual Chemical

Default Cumulative Risk-All Chemicals

1

1.00E-06

1.00E-06

Soil

Analyte: Dibenzo[a,h]anthracene

CAS: 53-70-3

Concentration mg/kg:	4.50E-02
RfDo:	
RfCi:	
SFO:	1.00E+00
IUR:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	9.08E-10
Dermal:		Dermal:	3.79E-10
Inhalation:		Inhalation:	1.58E-12
Total:	0.00E+00	Total:	1.29E-09

% Contribution to Media Risk

0.00%

4.47%

Analyte: Indeno[1,2,3-cd]pyrene

CAS: 193-39-5

Concentration mg/kg:	1.80E-01
RfDo:	
RfCi:	
SFO:	1.00E-01
IUR:	6.00E-05
Mutagen:	Y
VOC:	

Calculated Hazard Quotient/Risk

Non-Cancer Adult		Cancer	
Ingestion:		Ingestion:	3.63E-10
Dermal:		Dermal:	1.51E-10
Inhalation:		Inhalation:	6.30E-13
Total:	0.00E+00	Total:	5.15E-10

% Contribution to Media Risk

0.00%

1.79%

Total Calculated Hazard Index/Risk For Media:

Soil

Non-Cancer Adult

Ingestion:	3.73E-03
Dermal:	1.56E-03
Inhalation:	3.01E-03
Total:	8.30E-03

Cancer

Ingestion:	2.03E-08
Dermal:	8.45E-09
Inhalation:	6.95E-11
Total:	2.88E-08

Site Name: Former MGP

Construction

Program: Voluntary Remediation Program

Risk Based Performance Criteria

Default Hazard Index

Default Risk Individual Chemical

Default Cumulative Risk-All Chemicals

1

1.00E-06

1.00E-06

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Ingestion: 3.73E-03

Dermal: 1.56E-03

Inhalation: 3.01E-03

Total: 8.30E-03

does not exceed hazard index

Cancer

Ingestion: 2.03E-08

Dermal: 8.45E-09

Inhalation: 6.95E-11

Total: 2.88E-08

does not exceed cumulative risk

Construction Exposure Default Values

Symbol	Description	Value	Units
A	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	14.0111	(unitless)
AFcw	Construction Worker Soil Adherence Factor	0.3	(mg/cm ²)
As	Areal extent of the site or contamination	0.5	(acres)
ATcw	Construction Worker Averaging Time: 365 x LT	25550	(days)
ATcw	Construction Worker Averaging Time	365	(days/yr)
ATcw-a	Construction Worker Averaging Time: EWcw x 7 x EDcw	350	(days)
B	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	19.6154	(unitless)
BWcw	Construction Worker Body Weight	80	(kg)
C	Construction Worker Soil Inhalation Dispersion Constant - Philadelphia	225.3397	(unitless)
DWcw	Construction Worker Days Worked	5	(days/week)
EDcw	Construction Worker Exposure Duration	1	(yrs)
EFcw	Construction Worker Exposure Frequency	250	(days/yrs)
EFcw-a	Construction Worker Air Exposure Frequency	250	(days/yr)
EFcw-s	Construction Worker Soil Exposure Frequency	250	(days/yr)
EFcw-vrp	Construction Worker Soil Exposure Frequency - VRP ONLY - Virginia DEQ	125	(days/yr)
ETcw	Construction Worker Exposure Time	8	(hrs/day)
ETcw-s	Construction Worker Soil Exposure Time	8	(hrs/day)
EWcw	Construction Worker Weeks Worked	50	(weeks/yr)
F(x)	Function Dependent on $0.886 \times (U_t/U_m)$	0.194	(unitless)
Fd	Dispersion Correction Factor	0.185	(unitless)
IRcw	Construction Worker Soil Ingestion Rate	330	(mg/day)
n	Total soil porosity: $1-(\rho_b/\rho_s)$	0.433962264150943	(unitless)
PEFsc	Particulate Emission Factor Subchronic - Virginia DEQ calculated	1266503136.97919	(m ³ /kg)

Program: Voluntary Remediation Program

Risk Based Performance Criteria

Default Hazard Index

Default Risk Individual Chemical

Default Cumulative Risk-All Chemicals

1

1.00E-06

1.00E-06

Q/C	Inverse of the ratio of the 1-h geometric mean concentration to the emission flux along a straight road segment bisecting a square site - Virginia DEQ calculated	87.3689772162309	(g/m ² -s per kg/m)
SACw	Construction Worker Surface Area	3527	(cm ² /day)
Tc	Total time over which construction occurs: EDcw*EWcw*7days/wk*24hrs/day*3600s/hr	30240000	(s)
TR-ACH	Trench Air Changes per Hour - Virginia DEQ	2	(h)-1
TR-ACvad	Trench Advection Coefficient Groundwater greater than 15ft - Virginia DEQ	0.25	(cm ³ /cm ³)
TR-CF1	Trench Conversion Factor-1	0.001	(L/cm ³)
TR-CF2	Trench Conversion Factor-2	10000	(cm ² /m ²)
TR-CF3	Trench Conversion Factor-3	3600	(s/hr)
TR-CF4	Trench Conversion Factor-4	1000000	(cm ³ /m ³)
TR-D-dir	Trench Depth - groundwater less Than 15ft - Virginia DEQ	2.44	(m)
TR-D-ind	Trench Depth - groundwater greater than 15ft - Virginia DEQ	4.57	(m)
TR-Dsg	Trench - Depth to soil gas vapor source - Virginia DEQ	1	(cm)
TR-EFcw	Trench Construction Worker Exposure Frequency - Virginia DEQ	125	(days/yr)
TR-ETcw	Trench Construction Worker Exposure Time - Virginia DEQ	4	(hrs/day)
TR-EVcw	Trench Construction Worker Events - Virginia DEQ	1	(events/day)
TR-F	Trench Fraction of floor through which contaminant can enter - Virginia DEQ	1	(unitless)
TR-HV	Trench Thickness of Vadose Zone - groundwater greater than 15 ft - Virginia DEQ	30	(cm)
TR-IRcw	Trench Construction Worker Groundwater Ingestion Rate - Virginia DEQ	0.02	(L/day)
TR-KGH2O	Trench Gas-phase mass transfer coefficient of water vapor at 25deg C - Virginia DEQ	0.833	(cm/s)
TR-KLO2	Trench Liquid-phase mass transfer coefficient of oxygen at 25deg C - Virginia DEQ	0.002	(cm/s)
TR-L	Trench Length - Virginia DEQ	2.44	(m)
TR-Lgw	Trench Depth to groundwater - Virginia DEQ	488	(cm)
TR-MWH2O	Trench Molecular Weight of Water - Virginia DEQ	18	(unitless)
TR-MWO2	Trench Molecular Weight of Oxygen - Virginia DEQ	32	(unitless)
TR-Porvad	Trench Porosity in Vadose Zone - groundwater greater than 15ft - Virginia DEQ	0.44	(cm ³ /cm ³)
TR-R	Trench Ideal Gas Constant - Virginia DEQ	0.000082	(atm-m ³ /mol-K)

TR-Temp-F	Trench Temperature Fahrenheit - Virginia DEQ	77 (F)
TR-Temp-K	Trench Temperature - Virginia DEQ	298 (K)
TR-W	Trench Width - Virginia DEQ	0.91 (m)
TR-W/D	Trench Width to Depth Ratio - Virginia DEQ	0.38 (unitless)
Um	Mean Annual Wind Speed	4.69 (m/s)
Ut	Equivalent Threshold Value of Wind Speed at 7m	11.32 (m/s)
V	V Fraction of Vegetative Cover	0.5 (unitless)
Θa	Air filled soil porosity: n-Θw	0.133962264150943 (unitless)
Θw	Water filled soil porosity	0.3 (unitless)
ρb	Dry soil bulk density	1.5 (kg/L)
ρs	Soil particle density	2.65 (kg/L)

END OF REPORT

ATTACHMENT 2B

RESIDENTIAL VURAM BAP POST-SOIL REMOVAL OUTPUT AND DEFAULT EXPOSURE FACTORS

VURAM

Virginia Unified Risk Assessment Model

VERSION: 3.0

Residential Quantitative Risk Assessment Report

Total Hazard Index/Risk for All Media

Program: Voluntary Remediation Program (VRP)

Site Name: Former MGP Surface Soil

Non-Cancer Adult

Total: 6.74E-04

does not exceed hazard index

Non-Cancer Child

Total: 5.78E-03

does not exceed hazard index

Cancer

Total: 8.97E-07

does not exceed cumulative risk

Risk Based Performance Criteria

Default Hazard Index

1

Default Cumulative Risk-All Chemicals

1.00E-06

**All Report Pages are Required for Risk Assessment Submission
DETAILED REPORT FOLLOWS**

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Soil

Analyte: Benzo[a]pyrene

CAS: 50-32-8

Concentration mg/kg:	1.03E-01
RfDo (mg/kg-day):	3.00E-04
RfCi (mg/m3):	2.00E-06
SFO (mg/kg-day)-1:	1.00E+00
IUR (µg/m3)-1:	6.00E-04
Mutagen:	Y
VOC:	

Calculated Hazard Index/Risk

	Non-Cancer Adult	Non-Cancer Child	Cancer
Ingestion:	4.12E-04	4.39E-03	6.73E-07
Dermal:	2.26E-04	1.35E-03	2.24E-07
Inhalation:	3.63E-05	3.63E-05	4.48E-11
Total:	6.74E-04	5.78E-03	8.97E-07

% Contribution to Media Hazard/Risk 100.00% 100.00% 100.00%

	mg/kg Non-Cancer Adult	Non-Cancer Child	Cancer
Recommended Acceptable Concentration	N/A	N/A	N/A

Total Calculated Hazard Index/Risk For Media:

Soil

Non-Cancer Adult

Ingestion: 4.12E-04
Dermal: 2.26E-04
Inhalation: 3.63E-05
Total: 6.74E-04

Non-Cancer Child

Ingestion: 4.39E-03
Dermal: 1.35E-03
Inhalation: 3.63E-05
Total: 5.78E-03

Cancer

Ingestion: 6.73E-07
Dermal: 2.24E-07
Inhalation: 4.48E-11
Total: 8.97E-07

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Total Hazard Index/Risk for All Media

Non-Cancer Adult

Ingestion: 4.12E-04
Dermal: 2.26E-04
Inhalation: 3.63E-05

Total: 6.74E-04

does not exceed hazard index

Non-Cancer Child

Ingestion: 4.39E-03
Dermal: 1.35E-03
Inhalation: 3.63E-05

Total: 5.78E-03

does not exceed hazard index

Cancer

Ingestion: 6.73E-07
Dermal: 2.24E-07
Inhalation: 4.48E-11

Total: 8.97E-07

does not exceed cumulative risk

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

1

Default Risk for Individual Chemical

1.00E-06

Default Cumulative Risk (All Chemicals)

1.00E-06

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Exposure Defaults Follow

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index
1

Default Risk for Individual Chemical
1.00E-06

Default Cumulative Risk (All Chemicals)
1.00E-06

Residential Exposure Default Values

Symbol	Description	Value	Units
AF0-02	Soil Adherence Factor - age segment 0-2	0.2	(mg/cm2)
AF02-06	Soil Adherence Factor - age segment 2-6	0.2	(mg/cm2)
AF06-16	Soil Adherence Factor - age segment 6-16	0.07	(mg/cm2)
AF16-26	Soil Adherence Factor - age segment 16-26	0.07	(mg/cm2)
AFres-a	Resident Soil Adherence Factor - adult	0.07	(mg/cm2)
AFres-c	Resident Soil Adherence Factor - child	0.2	(mg/cm2)
ATr	Resident Averaging Time	365	(days/yr)
ATres	Resident Averaging Time: 365 x LT	25550	(days)
ATres-a	Resident Averaging Time - adult: 365 x EDres	9490	(days)
ATres-c	Resident Averaging Time - child: 365 x EDres-c	2190	(days)
BW0-02	Body Weight - age segment 0-2	15	(kg)
BW02-06	Body Weight - age segment 2-6	15	(kg)
BW06-16	Body Weight - age segment 6-16	80	(kg)
BW16-26	Body Weight - age segment 16-26	80	(kg)
BWres-a	Resident Body Weight - adult	80	(kg)
BWres-c	Resident Body Weight - child	15	(kg)
DFSMres-adj	Resident Soil Mutagenic Dermal Contact Factor - age adjusted	428260	(mg/kg)
DFSres-adj	Resident Soil Dermal Contact Factor - age adjusted	103390	(mg/kg)
DFWMres-adj	Resident Groundwater Mutagenic Dermal Contact Factor - age adjusted	8191633.33333333	(cm2-event/kg)
DFWres-adj	Resident Groundwater Dermal Contact Factor - age adjusted	2610650	(cm2-event/kg)
ED0-02	Exposure Duration - age segment 0-2	2	(yrs)
ED02-06	Exposure Duration - age segment 2-6	4	(yrs)
ED06-16	Exposure Duration -age segment 6-16	10	(yrs)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

ED16-26	Exposure Duration -age segment 16-26		10 (yrs)
EDres	Resident Total Exposure Duration		26 (yrs)
EDres-a	Resident Exposure Duration - adult		20 (yrs)
EDres-c	Resident Exposure Duration - child		6 (yrs)
EFres	Resident Exposure Frequency		350 (days/yr)
EFres0-02	Resident Exposure Frequency - age segment 0-2		350 (days/yr)
EFres02-06	Resident Exposure Frequency - age segment 2-6		350 (days/yr)
EFres06-16	Resident Exposure Frequency - age segment 6-16		350 (days/yr)
EFres16-26	Resident Exposure Frequency - age segment 16-26		350 (days/yr)
EFres-a	Resident Exposure Frequency - adult		350 (days/yr)
EFres-c	Resident Exposure Frequency - child		350 (days/yr)
ETevent-res(0-02)	Resident Water Exposure Time - age segment 0-2		0.54 (hrs/event)
ETevent-res(02-06)	Resident Water Exposure Time - age segment 2-6		0.54 (hrs/event)
ETevent-res(06-16)	Resident Water Exposure Time - age segment 6-16		0.71 (hrs/event)
ETevent-res(16-26)	Resident Water Exposure Time - age segment 16-26		0.71 (hrs/event)
ETevent-res-a	Resident Groundwater Exposure Time -adult		0.71 (hrs/event)
ETevent-res-adj	Resident Water Exposure Time -age adjusted	0.670769230769231	(hrs/event)
ETevent-res-c	Resident Groundwater Exposure Time - child		0.54 (hrs/event)
ETevent-res-madj	Resident Water Exposure Time - mutagen age adjusted	0.670769230769231	(hrs/event)
ETrai	Resident Air Inhalation Exposure Time		24 (hrs/day)
ETres	Resident Soil Exposure Time		24 (hrs/day)
ETres0-02	Resident Exposure Time - age segment 0-2		24 (hrs/day)
ETres02-06	Resident Exposure Time - age segment 2-6		24 (hrs/day)
ETres06-16	Resident Exposure Time - age segment 6-16		24 (hrs/day)
ETres16-26	Resident Exposure Time - age segment 16-26		24 (hrs/day)
ETres-a	Resident Exposure Time - adult		24 (hrs/day)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

ETres-c	Resident Exposure Time - child	24 (hrs/day)
ETres-gwi	Resident Groundwater Inhalation Exposure Time	24 (hrs/day)
EVres-a	Resident Groundwater Events - adult	1 (events/day)
EVres-c	Resident Groundwater Events - child	1 (events/day)
IFSMres-adj	Resident Mutagenic Soil Ingestion Rate - age adjusted	166833.333333333 (mg/kg)
IFSres-adj	Resident Soil Ingestion Rate - age adjusted	36750 (mg/kg)
IFWMres-adj	Resident Mutagenic Drinking Groundwater Ingestion Rate - age adjusted	1019.9 (L/kg)
IFWres-adj	Resident Drinking Groundwater Ingestion Rate - age adjusted	327.95 (L/kg)
INHMres-ai-adj	Resident Air Inhalation Exposure Duration Mutagen - age adjusted	604800 (hrs)
INHMres-gw-adj	Resident Groundwater Inhalation Exposure Duration Mutagen - age adjusted	25200 (days)
INHMres-s-adj	Resident Soil Inhalation Exposure Duration Mutagen - age adjusted	25200 (days)
IREres-a	Resident Food Eggs Ingestion Rate - Virginia DEQ	150000 (mg/day)
IRFres-a	Resident Food Fish/Shellfish Ingestion Rate - Exposure Defaults Handbook	54000 (mg/day)
IRFVres-a	Resident Food Fruit/Vegetables Ingestion Rate - Exposure Defaults Handbook	122000 (mg/day)
IRMDres-a	Resident Food Meat/Dairy - Virginia DEQ	280000 (mg/day)
IRS0-02	Soil/Sediment Ingestion Rate - age segment 0-2	200 (mg/day)
IRS02-06	Soil/Sediment Ingestion Rate - age segment 2-6	200 (mg/day)
IRS06-16	Soil/Sediment Ingestion Rate - age segment 6-16	100 (mg/day)
IRS16-26	Soil/Sediment Ingestion Rate - age segment 16-26	100 (mg/day)
IRSres-a	Resident Soil Ingestion Rate - adult	100 (mg/day)
IRSres-c	Resident Soil Ingestion Rate - child	200 (mg/day)
IRW0-02	Drinking Water Ingestion Rate - age segment 0-2	0.78 (L/day)
IRW02-06	Drinking Water Ingestion Rate - age segment 2-6	0.78 (L/day)
IRW06-16	Drinking Water Ingestion Rate - age segment 6-16	2.5 (L/day)
IRW16-26	Drinking Water Ingestion Rate - age segment 16-26	2.5 (L/day)
IRWres-a	Resident Drinking Groundwater Ingestion Rate - adult	2.5 (L/day)

Program: Voluntary Remediation Program (VRP)

Risk Based Performance Criteria

Default Hazard Index

Default Risk for Individual Chemical

Default Cumulative Risk (All Chemicals)

1

1.00E-06

1.00E-06

IRWres-c	Resident Drinking Groundwater Ingestion Rate - child	0.78	(L/day)
SAres-a	Resident Soil Surface Area - adult	6032	(cm2/day)
SAres-a	Resident Water Surface Area - adult	19652	(cm2)
SAres-c	Resident Water Surface Area - child	6365	(cm2)
SAres-c	Resident Soil Surface Area - child	2373	(cm2/day)
SAs0-02	Surface Area Soil/Sediment - age segment 0-2	2373	(cm2/day)
SAs02-06	Surface Area Soil/Sediment - age segment 2-6	2373	(cm2/day)
SAs06-16	Surface Area Soil/Sediment - age segment 6-16	6032	(cm2/day)
SAs16-26	Surface Area Soil/Sediment - age segment 16-26	6032	(cm2/day)
SAw0-02	Surface Area Water - age segment 0-2	6365	(cm2)
SAw02-06	Surface Area Water - age segment 2-6	6365	(cm2)
SAw06-16	Surface Area Water - age segment 6- 16	19652	(cm2)
SAw16-26	Surface Area Water - age segment 16- 26	19652	(cm2)

END OF REPORT

ATTACHMENT 3
BORING LOGS

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: SA-SB-46
PROJECT NO: 1026.800	STARTED: 11/14/19 COMPLETED: 11/14/19
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Sonic	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 4 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 6.0 ft BGS
NOTES:	LOGGED BY: T. King CHECKED BY: TCK

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
0		OL	TOPSOIL; organic soil, dark brown-orange, moist.					
0.5			FILL; Brick debris.		4.5		0.0	 Grout (bentonite cement)
1.5			FILL; Wood debris.					
2.5			FILL; Concrete / metal debris.					
3.5			FILL; Wood debris.					
6.0			Borehole terminated at 6 feet bgs. No odor, no visible staining.					
10								
15								
20								
25								
30								
35								
40								
45								

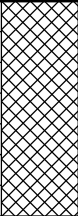



LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 4/16/20

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-13
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		ML	FILL; SILT, sandy, lean clay with sand; Dark yellow brown (10YR 4/6), very dark gray (5Y 3/1), red (2.5YR 5/6), and light gray (N7); moist; organic matter; some gravel; wood debris; micaceous		4.0			
5		SM	FILL; SAND with silt Reddish brown (5YR 4/4); wet; some wood fragments; sand is fine to large grained					
10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray (10YR 4/1); wet; little very fine sand Bottom of boring 8' bls		3.0			
15								
20								
25								
30								
35								
40								
45								

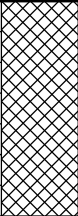



LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-14
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		ML	FILL; SILT, sandy, lean clay with sand and gravel Dark yellow brown (10YR 4/6), dark gray (10YR 4/1), light gray (N7), and red (2.5YR 5/6); organic debris; moist to wet		4.0			
10		CL	ALLUVIUM; CLAY, lean, organics and sand; Very dark gray (5Y 3/1); decaying organic matter; transitions to red brown (5YR 4/4); fine grained, micaceous, wet Bottom of boring 8' bls		2.5			
15								
20								
25								
30								
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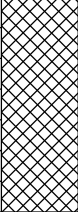



LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-15
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		ML	FILL; SILT, sandy, lean clay; Red (2.5YR 5/6), dark gray (10YR 4/1), and dark yellow brown; gravel and woody debris; moist to wet		2.0			
10		CL	ALLUVIUM; CLAY, lean, sand; Reddish brown (5YR 4/4); wet; sand is fine grained; micaceous Bottom of boring 8' bls		1.5			
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LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-16
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty Red brown (5YR 4/4); moist to wet; few gravel and wood fragments; micaceous		3.0			
10		CL	ALLUVIUM; CLAY, lean, silty Dark gray (10YR 4/1); wet; little very fine sand Bottom of boring 8' bls		2.0			
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LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-17
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5	[Cross-hatched pattern]	SM	FILL; SAND, silty; Brown (7.5YR 5/2) to red (2.5YR 4/8); some lean clay; organic material, some small gravel; moist to wet	[Dotted pattern]	2.0			
10		SPG	FILL; SAND, silty with gravel; Red (2.5YR 4/8); lean clay; gravel small to medium; wet Bottom of boring 8' bls	[Dotted pattern]	2.5			
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LOG.D - VI DEC BRAMLETTE.GPJ_GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-18
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5	[Cross-hatched pattern]	SM	FILL; SAND, silty with some gravel; Brown (7.5YR 5/2) to Red (2.5YR 4/8); moist to wet	[Dotted pattern]	2.0			
10		SM	REWORKED FILL; SILT, sandy; Red (2.5YR 4/8) light red (5R 6/6) and dark gray (10YR 4/1); some residual structure; dense; biotite prevalent Bottom of boring 8' bls	[Dotted pattern]	2.0			
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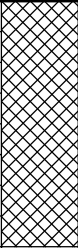


LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-19
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING:
DRILLING METHOD: Direct-Push	EASTING:
BOREHOLE DIAMETER: 2 IN	G.S. ELEV: NM ft M.P. ELEV: ft
NOTES:	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
	X	SM	FILL; Brown (7.5YR 5/2); sandy SILT; woody debris; moist; organics ----- Core loss	X	1.5			
5	X	SM	FILL; Red (2.5YR 4/8); silty SAND with gravel; coatings of lean clay; gravel small to medium; wet ----- Bottom of boring 8' bls	X	3.0			
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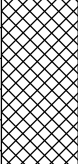



LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-20
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Red brown (5YR 4/4); moist to wet; some wood fragments; thin lenses of darker sandy lean clay		3.0			
10			Bottom of boring 8' bls		1.5			
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LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-21
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty; Dark yellow brown (10YR 4/6) and red (2.5YR 5/16); moist; some gravel and woody debris		3.5			
10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray (10YR 4/1); wet; slightly micaceous Bottom of boring 8' bls		2.5			
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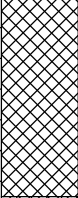



LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-22
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Dark yellow brown (10YR 4/6), red (2.5YR 5/6), and dark gray (10YR 4/1); moist to wet; significant woody debris from 6 to 7 Ft. BGS		3.0			
10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray (10YR 4/1); wet; some very fine sand Bottom of boring 8' bls		1.5			
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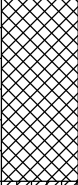



LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-23
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty; Brown (7.5YR 4/3) and fark gray (10YR 4/1); moist to wet; woody debris; some gravel		2.0			
10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray (N4); wet; micaceous Bottom of boring 8' bls		2.0			
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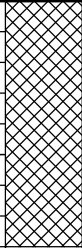


LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-24
PROJECT NO: 00.2731.00	STARTED: 3/15/21 COMPLETED: 3/15/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Dark yellow brown (10YR 4/6); moist to wet; micaceous; some woody debris		4.0			
10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray (N4); wet; micaceous; with some black mottling of decayed organics Bottom of boring 8' bls		3.0			
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LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-25
PROJECT NO: 00.2731.00	STARTED: 3/16/21 COMPLETED: 3/16/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty; Brown (10YR 4/3) to light red brown (2.5YR 6/3); some gravel; micaceous		2.5			
10			Bottom of boring 8' bls		2.5			
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LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-26
PROJECT NO: 00.2731.00	STARTED: 3/16/21 COMPLETED: 3/16/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty; Light red brown (2.5YR 6/3); moist to wet; slightly micaceous; some gravel		2.0			
10		SPG	SLAG/ COAL TAR Sand to gravel sized; odor present Bottom of boring 8' bls		3.0			
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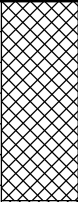




LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-27
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Red (SR 4/6); gravel is small to large micaceous; moist to wet		2.0			
5		SM	FILL; SAND, silty with gravel; Red (SR 4/6); gravel small to large; micaceous; moist to wet; sand and gravel content increasing with depth				<1	
10		CL	CLAY, lean; Dark gray; micaceous; some intermixed coal tar coatings; odor present Bottom of boring 8' bls		2.5			
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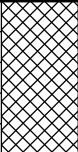






LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-28
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel Red brown; gravel increasing with depth; moist to wet		4.0		5	
10		CL	ALLUVIUM; CLAY, lean; Dark gray; wet; micaceous; heavy organic matter; slight odor present at 6.7 - 7 Ft. BGS (possible coal tar); PID (5 ppm) indicated presence of volatiles Bottom of boring 8' bls		2.5			
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LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-29
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
4.0		SM	FILL; SAND, silty; Dark brown thermally treated soil; some small zones of slag present; odor and PID indicated volatiles 4" to 12" BGS (8ppm)		4.0		8	
5.0		SM	FILL; SAND, silty with gravel;				5	
6.5		CL ML	Red; wet CLAY, lean, silty; Dark gray; micaceous; heavy organic matter and wood. 6.5 - 7 ft BGS PID indicated VOCs present (5 ppm) Bottom of boring 8' bls		2.0			
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LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-30
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
0 - 1.5		CL ML	FILL; CLAY, silty; Dark brown to black; thermally treated soil		3.0			
1.5 - 6.5		SM	FILL; SAND, silty with lean clay; Red, light brown, and gray; gravelly; moist to wet					
6.5 - 10		CL ML	ALLUVIUM; CLAY, lean, silty; Dark gray, wet; micaceous; heavy organic matter at 6.5 Ft. BGS Bottom of boring 8' bls		2.0			
10 - 45								

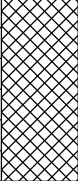



LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-31
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
0-1		SM	FILL;				6-20	
1-2		PT	SAND, silty with gravel; Brown to red brown; moist; micaceous		3.0			
2-5		CL ML	COAL SLAG and spent coal; odor present; 3-4" of woody debris at 2 Ft BGS; PID indicated 6-20 ppm					
5-6		CL ML	FILL; CLAY, silty				1	
6-8		CL ML	Gray; layers of wood debris; gravel; bricks; slag present at 6 Ft. BGS					
8-10		CL ML	CLAY, lean, silty; Dark gray; micaceous; wet; heavy wood debris		2.0			
10-8.0			Bottom of boring 8' bls					

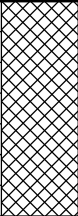




LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-32
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty, with gravel; dark yellow brown to red; moist to wet; some wood debris; no odor detected; PID reads 1-6 ppm		3.0		1-6	
		CL	CLAY, lean Dark gray; organics at 6 Ft wet; micaceous; PID reads 0.7 ppm Bottom of boring 8' bls		3.0		0.7	

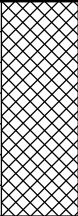




LOG.D - VI DEC BRAMLETTE.GPJ_GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-33
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Brown to red brown; moist to wet; micaceous; increasing sand and gravel with depth		3.0		>1	
10		CL	CLAY, lean, sandy; Dark gray; wet; micaceous; woody debris; coal tar resins; odor present; PID indicated 7 ppm Bottom of boring 8' bls		2.5			
15								
20								
25								
30								
35								
40								
45								

LOG D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-34
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty, with gravel; Brown to red brown; moist to wet; biotite		2.5		<1	
10		CL	CLAY, lean, sandy; Dark gray; some slag with coal tar coating; odor present; PID indicated <1 PPM Bottom of boring 8' bls		2.0			
15								
20								
25								
30								
35								
40								
45								

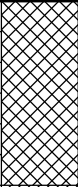

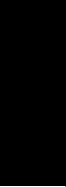


LOG.D - VI DEC BRAMLETTE.GPJ_GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-35
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel; Brown to red brown; moist to wet; intermittent lenses of slag with coal tar coatings; slight odor; PID indicated (0.5 - 1.3 ppm) from 0-2 Ft. BGS)		2.5		0.5 - 1.3	
10		CL	CLAY, lean; Dark gray; wet; micaceous; slight odor; PID indicated <1 ppm Bottom of boring 8' bls		3.0		<1	

LOG.D - VI DEC BRAMLETTE.GPJ GINT STD A4 ASTM LAB.GDT 6/22/21

PROJECT: Former Bramlette Road MGP Site	WELL / BORING NO: RI-SB-36
PROJECT NO: 00.2731.00	STARTED: 3/17/21 COMPLETED: 3/17/21
DRILLING COMPANY: Geologic Exploration	NORTHING: EASTING:
DRILLING METHOD: Direct-Push	G.S. ELEV: NM ft M.P. ELEV: ft
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BLS
NOTES:	LOGGED BY: T. King CHECKED BY: G. Khang

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (FT)	VISUAL IMPACTS	PID (ppm)	WELL CONSTRUCTION
5		SM	FILL; SAND, silty with gravel Heat treated soils; brown to red brown; some spent coal fragments; PID indicated >2 ppm in top 8"; increasing gravel with depth; asphalt and brick around 5 Ft BGS; moist to wet		3.5		>2	
10		CL	CLAY, lean; Dark gray; wet; micaceous; dense; organic matter at 6 Ft. BGS Bottom of boring 8' bls		2.0			

LOG.D - VI DEC BRAMLETTE.GPJ_GINT STD A4 ASTM LAB.GDT 6/22/21

ATTACHMENT 4
LABORATORY ANALYTICAL REPORTS

May 13, 2021

Program Manager
Duke Energy
13339 Hagers Ferry Road
Bldg. 7405 MG30A2
Huntersville, NC 28078

RE: Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Dear Program Manager:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Tom King
Amber Lipsky
Program Manager, Duke Energy
Mike Mastbaum
Todd Plating, Synterra
Rick Powell
B. Russo
Heather Smith



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92528011001	RI-SB-13 (0.5-1.0)	Solid	03/15/21 10:35	03/16/21 11:45
92528011002	RI-SB-13 (5.5-6.0)	Solid	03/15/21 10:35	03/16/21 11:45
92528011003	RI-SB-14 (0.5-1.0)	Solid	03/15/21 10:40	03/16/21 11:45
92528011004	RI-SB-14 (5.5-6.0)	Solid	03/15/21 10:40	03/16/21 11:45
92528011005	RI-SB-15 (0.5-1.0)	Solid	03/15/21 11:30	03/16/21 11:45
92528011006	RI-SB-15 (5.5-6.0)	Solid	03/15/21 11:35	03/16/21 11:45
92528011007	RI-SB-16 (0.5-1.0)	Solid	03/15/21 11:45	03/16/21 11:45
92528011008	RI-SB-16 (5.5-6.0)	Solid	03/15/21 11:50	03/16/21 11:45
92528011009	RI-SB-17 (0.5-1.0)	Solid	03/15/21 13:30	03/16/21 11:45
92528011010	RI-SB-17 (5.5-6.0)	Solid	03/15/21 13:35	03/16/21 11:45
92528011011	RI-SB-18 (0.5-1.0)	Solid	03/15/21 13:45	03/16/21 11:45
92528011012	RI-SB-18 (5.5-6.0)	Solid	03/15/21 13:50	03/16/21 11:45
92528011013	RI-SB-21 (0.5-1.0)	Solid	03/15/21 15:05	03/16/21 11:45
92528011014	RI-SB-21 (5.5-6.0)	Solid	03/15/21 15:10	03/16/21 11:45
92528011015	RI-SB-22 (0.5-1.0)	Solid	03/15/21 15:25	03/16/21 11:45
92528011016	RI-SB-22 (5.5-6.0)	Solid	03/15/21 15:30	03/16/21 11:45
92528011017	RI-SB-23 (0.5-1.0)	Solid	03/15/21 15:35	03/16/21 11:45
92528011018	RI-SB-23 (5.5-6.0)	Solid	03/15/21 15:40	03/16/21 11:45
92528011019	RI-SB-24 (0.5-1.0)	Solid	03/15/21 15:55	03/16/21 11:45
92528011020	RI-SB-24 (5.5-6.0)	Solid	03/15/21 16:00	03/16/21 11:45
92528011021	TRIP BLANK	Water	03/15/21 00:00	03/16/21 11:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92528011001	RI-SB-13 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011002	RI-SB-13 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011003	RI-SB-14 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011004	RI-SB-14 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011005	RI-SB-15 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011006	RI-SB-15 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011007	RI-SB-16 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011008	RI-SB-16 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011009	RI-SB-17 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011010	RI-SB-17 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011011	RI-SB-18 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011012	RI-SB-18 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011013	RI-SB-21 (0.5-1.0)	SW-846	KDF	1	PASI-C

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92528011014	RI-SB-21 (5.5-6.0)	SW-846	KDF	1	PASI-C
92528011015	RI-SB-22 (0.5-1.0)	SW-846	KDF	1	PASI-C
92528011016	RI-SB-22 (5.5-6.0)	SW-846	KDF	1	PASI-C
92528011017	RI-SB-23 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011018	RI-SB-23 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011019	RI-SB-24 (0.5-1.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011020	RI-SB-24 (5.5-6.0)	EPA 8270E	BPJ	69	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528011021	TRIP BLANK	EPA 8260D	CL	62	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92528011001	RI-SB-13 (0.5-1.0)					
SW-846	Percent Moisture	14.3	%	0.10	03/17/21 14:11	N2
92528011002	RI-SB-13 (5.5-6.0)					
EPA 8270E	Benzo(a)anthracene	291J	ug/kg	557	03/18/21 09:44	
EPA 8270E	Benzo(a)pyrene	254J	ug/kg	557	03/18/21 09:44	
EPA 8270E	Benzo(b)fluoranthene	330J	ug/kg	557	03/18/21 09:44	
EPA 8270E	Chrysene	271J	ug/kg	557	03/18/21 09:44	
EPA 8270E	Fluoranthene	574	ug/kg	557	03/18/21 09:44	
EPA 8270E	Phenanthrene	219J	ug/kg	557	03/18/21 09:44	
EPA 8270E	Pyrene	556J	ug/kg	557	03/18/21 09:44	
EPA 8260D	Acetone	139J	ug/kg	386	03/17/21 22:35	
EPA 8260D	2-Butanone (MEK)	97.5J	ug/kg	386	03/17/21 22:35	
EPA 8260D	Chlorobenzene	11.9J	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	Ethylbenzene	40.6	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	Isopropylbenzene (Cumene)	95.2	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	p-Isopropyltoluene	54.1	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	Naphthalene	315	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	Toluene	32.5	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	1,2,4-Trimethylbenzene	66.7	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	1,3,5-Trimethylbenzene	24.9	ug/kg	19.3	03/17/21 22:35	
EPA 8260D	Xylene (Total)	153	ug/kg	38.6	03/17/21 22:35	
EPA 8260D	m&p-Xylene	90.6	ug/kg	38.6	03/17/21 22:35	
EPA 8260D	o-Xylene	62.3	ug/kg	19.3	03/17/21 22:35	
SW-846	Percent Moisture	41.1	%	0.10	03/17/21 14:11	N2
92528011003	RI-SB-14 (0.5-1.0)					
EPA 8260D	Naphthalene	29.7	ug/kg	7.0	03/17/21 17:54	
EPA 8260D	Toluene	12.8	ug/kg	7.0	03/17/21 17:54	
EPA 8260D	1,2,4-Trimethylbenzene	11.0	ug/kg	7.0	03/17/21 17:54	
EPA 8260D	Xylene (Total)	32.5	ug/kg	13.9	03/17/21 17:54	
EPA 8260D	m&p-Xylene	20.5	ug/kg	13.9	03/17/21 17:54	
EPA 8260D	o-Xylene	12.0	ug/kg	7.0	03/17/21 17:54	
SW-846	Percent Moisture	11.8	%	0.10	03/17/21 14:11	N2
92528011004	RI-SB-14 (5.5-6.0)					
EPA 8270E	Benzo(a)anthracene	269J	ug/kg	493	03/18/21 11:15	
EPA 8270E	Benzo(a)pyrene	231J	ug/kg	493	03/18/21 11:15	
EPA 8270E	Benzo(b)fluoranthene	333J	ug/kg	493	03/18/21 11:15	
EPA 8270E	Chrysene	255J	ug/kg	493	03/18/21 11:15	
EPA 8270E	Fluoranthene	598	ug/kg	493	03/18/21 11:15	
EPA 8270E	Phenanthrene	406J	ug/kg	493	03/18/21 11:15	
EPA 8270E	Pyrene	505	ug/kg	493	03/18/21 11:15	
EPA 8260D	Acetone	164J	ug/kg	256	03/17/21 22:53	
EPA 8260D	2-Butanone (MEK)	81.0J	ug/kg	256	03/17/21 22:53	
EPA 8260D	Chlorobenzene	20.8	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	1,4-Dichlorobenzene	6.5J	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	Ethylbenzene	32.8	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	Isopropylbenzene (Cumene)	97.8	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	p-Isopropyltoluene	70.4	ug/kg	12.8	03/17/21 22:53	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92528011004	RI-SB-14 (5.5-6.0)					
EPA 8260D	Naphthalene	203	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	Toluene	20.0	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	1,2,4-Trimethylbenzene	33.4	ug/kg	12.8	03/17/21 22:53	
EPA 8260D	Xylene (Total)	74.1	ug/kg	25.6	03/17/21 22:53	
EPA 8260D	m&p-Xylene	43.7	ug/kg	25.6	03/17/21 22:53	
EPA 8260D	o-Xylene	30.4	ug/kg	12.8	03/17/21 22:53	
SW-846	Percent Moisture	33.1	%	0.10	03/17/21 14:12	N2
92528011005	RI-SB-15 (0.5-1.0)					
EPA 8270E	Acenaphthene	214J	ug/kg	372	03/18/21 11:46	
EPA 8270E	Acenaphthylene	169J	ug/kg	372	03/18/21 11:46	
EPA 8270E	Anthracene	376	ug/kg	372	03/18/21 11:46	
EPA 8270E	Benzo(a)anthracene	801	ug/kg	372	03/18/21 11:46	
EPA 8270E	Benzo(a)pyrene	693	ug/kg	372	03/18/21 11:46	
EPA 8270E	Benzo(b)fluoranthene	944	ug/kg	372	03/18/21 11:46	
EPA 8270E	Benzo(g,h,i)perylene	436	ug/kg	372	03/18/21 11:46	
EPA 8270E	Benzo(k)fluoranthene	398	ug/kg	372	03/18/21 11:46	
EPA 8270E	Chrysene	822	ug/kg	372	03/18/21 11:46	
EPA 8270E	Dibenzofuran	260J	ug/kg	372	03/18/21 11:46	
EPA 8270E	Fluoranthene	1370	ug/kg	372	03/18/21 11:46	
EPA 8270E	Fluorene	289J	ug/kg	372	03/18/21 11:46	
EPA 8270E	Indeno(1,2,3-cd)pyrene	370J	ug/kg	372	03/18/21 11:46	
EPA 8270E	1-Methylnaphthalene	458	ug/kg	372	03/18/21 11:46	
EPA 8270E	2-Methylnaphthalene	520	ug/kg	372	03/18/21 11:46	
EPA 8270E	Phenanthrene	1470	ug/kg	372	03/18/21 11:46	
EPA 8270E	Pyrene	1400	ug/kg	372	03/18/21 11:46	
EPA 8260D	Benzene	41.8	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Chlorobenzene	7.0	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Ethylbenzene	23.4	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Isopropylbenzene (Cumene)	5.7J	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	p-Isopropyltoluene	9.6	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Naphthalene	372	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Styrene	3.8J	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Toluene	64.6	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	1,2,4-Trimethylbenzene	19.2	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	1,3,5-Trimethylbenzene	6.8	ug/kg	6.3	03/17/21 18:11	
EPA 8260D	Xylene (Total)	70.4	ug/kg	12.5	03/17/21 18:11	
EPA 8260D	m&p-Xylene	49.8	ug/kg	12.5	03/17/21 18:11	
EPA 8260D	o-Xylene	20.6	ug/kg	6.3	03/17/21 18:11	
SW-846	Percent Moisture	11.9	%	0.10	03/17/21 14:12	N2
92528011006	RI-SB-15 (5.5-6.0)					
EPA 8270E	Acenaphthene	269J	ug/kg	517	03/18/21 12:47	
EPA 8270E	Acenaphthylene	185J	ug/kg	517	03/18/21 12:47	
EPA 8270E	Anthracene	716	ug/kg	517	03/18/21 12:47	
EPA 8270E	Benzo(a)anthracene	1640	ug/kg	517	03/18/21 12:47	
EPA 8270E	Benzo(a)pyrene	1440	ug/kg	517	03/18/21 12:47	
EPA 8270E	Benzo(b)fluoranthene	2020	ug/kg	517	03/18/21 12:47	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92528011006	RI-SB-15 (5.5-6.0)					
EPA 8270E	Benzo(g,h,i)perylene	975	ug/kg	517	03/18/21 12:47	
EPA 8270E	Benzo(k)fluoranthene	791	ug/kg	517	03/18/21 12:47	
EPA 8270E	Chrysene	1530	ug/kg	517	03/18/21 12:47	
EPA 8270E	Fluoranthene	3920	ug/kg	517	03/18/21 12:47	
EPA 8270E	Fluorene	329J	ug/kg	517	03/18/21 12:47	
EPA 8270E	Indeno(1,2,3-cd)pyrene	800	ug/kg	517	03/18/21 12:47	
EPA 8270E	Phenanthrene	2730	ug/kg	517	03/18/21 12:47	
EPA 8270E	Pyrene	3540	ug/kg	517	03/18/21 12:47	
EPA 8260D	Chlorobenzene	6.8J	ug/kg	10	03/17/21 18:29	
EPA 8260D	Isopropylbenzene (Cumene)	20.6	ug/kg	10	03/17/21 18:29	
EPA 8260D	p-Isopropyltoluene	34.3	ug/kg	10	03/17/21 18:29	
EPA 8260D	Naphthalene	60.0	ug/kg	10	03/17/21 18:29	
EPA 8260D	Toluene	5.1J	ug/kg	10	03/17/21 18:29	
EPA 8260D	1,2,4-Trimethylbenzene	13.0	ug/kg	10	03/17/21 18:29	
EPA 8260D	Xylene (Total)	15.7J	ug/kg	19.9	03/17/21 18:29	
EPA 8260D	m&p-Xylene	15.7J	ug/kg	19.9	03/17/21 18:29	
SW-846	Percent Moisture	36.8	%	0.10	03/17/21 14:12	N2
92528011007	RI-SB-16 (0.5-1.0)					
EPA 8260D	Naphthalene	7.8	ug/kg	6.2	03/19/21 00:27	
EPA 8260D	Toluene	9.7	ug/kg	6.2	03/19/21 00:27	
EPA 8260D	1,2,4-Trimethylbenzene	3.4J	ug/kg	6.2	03/19/21 00:27	
EPA 8260D	Xylene (Total)	10.5J	ug/kg	12.4	03/19/21 00:27	
EPA 8260D	m&p-Xylene	10.5J	ug/kg	12.4	03/19/21 00:27	
SW-846	Percent Moisture	14.2	%	0.10	03/17/21 14:12	N2
92528011008	RI-SB-16 (5.5-6.0)					
EPA 8270E	Acenaphthene	7710	ug/kg	516	03/18/21 13:49	E
EPA 8270E	Anthracene	17300	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Benzo(a)anthracene	23800	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Benzo(a)pyrene	15900	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Benzo(b)fluoranthene	21300	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Benzo(g,h,i)perylene	9630	ug/kg	516	03/18/21 13:49	
EPA 8270E	Benzo(k)fluoranthene	8160	ug/kg	516	03/18/21 13:49	
EPA 8270E	Chrysene	23000	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Dibenz(a,h)anthracene	2920	ug/kg	516	03/18/21 13:49	
EPA 8270E	Dibenzofuran	4160	ug/kg	516	03/18/21 13:49	
EPA 8270E	Fluoranthene	58500	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Fluorene	10200	ug/kg	516	03/18/21 13:49	E
EPA 8270E	Indeno(1,2,3-cd)pyrene	9200	ug/kg	516	03/18/21 13:49	
EPA 8270E	1-Methylnaphthalene	1490	ug/kg	516	03/18/21 13:49	
EPA 8270E	2-Methylnaphthalene	695	ug/kg	516	03/18/21 13:49	
EPA 8270E	Phenanthrene	55400	ug/kg	10300	03/18/21 22:41	
EPA 8270E	Pyrene	48100	ug/kg	10300	03/18/21 22:41	
EPA 8260D	Acetone	83.5J	ug/kg	215	03/17/21 23:11	
EPA 8260D	2-Butanone (MEK)	74.6J	ug/kg	215	03/17/21 23:11	
EPA 8260D	Chlorobenzene	40.2	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	1,4-Dichlorobenzene	12.2	ug/kg	10.7	03/17/21 23:11	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92528011008	RI-SB-16 (5.5-6.0)					
EPA 8260D	Ethylbenzene	10.8	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	Isopropylbenzene (Cumene)	173	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	p-Isopropyltoluene	56.9	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	Naphthalene	1410	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	Styrene	5.8J	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	Toluene	17.2	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	1,2,4-Trimethylbenzene	107	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	1,3,5-Trimethylbenzene	43.0	ug/kg	10.7	03/17/21 23:11	
EPA 8260D	Xylene (Total)	131	ug/kg	21.5	03/17/21 23:11	
EPA 8260D	m&p-Xylene	69.5	ug/kg	21.5	03/17/21 23:11	
EPA 8260D	o-Xylene	61.1	ug/kg	10.7	03/17/21 23:11	
SW-846	Percent Moisture	35.9	%	0.10	03/17/21 14:12	N2
92528011009	RI-SB-17 (0.5-1.0)					
EPA 8260D	Naphthalene	8.0J	ug/kg	8.7	03/17/21 19:04	C8
EPA 8260D	Toluene	12.7	ug/kg	8.7	03/17/21 19:04	
EPA 8260D	Xylene (Total)	11.4J	ug/kg	17.4	03/17/21 19:04	
EPA 8260D	m&p-Xylene	11.4J	ug/kg	17.4	03/17/21 19:04	
SW-846	Percent Moisture	20.1	%	0.10	03/17/21 14:12	N2
92528011010	RI-SB-17 (5.5-6.0)					
EPA 8260D	Toluene	5.0J	ug/kg	6.4	03/17/21 19:22	
SW-846	Percent Moisture	21.7	%	0.10	03/17/21 14:12	N2
92528011011	RI-SB-18 (0.5-1.0)					
SW-846	Percent Moisture	20.4	%	0.10	03/17/21 14:12	N2
92528011012	RI-SB-18 (5.5-6.0)					
SW-846	Percent Moisture	22.5	%	0.10	03/17/21 14:12	N2
92528011013	RI-SB-21 (0.5-1.0)					
SW-846	Percent Moisture	13.5	%	0.10	03/17/21 14:12	N2
92528011014	RI-SB-21 (5.5-6.0)					
SW-846	Percent Moisture	34.0	%	0.10	03/17/21 14:12	N2
92528011015	RI-SB-22 (0.5-1.0)					
SW-846	Percent Moisture	13.4	%	0.10	03/17/21 14:13	N2
92528011016	RI-SB-22 (5.5-6.0)					
SW-846	Percent Moisture	40.6	%	0.10	03/17/21 14:13	N2
92528011017	RI-SB-23 (0.5-1.0)					
SW-846	Percent Moisture	14.7	%	0.10	03/17/21 14:13	N2
92528011018	RI-SB-23 (5.5-6.0)					
EPA 8260D	Ethylbenzene	5.4J	ug/kg	8.8	03/24/21 15:06	
EPA 8260D	Naphthalene	21.0	ug/kg	8.8	03/24/21 15:06	
EPA 8260D	Toluene	8.1J	ug/kg	8.8	03/24/21 15:06	
SW-846	Percent Moisture	20.4	%	0.10	03/17/21 14:13	N2

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92528011019	RI-SB-24 (0.5-1.0)					
EPA 8260D	Naphthalene	7.7	ug/kg	7.1	03/24/21 15:24	
EPA 8260D	Toluene	4.6J	ug/kg	7.1	03/24/21 15:24	
SW-846	Percent Moisture	14.7	%	0.10	03/17/21 14:13	N2
92528011020	RI-SB-24 (5.5-6.0)					
EPA 8270E	Acenaphthylene	194J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Benzo(a)anthracene	172J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Benzo(a)pyrene	184J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Benzo(b)fluoranthene	306J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Benzo(g,h,i)perylene	224J	ug/kg	492	03/24/21 18:22	v1
EPA 8270E	Chrysene	199J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Fluoranthene	267J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Indeno(1,2,3-cd)pyrene	209J	ug/kg	492	03/24/21 18:22	
EPA 8270E	Pyrene	261J	ug/kg	492	03/24/21 18:22	
EPA 8260D	Acetone	273	ug/kg	222	03/24/21 15:42	
EPA 8260D	Benzene	5.7J	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	2-Butanone (MEK)	117J	ug/kg	222	03/24/21 15:42	
EPA 8260D	Chlorobenzene	17.2	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	Ethylbenzene	19.0	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	Isopropylbenzene (Cumene)	254	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	Naphthalene	1320	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	n-Propylbenzene	16.1	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	Toluene	24.1	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	1,2,4-Trimethylbenzene	69.3	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	1,3,5-Trimethylbenzene	29.9	ug/kg	11.1	03/24/21 15:42	
EPA 8260D	Xylene (Total)	174	ug/kg	22.2	03/24/21 15:42	
EPA 8260D	m&p-Xylene	94.2	ug/kg	22.2	03/24/21 15:42	
EPA 8260D	o-Xylene	80.1	ug/kg	11.1	03/24/21 15:42	
SW-846	Percent Moisture	33.1	%	0.10	03/17/21 14:13	N2

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8270E

Description: 8270E MSSV Microwave

Client: Duke Energy

Date: May 13, 2021

General Information:

16 samples were analyzed for EPA 8270E by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 608843

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3206787)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- DUP (Lab ID: 3206790)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- LCS (Lab ID: 3206788)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- MS (Lab ID: 3206789)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- RI-SB-23 (0.5-1.0) (Lab ID: 92528011017)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- RI-SB-23 (5.5-6.0) (Lab ID: 92528011018)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate
- RI-SB-24 (0.5-1.0) (Lab ID: 92528011019)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8270E

Description: 8270E MSSV Microwave

Client: Duke Energy

Date: May 13, 2021

QC Batch: 608843

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- Benzo(g,h,i)perylene
- Butylbenzylphthalate
- Di-n-octylphthalate
- RI-SB-24 (5.5-6.0) (Lab ID: 92528011020)
 - Benzo(g,h,i)perylene
 - Butylbenzylphthalate
 - Di-n-octylphthalate

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608843

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92528011017

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3206789)
 - bis(2-Chloroethyl) ether

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 607315

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

- RI-SB-16 (5.5-6.0) (Lab ID: 92528011008)
 - Acenaphthene
 - Fluorene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8260D

Description: 8260 MSV Low Level SC

Client: Duke Energy

Date: May 13, 2021

General Information:

1 sample was analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: May 13, 2021

General Information:

16 samples were analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607356

IK: The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.

- BLANK (Lab ID: 3199767)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- DUP (Lab ID: 3199769)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- LCS (Lab ID: 3199768)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- MS (Lab ID: 3200136)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-13 (0.5-1.0) (Lab ID: 92528011001)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-13 (5.5-6.0) (Lab ID: 92528011002)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-14 (0.5-1.0) (Lab ID: 92528011003)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-14 (5.5-6.0) (Lab ID: 92528011004)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-15 (0.5-1.0) (Lab ID: 92528011005)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-15 (5.5-6.0) (Lab ID: 92528011006)
 - Bromomethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Method: EPA 8260D
Description: 8260D/5035A/5030B SC Volatiles
Client: Duke Energy
Date: May 13, 2021

QC Batch: 607356

IK: The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.

- Hexachloro-1,3-butadiene
- RI-SB-16 (5.5-6.0) (Lab ID: 92528011008)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-17 (0.5-1.0) (Lab ID: 92528011009)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-17 (5.5-6.0) (Lab ID: 92528011010)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-18 (0.5-1.0) (Lab ID: 92528011011)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-18 (5.5-6.0) (Lab ID: 92528011012)
 - Bromomethane
 - Hexachloro-1,3-butadiene

QC Batch: 607623

IK: The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.

- BLANK (Lab ID: 3200879)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- DUP (Lab ID: 3200881)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- LCS (Lab ID: 3200880)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- MS (Lab ID: 3200882)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-16 (0.5-1.0) (Lab ID: 92528011007)
 - Bromomethane
 - Hexachloro-1,3-butadiene

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607356

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3199767)
 - Bromomethane

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: May 13, 2021

QC Batch: 607356

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- DUP (Lab ID: 3199769)
 - Bromomethane
- LCS (Lab ID: 3199768)
 - Bromomethane
- MS (Lab ID: 3200136)
 - Bromomethane
- RI-SB-13 (0.5-1.0) (Lab ID: 92528011001)
 - Bromomethane
- RI-SB-13 (5.5-6.0) (Lab ID: 92528011002)
 - Bromomethane
- RI-SB-14 (0.5-1.0) (Lab ID: 92528011003)
 - Bromomethane
- RI-SB-14 (5.5-6.0) (Lab ID: 92528011004)
 - Bromomethane
- RI-SB-15 (0.5-1.0) (Lab ID: 92528011005)
 - Bromomethane
- RI-SB-15 (5.5-6.0) (Lab ID: 92528011006)
 - Bromomethane
- RI-SB-16 (5.5-6.0) (Lab ID: 92528011008)
 - Bromomethane
- RI-SB-17 (0.5-1.0) (Lab ID: 92528011009)
 - Bromomethane
- RI-SB-17 (5.5-6.0) (Lab ID: 92528011010)
 - Bromomethane
- RI-SB-18 (0.5-1.0) (Lab ID: 92528011011)
 - Bromomethane
- RI-SB-18 (5.5-6.0) (Lab ID: 92528011012)
 - Bromomethane

v2: The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

- BLANK (Lab ID: 3199767)
 - tert-Butylbenzene
- DUP (Lab ID: 3199769)
 - tert-Butylbenzene
- RI-SB-13 (0.5-1.0) (Lab ID: 92528011001)
 - tert-Butylbenzene
- RI-SB-13 (5.5-6.0) (Lab ID: 92528011002)
 - tert-Butylbenzene
- RI-SB-14 (0.5-1.0) (Lab ID: 92528011003)
 - tert-Butylbenzene
- RI-SB-14 (5.5-6.0) (Lab ID: 92528011004)
 - tert-Butylbenzene
- RI-SB-15 (0.5-1.0) (Lab ID: 92528011005)

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: May 13, 2021

QC Batch: 607356

v2: The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

- tert-Butylbenzene
- RI-SB-15 (5.5-6.0) (Lab ID: 92528011006)
 - tert-Butylbenzene
- RI-SB-16 (5.5-6.0) (Lab ID: 92528011008)
 - tert-Butylbenzene
- RI-SB-17 (0.5-1.0) (Lab ID: 92528011009)
 - tert-Butylbenzene
- RI-SB-17 (5.5-6.0) (Lab ID: 92528011010)
 - tert-Butylbenzene
- RI-SB-18 (0.5-1.0) (Lab ID: 92528011011)
 - tert-Butylbenzene
- RI-SB-18 (5.5-6.0) (Lab ID: 92528011012)
 - tert-Butylbenzene

v3: The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

- LCS (Lab ID: 3199768)
 - tert-Butylbenzene
- MS (Lab ID: 3200136)
 - tert-Butylbenzene

QC Batch: 607623

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3200879)
 - Bromomethane
- DUP (Lab ID: 3200881)
 - Bromomethane
- LCS (Lab ID: 3200880)
 - Bromomethane
- MS (Lab ID: 3200882)
 - Bromomethane
- RI-SB-16 (0.5-1.0) (Lab ID: 92528011007)
 - Bromomethane

v2: The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

- BLANK (Lab ID: 3200879)
 - tert-Butylbenzene
- DUP (Lab ID: 3200881)
 - tert-Butylbenzene
- LCS (Lab ID: 3200880)
 - tert-Butylbenzene
- MS (Lab ID: 3200882)
 - tert-Butylbenzene
- RI-SB-16 (0.5-1.0) (Lab ID: 92528011007)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Method: EPA 8260D
Description: 8260D/5035A/5030B SC Volatiles
Client: Duke Energy
Date: May 13, 2021

QC Batch: 607623

v2: The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

- tert-Butylbenzene

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 607356

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3199768)
- Bromomethane

QC Batch: 607623

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3200880)
- Bromomethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607623

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92528353002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3200882)
- Chloromethane

QC Batch: 608883

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92528011018

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3206987)
- 1,2-Dibromoethane (EDB)

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: May 13, 2021

Additional Comments:

Analyte Comments:

QC Batch: 607356

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

- RI-SB-17 (0.5-1.0) (Lab ID: 92528011009)
- Naphthalene

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-13 (0.5-1.0) **Lab ID: 92528011001** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	381	134	1	03/17/21 16:29	03/18/21 08:42	83-32-9	
Acenaphthylene	ND	ug/kg	381	134	1	03/17/21 16:29	03/18/21 08:42	208-96-8	
Aniline	ND	ug/kg	381	149	1	03/17/21 16:29	03/18/21 08:42	62-53-3	
Anthracene	ND	ug/kg	381	125	1	03/17/21 16:29	03/18/21 08:42	120-12-7	
Benzo(a)anthracene	ND	ug/kg	381	127	1	03/17/21 16:29	03/18/21 08:42	56-55-3	
Benzo(a)pyrene	ND	ug/kg	381	132	1	03/17/21 16:29	03/18/21 08:42	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	381	127	1	03/17/21 16:29	03/18/21 08:42	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	381	148	1	03/17/21 16:29	03/18/21 08:42	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	381	134	1	03/17/21 16:29	03/18/21 08:42	207-08-9	
Benzoic Acid	ND	ug/kg	1910	819	1	03/17/21 16:29	03/18/21 08:42	65-85-0	
Benzyl alcohol	ND	ug/kg	762	289	1	03/17/21 16:29	03/18/21 08:42	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	381	147	1	03/17/21 16:29	03/18/21 08:42	101-55-3	
Butylbenzylphthalate	ND	ug/kg	381	161	1	03/17/21 16:29	03/18/21 08:42	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	762	268	1	03/17/21 16:29	03/18/21 08:42	59-50-7	
4-Chloroaniline	ND	ug/kg	762	299	1	03/17/21 16:29	03/18/21 08:42	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	381	158	1	03/17/21 16:29	03/18/21 08:42	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	381	143	1	03/17/21 16:29	03/18/21 08:42	111-44-4	
2-Chloronaphthalene	ND	ug/kg	381	151	1	03/17/21 16:29	03/18/21 08:42	91-58-7	
2-Chlorophenol	ND	ug/kg	381	143	1	03/17/21 16:29	03/18/21 08:42	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	381	142	1	03/17/21 16:29	03/18/21 08:42	7005-72-3	
Chrysene	ND	ug/kg	381	139	1	03/17/21 16:29	03/18/21 08:42	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	381	147	1	03/17/21 16:29	03/18/21 08:42	53-70-3	
Dibenzofuran	ND	ug/kg	381	137	1	03/17/21 16:29	03/18/21 08:42	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	762	258	1	03/17/21 16:29	03/18/21 08:42	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	381	149	1	03/17/21 16:29	03/18/21 08:42	120-83-2	
Diethylphthalate	ND	ug/kg	381	140	1	03/17/21 16:29	03/18/21 08:42	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	381	158	1	03/17/21 16:29	03/18/21 08:42	105-67-9	
Dimethylphthalate	ND	ug/kg	381	139	1	03/17/21 16:29	03/18/21 08:42	131-11-3	
Di-n-butylphthalate	ND	ug/kg	381	128	1	03/17/21 16:29	03/18/21 08:42	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	762	356	1	03/17/21 16:29	03/18/21 08:42	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1910	1180	1	03/17/21 16:29	03/18/21 08:42	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	381	147	1	03/17/21 16:29	03/18/21 08:42	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	381	140	1	03/17/21 16:29	03/18/21 08:42	606-20-2	
Di-n-octylphthalate	ND	ug/kg	381	150	1	03/17/21 16:29	03/18/21 08:42	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	381	148	1	03/17/21 16:29	03/18/21 08:42	117-81-7	
Fluoranthene	ND	ug/kg	381	131	1	03/17/21 16:29	03/18/21 08:42	206-44-0	
Fluorene	ND	ug/kg	381	134	1	03/17/21 16:29	03/18/21 08:42	86-73-7	
Hexachlorobenzene	ND	ug/kg	381	149	1	03/17/21 16:29	03/18/21 08:42	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	381	218	1	03/17/21 16:29	03/18/21 08:42	77-47-4	
Hexachloroethane	ND	ug/kg	381	146	1	03/17/21 16:29	03/18/21 08:42	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	381	150	1	03/17/21 16:29	03/18/21 08:42	193-39-5	
Isophorone	ND	ug/kg	381	170	1	03/17/21 16:29	03/18/21 08:42	78-59-1	
1-Methylnaphthalene	ND	ug/kg	381	134	1	03/17/21 16:29	03/18/21 08:42	90-12-0	
2-Methylnaphthalene	ND	ug/kg	381	152	1	03/17/21 16:29	03/18/21 08:42	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (0.5-1.0) **Lab ID: 92528011001** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	381	156	1	03/17/21 16:29	03/18/21 08:42	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	381	154	1	03/17/21 16:29	03/18/21 08:42	15831-10-4	
2-Nitroaniline	ND	ug/kg	1910	312	1	03/17/21 16:29	03/18/21 08:42	88-74-4	
3-Nitroaniline	ND	ug/kg	1910	299	1	03/17/21 16:29	03/18/21 08:42	99-09-2	
4-Nitroaniline	ND	ug/kg	762	290	1	03/17/21 16:29	03/18/21 08:42	100-01-6	
Nitrobenzene	ND	ug/kg	381	177	1	03/17/21 16:29	03/18/21 08:42	98-95-3	
2-Nitrophenol	ND	ug/kg	381	165	1	03/17/21 16:29	03/18/21 08:42	88-75-5	
4-Nitrophenol	ND	ug/kg	1910	737	1	03/17/21 16:29	03/18/21 08:42	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	381	128	1	03/17/21 16:29	03/18/21 08:42	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	381	143	1	03/17/21 16:29	03/18/21 08:42	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	381	135	1	03/17/21 16:29	03/18/21 08:42	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	381	181	1	03/17/21 16:29	03/18/21 08:42	108-60-1	
Pentachlorophenol	ND	ug/kg	762	373	1	03/17/21 16:29	03/18/21 08:42	87-86-5	
Phenanthrene	ND	ug/kg	381	125	1	03/17/21 16:29	03/18/21 08:42	85-01-8	
Phenol	ND	ug/kg	381	170	1	03/17/21 16:29	03/18/21 08:42	108-95-2	
Pyrene	ND	ug/kg	381	155	1	03/17/21 16:29	03/18/21 08:42	129-00-0	
Pyridine	ND	ug/kg	381	120	1	03/17/21 16:29	03/18/21 08:42	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	381	174	1	03/17/21 16:29	03/18/21 08:42	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	381	157	1	03/17/21 16:29	03/18/21 08:42	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	70	%	21-130		1	03/17/21 16:29	03/18/21 08:42	4165-60-0	
2-Fluorobiphenyl (S)	69	%	19-130		1	03/17/21 16:29	03/18/21 08:42	321-60-8	
Terphenyl-d14 (S)	107	%	15-130		1	03/17/21 16:29	03/18/21 08:42	1718-51-0	
Phenol-d6 (S)	72	%	18-130		1	03/17/21 16:29	03/18/21 08:42	13127-88-3	
2-Fluorophenol (S)	67	%	18-130		1	03/17/21 16:29	03/18/21 08:42	367-12-4	
2,4,6-Tribromophenol (S)	84	%	18-130		1	03/17/21 16:29	03/18/21 08:42	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	125	40.2	1	03/17/21 16:07	03/17/21 17:19	67-64-1	
Benzene	ND	ug/kg	6.3	2.5	1	03/17/21 16:07	03/17/21 17:19	71-43-2	
Bromobenzene	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 17:19	108-86-1	
Bromochloromethane	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 17:19	74-97-5	
Bromodichloromethane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 17:19	75-27-4	
Bromoform	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	75-25-2	
Bromomethane	ND	ug/kg	12.5	9.9	1	03/17/21 16:07	03/17/21 17:19	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	125	30.1	1	03/17/21 16:07	03/17/21 17:19	78-93-3	
n-Butylbenzene	ND	ug/kg	6.3	3.0	1	03/17/21 16:07	03/17/21 17:19	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 17:19	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 17:19	56-23-5	
Chlorobenzene	ND	ug/kg	6.3	1.2	1	03/17/21 16:07	03/17/21 17:19	108-90-7	
Chloroethane	ND	ug/kg	12.5	4.8	1	03/17/21 16:07	03/17/21 17:19	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (0.5-1.0) **Lab ID: 92528011001** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.3	3.8	1	03/17/21 16:07	03/17/21 17:19	67-66-3	
Chloromethane	ND	ug/kg	12.5	5.3	1	03/17/21 16:07	03/17/21 17:19	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.3	1.1	1	03/17/21 16:07	03/17/21 17:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 17:19	96-12-8	
Dibromochloromethane	ND	ug/kg	6.3	3.5	1	03/17/21 16:07	03/17/21 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 17:19	106-93-4	
Dibromomethane	ND	ug/kg	6.3	1.3	1	03/17/21 16:07	03/17/21 17:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 17:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 17:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.3	1.6	1	03/17/21 16:07	03/17/21 17:19	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.5	2.7	1	03/17/21 16:07	03/17/21 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.3	2.6	1	03/17/21 16:07	03/17/21 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.3	4.1	1	03/17/21 16:07	03/17/21 17:19	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.3	2.6	1	03/17/21 16:07	03/17/21 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 17:19	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 17:19	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 17:19	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.3	3.0	1	03/17/21 16:07	03/17/21 17:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 17:19	108-20-3	
Ethylbenzene	ND	ug/kg	6.3	2.9	1	03/17/21 16:07	03/17/21 17:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	12.5	10.2	1	03/17/21 16:07	03/17/21 17:19	87-68-3	IK
2-Hexanone	ND	ug/kg	62.6	6.0	1	03/17/21 16:07	03/17/21 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 17:19	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.3	3.1	1	03/17/21 16:07	03/17/21 17:19	99-87-6	
Methylene Chloride	ND	ug/kg	25.0	17.2	1	03/17/21 16:07	03/17/21 17:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	62.6	6.0	1	03/17/21 16:07	03/17/21 17:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 17:19	1634-04-4	
Naphthalene	ND	ug/kg	6.3	3.3	1	03/17/21 16:07	03/17/21 17:19	91-20-3	
n-Propylbenzene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 17:19	103-65-1	
Styrene	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 17:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 17:19	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 17:19	79-34-5	
Tetrachloroethene	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 17:19	127-18-4	
Toluene	ND	ug/kg	6.3	1.8	1	03/17/21 16:07	03/17/21 17:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.3	5.1	1	03/17/21 16:07	03/17/21 17:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.3	5.3	1	03/17/21 16:07	03/17/21 17:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.3	3.3	1	03/17/21 16:07	03/17/21 17:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 17:19	79-00-5	
Trichloroethene	ND	ug/kg	6.3	1.6	1	03/17/21 16:07	03/17/21 17:19	79-01-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (0.5-1.0) **Lab ID: 92528011001** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	6.3	3.4	1	03/17/21 16:07	03/17/21 17:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.3	3.2	1	03/17/21 16:07	03/17/21 17:19	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 17:19	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 17:19	108-67-8	
Vinyl acetate	ND	ug/kg	62.6	4.6	1	03/17/21 16:07	03/17/21 17:19	108-05-4	
Vinyl chloride	ND	ug/kg	12.5	3.2	1	03/17/21 16:07	03/17/21 17:19	75-01-4	
Xylene (Total)	ND	ug/kg	12.5	3.6	1	03/17/21 16:07	03/17/21 17:19	1330-20-7	
m&p-Xylene	ND	ug/kg	12.5	4.3	1	03/17/21 16:07	03/17/21 17:19	179601-23-1	
o-Xylene	ND	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 17:19	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	70-130		1	03/17/21 16:07	03/17/21 17:19	2037-26-5	
4-Bromofluorobenzene (S)	96	%	69-134		1	03/17/21 16:07	03/17/21 17:19	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/17/21 16:07	03/17/21 17:19	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	14.3	%	0.10	0.10	1		03/17/21 14:11		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (5.5-6.0) **Lab ID: 92528011002** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	557	196	1	03/17/21 16:29	03/18/21 09:44	83-32-9	
Acenaphthylene	ND	ug/kg	557	196	1	03/17/21 16:29	03/18/21 09:44	208-96-8	
Aniline	ND	ug/kg	557	218	1	03/17/21 16:29	03/18/21 09:44	62-53-3	
Anthracene	ND	ug/kg	557	182	1	03/17/21 16:29	03/18/21 09:44	120-12-7	
Benzo(a)anthracene	291J	ug/kg	557	186	1	03/17/21 16:29	03/18/21 09:44	56-55-3	
Benzo(a)pyrene	254J	ug/kg	557	192	1	03/17/21 16:29	03/18/21 09:44	50-32-8	
Benzo(b)fluoranthene	330J	ug/kg	557	186	1	03/17/21 16:29	03/18/21 09:44	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	557	216	1	03/17/21 16:29	03/18/21 09:44	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	557	196	1	03/17/21 16:29	03/18/21 09:44	207-08-9	
Benzoic Acid	ND	ug/kg	2790	1200	1	03/17/21 16:29	03/18/21 09:44	65-85-0	
Benzyl alcohol	ND	ug/kg	1110	422	1	03/17/21 16:29	03/18/21 09:44	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	557	214	1	03/17/21 16:29	03/18/21 09:44	101-55-3	
Butylbenzylphthalate	ND	ug/kg	557	235	1	03/17/21 16:29	03/18/21 09:44	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	1110	392	1	03/17/21 16:29	03/18/21 09:44	59-50-7	
4-Chloroaniline	ND	ug/kg	1110	437	1	03/17/21 16:29	03/18/21 09:44	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	557	231	1	03/17/21 16:29	03/18/21 09:44	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	557	209	1	03/17/21 16:29	03/18/21 09:44	111-44-4	
2-Chloronaphthalene	ND	ug/kg	557	221	1	03/17/21 16:29	03/18/21 09:44	91-58-7	
2-Chlorophenol	ND	ug/kg	557	209	1	03/17/21 16:29	03/18/21 09:44	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	557	208	1	03/17/21 16:29	03/18/21 09:44	7005-72-3	
Chrysene	271J	ug/kg	557	203	1	03/17/21 16:29	03/18/21 09:44	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	557	214	1	03/17/21 16:29	03/18/21 09:44	53-70-3	
Dibenzofuran	ND	ug/kg	557	201	1	03/17/21 16:29	03/18/21 09:44	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	1110	376	1	03/17/21 16:29	03/18/21 09:44	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	557	218	1	03/17/21 16:29	03/18/21 09:44	120-83-2	
Diethylphthalate	ND	ug/kg	557	204	1	03/17/21 16:29	03/18/21 09:44	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	557	231	1	03/17/21 16:29	03/18/21 09:44	105-67-9	
Dimethylphthalate	ND	ug/kg	557	203	1	03/17/21 16:29	03/18/21 09:44	131-11-3	
Di-n-butylphthalate	ND	ug/kg	557	187	1	03/17/21 16:29	03/18/21 09:44	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	1110	520	1	03/17/21 16:29	03/18/21 09:44	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2790	1720	1	03/17/21 16:29	03/18/21 09:44	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	557	214	1	03/17/21 16:29	03/18/21 09:44	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	557	204	1	03/17/21 16:29	03/18/21 09:44	606-20-2	
Di-n-octylphthalate	ND	ug/kg	557	219	1	03/17/21 16:29	03/18/21 09:44	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	557	216	1	03/17/21 16:29	03/18/21 09:44	117-81-7	
Fluoranthene	574	ug/kg	557	191	1	03/17/21 16:29	03/18/21 09:44	206-44-0	
Fluorene	ND	ug/kg	557	196	1	03/17/21 16:29	03/18/21 09:44	86-73-7	
Hexachlorobenzene	ND	ug/kg	557	218	1	03/17/21 16:29	03/18/21 09:44	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	557	319	1	03/17/21 16:29	03/18/21 09:44	77-47-4	
Hexachloroethane	ND	ug/kg	557	213	1	03/17/21 16:29	03/18/21 09:44	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	557	219	1	03/17/21 16:29	03/18/21 09:44	193-39-5	
Isophorone	ND	ug/kg	557	248	1	03/17/21 16:29	03/18/21 09:44	78-59-1	
1-Methylnaphthalene	ND	ug/kg	557	196	1	03/17/21 16:29	03/18/21 09:44	90-12-0	
2-Methylnaphthalene	ND	ug/kg	557	223	1	03/17/21 16:29	03/18/21 09:44	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (5.5-6.0) **Lab ID: 92528011002** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	557	228	1	03/17/21 16:29	03/18/21 09:44	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	557	224	1	03/17/21 16:29	03/18/21 09:44	15831-10-4	
2-Nitroaniline	ND	ug/kg	2790	456	1	03/17/21 16:29	03/18/21 09:44	88-74-4	
3-Nitroaniline	ND	ug/kg	2790	437	1	03/17/21 16:29	03/18/21 09:44	99-09-2	
4-Nitroaniline	ND	ug/kg	1110	424	1	03/17/21 16:29	03/18/21 09:44	100-01-6	
Nitrobenzene	ND	ug/kg	557	258	1	03/17/21 16:29	03/18/21 09:44	98-95-3	
2-Nitrophenol	ND	ug/kg	557	241	1	03/17/21 16:29	03/18/21 09:44	88-75-5	
4-Nitrophenol	ND	ug/kg	2790	1080	1	03/17/21 16:29	03/18/21 09:44	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	557	187	1	03/17/21 16:29	03/18/21 09:44	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	557	209	1	03/17/21 16:29	03/18/21 09:44	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	557	197	1	03/17/21 16:29	03/18/21 09:44	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	557	265	1	03/17/21 16:29	03/18/21 09:44	108-60-1	
Pentachlorophenol	ND	ug/kg	1110	545	1	03/17/21 16:29	03/18/21 09:44	87-86-5	
Phenanthrene	219J	ug/kg	557	182	1	03/17/21 16:29	03/18/21 09:44	85-01-8	
Phenol	ND	ug/kg	557	248	1	03/17/21 16:29	03/18/21 09:44	108-95-2	
Pyrene	556J	ug/kg	557	226	1	03/17/21 16:29	03/18/21 09:44	129-00-0	
Pyridine	ND	ug/kg	557	176	1	03/17/21 16:29	03/18/21 09:44	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	557	255	1	03/17/21 16:29	03/18/21 09:44	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	557	230	1	03/17/21 16:29	03/18/21 09:44	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	66	%	21-130		1	03/17/21 16:29	03/18/21 09:44	4165-60-0	
2-Fluorobiphenyl (S)	54	%	19-130		1	03/17/21 16:29	03/18/21 09:44	321-60-8	
Terphenyl-d14 (S)	96	%	15-130		1	03/17/21 16:29	03/18/21 09:44	1718-51-0	
Phenol-d6 (S)	70	%	18-130		1	03/17/21 16:29	03/18/21 09:44	13127-88-3	
2-Fluorophenol (S)	66	%	18-130		1	03/17/21 16:29	03/18/21 09:44	367-12-4	
2,4,6-Tribromophenol (S)	84	%	18-130		1	03/17/21 16:29	03/18/21 09:44	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	139J	ug/kg	386	124	1	03/17/21 16:07	03/17/21 22:35	67-64-1	
Benzene	ND	ug/kg	19.3	7.7	1	03/17/21 16:07	03/17/21 22:35	71-43-2	
Bromobenzene	ND	ug/kg	19.3	6.3	1	03/17/21 16:07	03/17/21 22:35	108-86-1	
Bromochloromethane	ND	ug/kg	19.3	5.7	1	03/17/21 16:07	03/17/21 22:35	74-97-5	
Bromodichloromethane	ND	ug/kg	19.3	7.5	1	03/17/21 16:07	03/17/21 22:35	75-27-4	
Bromoform	ND	ug/kg	19.3	6.8	1	03/17/21 16:07	03/17/21 22:35	75-25-2	
Bromomethane	ND	ug/kg	38.6	30.5	1	03/17/21 16:07	03/17/21 22:35	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	97.5J	ug/kg	386	92.7	1	03/17/21 16:07	03/17/21 22:35	78-93-3	
n-Butylbenzene	ND	ug/kg	19.3	9.1	1	03/17/21 16:07	03/17/21 22:35	104-51-8	
sec-Butylbenzene	ND	ug/kg	19.3	8.5	1	03/17/21 16:07	03/17/21 22:35	135-98-8	
tert-Butylbenzene	ND	ug/kg	19.3	6.9	1	03/17/21 16:07	03/17/21 22:35	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	19.3	7.2	1	03/17/21 16:07	03/17/21 22:35	56-23-5	
Chlorobenzene	11.9J	ug/kg	19.3	3.7	1	03/17/21 16:07	03/17/21 22:35	108-90-7	
Chloroethane	ND	ug/kg	38.6	14.9	1	03/17/21 16:07	03/17/21 22:35	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (5.5-6.0) **Lab ID: 92528011002** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	19.3	11.7	1	03/17/21 16:07	03/17/21 22:35	67-66-3	
Chloromethane	ND	ug/kg	38.6	16.2	1	03/17/21 16:07	03/17/21 22:35	74-87-3	
2-Chlorotoluene	ND	ug/kg	19.3	6.8	1	03/17/21 16:07	03/17/21 22:35	95-49-8	
4-Chlorotoluene	ND	ug/kg	19.3	3.4	1	03/17/21 16:07	03/17/21 22:35	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	19.3	7.5	1	03/17/21 16:07	03/17/21 22:35	96-12-8	
Dibromochloromethane	ND	ug/kg	19.3	10.9	1	03/17/21 16:07	03/17/21 22:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	19.3	8.5	1	03/17/21 16:07	03/17/21 22:35	106-93-4	
Dibromomethane	ND	ug/kg	19.3	4.1	1	03/17/21 16:07	03/17/21 22:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	19.3	7.0	1	03/17/21 16:07	03/17/21 22:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	19.3	6.0	1	03/17/21 16:07	03/17/21 22:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	19.3	5.0	1	03/17/21 16:07	03/17/21 22:35	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	38.6	8.4	1	03/17/21 16:07	03/17/21 22:35	75-71-8	
1,1-Dichloroethane	ND	ug/kg	19.3	8.0	1	03/17/21 16:07	03/17/21 22:35	75-34-3	
1,2-Dichloroethane	ND	ug/kg	19.3	12.8	1	03/17/21 16:07	03/17/21 22:35	107-06-2	
1,1-Dichloroethene	ND	ug/kg	19.3	8.0	1	03/17/21 16:07	03/17/21 22:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	19.3	6.6	1	03/17/21 16:07	03/17/21 22:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	19.3	6.8	1	03/17/21 16:07	03/17/21 22:35	156-60-5	
1,2-Dichloropropane	ND	ug/kg	19.3	5.8	1	03/17/21 16:07	03/17/21 22:35	78-87-5	
1,3-Dichloropropane	ND	ug/kg	19.3	6.0	1	03/17/21 16:07	03/17/21 22:35	142-28-9	
2,2-Dichloropropane	ND	ug/kg	19.3	6.3	1	03/17/21 16:07	03/17/21 22:35	594-20-7	
1,1-Dichloropropene	ND	ug/kg	19.3	9.3	1	03/17/21 16:07	03/17/21 22:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	19.3	5.3	1	03/17/21 16:07	03/17/21 22:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	19.3	6.6	1	03/17/21 16:07	03/17/21 22:35	10061-02-6	
Diisopropyl ether	ND	ug/kg	19.3	5.2	1	03/17/21 16:07	03/17/21 22:35	108-20-3	
Ethylbenzene	40.6	ug/kg	19.3	9.0	1	03/17/21 16:07	03/17/21 22:35	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	38.6	31.6	1	03/17/21 16:07	03/17/21 22:35	87-68-3	IK
2-Hexanone	ND	ug/kg	193	18.6	1	03/17/21 16:07	03/17/21 22:35	591-78-6	
Isopropylbenzene (Cumene)	95.2	ug/kg	19.3	6.6	1	03/17/21 16:07	03/17/21 22:35	98-82-8	
p-Isopropyltoluene	54.1	ug/kg	19.3	9.5	1	03/17/21 16:07	03/17/21 22:35	99-87-6	
Methylene Chloride	ND	ug/kg	77.3	52.9	1	03/17/21 16:07	03/17/21 22:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	193	18.6	1	03/17/21 16:07	03/17/21 22:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	19.3	7.2	1	03/17/21 16:07	03/17/21 22:35	1634-04-4	
Naphthalene	315	ug/kg	19.3	10.2	1	03/17/21 16:07	03/17/21 22:35	91-20-3	
n-Propylbenzene	ND	ug/kg	19.3	6.9	1	03/17/21 16:07	03/17/21 22:35	103-65-1	
Styrene	ND	ug/kg	19.3	5.1	1	03/17/21 16:07	03/17/21 22:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	19.3	7.4	1	03/17/21 16:07	03/17/21 22:35	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	19.3	5.1	1	03/17/21 16:07	03/17/21 22:35	79-34-5	
Tetrachloroethene	ND	ug/kg	19.3	6.1	1	03/17/21 16:07	03/17/21 22:35	127-18-4	
Toluene	32.5	ug/kg	19.3	5.5	1	03/17/21 16:07	03/17/21 22:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	19.3	15.6	1	03/17/21 16:07	03/17/21 22:35	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	19.3	16.2	1	03/17/21 16:07	03/17/21 22:35	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	19.3	10.0	1	03/17/21 16:07	03/17/21 22:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	19.3	6.4	1	03/17/21 16:07	03/17/21 22:35	79-00-5	
Trichloroethene	ND	ug/kg	19.3	5.0	1	03/17/21 16:07	03/17/21 22:35	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-13 (5.5-6.0) **Lab ID: 92528011002** Collected: 03/15/21 10:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	19.3	10.6	1	03/17/21 16:07	03/17/21 22:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	19.3	9.8	1	03/17/21 16:07	03/17/21 22:35	96-18-4	
1,2,4-Trimethylbenzene	66.7	ug/kg	19.3	5.3	1	03/17/21 16:07	03/17/21 22:35	95-63-6	
1,3,5-Trimethylbenzene	24.9	ug/kg	19.3	6.5	1	03/17/21 16:07	03/17/21 22:35	108-67-8	
Vinyl acetate	ND	ug/kg	193	14.1	1	03/17/21 16:07	03/17/21 22:35	108-05-4	
Vinyl chloride	ND	ug/kg	38.6	9.8	1	03/17/21 16:07	03/17/21 22:35	75-01-4	
Xylene (Total)	153	ug/kg	38.6	11.0	1	03/17/21 16:07	03/17/21 22:35	1330-20-7	
m&p-Xylene	90.6	ug/kg	38.6	13.2	1	03/17/21 16:07	03/17/21 22:35	179601-23-1	
o-Xylene	62.3	ug/kg	19.3	8.5	1	03/17/21 16:07	03/17/21 22:35	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/17/21 16:07	03/17/21 22:35	2037-26-5	
4-Bromofluorobenzene (S)	95	%	69-134		1	03/17/21 16:07	03/17/21 22:35	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/17/21 16:07	03/17/21 22:35	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	41.1	%	0.10	0.10	1		03/17/21 14:11		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (0.5-1.0) Lab ID: 92528011003 Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	368	129	1	03/17/21 16:29	03/18/21 10:14	83-32-9	
Acenaphthylene	ND	ug/kg	368	129	1	03/17/21 16:29	03/18/21 10:14	208-96-8	
Aniline	ND	ug/kg	368	144	1	03/17/21 16:29	03/18/21 10:14	62-53-3	
Anthracene	ND	ug/kg	368	120	1	03/17/21 16:29	03/18/21 10:14	120-12-7	
Benzo(a)anthracene	ND	ug/kg	368	123	1	03/17/21 16:29	03/18/21 10:14	56-55-3	
Benzo(a)pyrene	ND	ug/kg	368	127	1	03/17/21 16:29	03/18/21 10:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	368	123	1	03/17/21 16:29	03/18/21 10:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	368	143	1	03/17/21 16:29	03/18/21 10:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	368	129	1	03/17/21 16:29	03/18/21 10:14	207-08-9	
Benzoic Acid	ND	ug/kg	1840	790	1	03/17/21 16:29	03/18/21 10:14	65-85-0	
Benzyl alcohol	ND	ug/kg	736	279	1	03/17/21 16:29	03/18/21 10:14	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	368	142	1	03/17/21 16:29	03/18/21 10:14	101-55-3	
Butylbenzylphthalate	ND	ug/kg	368	155	1	03/17/21 16:29	03/18/21 10:14	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	736	259	1	03/17/21 16:29	03/18/21 10:14	59-50-7	
4-Chloroaniline	ND	ug/kg	736	289	1	03/17/21 16:29	03/18/21 10:14	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	368	153	1	03/17/21 16:29	03/18/21 10:14	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	368	138	1	03/17/21 16:29	03/18/21 10:14	111-44-4	
2-Chloronaphthalene	ND	ug/kg	368	146	1	03/17/21 16:29	03/18/21 10:14	91-58-7	
2-Chlorophenol	ND	ug/kg	368	138	1	03/17/21 16:29	03/18/21 10:14	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	368	137	1	03/17/21 16:29	03/18/21 10:14	7005-72-3	
Chrysene	ND	ug/kg	368	134	1	03/17/21 16:29	03/18/21 10:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	368	142	1	03/17/21 16:29	03/18/21 10:14	53-70-3	
Dibenzofuran	ND	ug/kg	368	133	1	03/17/21 16:29	03/18/21 10:14	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	736	249	1	03/17/21 16:29	03/18/21 10:14	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	368	144	1	03/17/21 16:29	03/18/21 10:14	120-83-2	
Diethylphthalate	ND	ug/kg	368	135	1	03/17/21 16:29	03/18/21 10:14	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	368	153	1	03/17/21 16:29	03/18/21 10:14	105-67-9	
Dimethylphthalate	ND	ug/kg	368	134	1	03/17/21 16:29	03/18/21 10:14	131-11-3	
Di-n-butylphthalate	ND	ug/kg	368	124	1	03/17/21 16:29	03/18/21 10:14	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	736	343	1	03/17/21 16:29	03/18/21 10:14	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1840	1140	1	03/17/21 16:29	03/18/21 10:14	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	368	142	1	03/17/21 16:29	03/18/21 10:14	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	368	135	1	03/17/21 16:29	03/18/21 10:14	606-20-2	
Di-n-octylphthalate	ND	ug/kg	368	145	1	03/17/21 16:29	03/18/21 10:14	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	368	143	1	03/17/21 16:29	03/18/21 10:14	117-81-7	
Fluoranthene	ND	ug/kg	368	126	1	03/17/21 16:29	03/18/21 10:14	206-44-0	
Fluorene	ND	ug/kg	368	129	1	03/17/21 16:29	03/18/21 10:14	86-73-7	
Hexachlorobenzene	ND	ug/kg	368	144	1	03/17/21 16:29	03/18/21 10:14	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	368	211	1	03/17/21 16:29	03/18/21 10:14	77-47-4	
Hexachloroethane	ND	ug/kg	368	140	1	03/17/21 16:29	03/18/21 10:14	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	368	145	1	03/17/21 16:29	03/18/21 10:14	193-39-5	
Isophorone	ND	ug/kg	368	164	1	03/17/21 16:29	03/18/21 10:14	78-59-1	
1-Methylnaphthalene	ND	ug/kg	368	129	1	03/17/21 16:29	03/18/21 10:14	90-12-0	
2-Methylnaphthalene	ND	ug/kg	368	147	1	03/17/21 16:29	03/18/21 10:14	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-14 (0.5-1.0) **Lab ID: 92528011003** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	368	151	1	03/17/21 16:29	03/18/21 10:14	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	368	148	1	03/17/21 16:29	03/18/21 10:14	15831-10-4	
2-Nitroaniline	ND	ug/kg	1840	301	1	03/17/21 16:29	03/18/21 10:14	88-74-4	
3-Nitroaniline	ND	ug/kg	1840	289	1	03/17/21 16:29	03/18/21 10:14	99-09-2	
4-Nitroaniline	ND	ug/kg	736	280	1	03/17/21 16:29	03/18/21 10:14	100-01-6	
Nitrobenzene	ND	ug/kg	368	171	1	03/17/21 16:29	03/18/21 10:14	98-95-3	
2-Nitrophenol	ND	ug/kg	368	159	1	03/17/21 16:29	03/18/21 10:14	88-75-5	
4-Nitrophenol	ND	ug/kg	1840	711	1	03/17/21 16:29	03/18/21 10:14	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	368	124	1	03/17/21 16:29	03/18/21 10:14	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	368	138	1	03/17/21 16:29	03/18/21 10:14	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	368	130	1	03/17/21 16:29	03/18/21 10:14	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	368	175	1	03/17/21 16:29	03/18/21 10:14	108-60-1	
Pentachlorophenol	ND	ug/kg	736	360	1	03/17/21 16:29	03/18/21 10:14	87-86-5	
Phenanthrene	ND	ug/kg	368	120	1	03/17/21 16:29	03/18/21 10:14	85-01-8	
Phenol	ND	ug/kg	368	164	1	03/17/21 16:29	03/18/21 10:14	108-95-2	
Pyrene	ND	ug/kg	368	149	1	03/17/21 16:29	03/18/21 10:14	129-00-0	
Pyridine	ND	ug/kg	368	116	1	03/17/21 16:29	03/18/21 10:14	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	368	168	1	03/17/21 16:29	03/18/21 10:14	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	368	152	1	03/17/21 16:29	03/18/21 10:14	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	71	%	21-130		1	03/17/21 16:29	03/18/21 10:14	4165-60-0	
2-Fluorobiphenyl (S)	71	%	19-130		1	03/17/21 16:29	03/18/21 10:14	321-60-8	
Terphenyl-d14 (S)	101	%	15-130		1	03/17/21 16:29	03/18/21 10:14	1718-51-0	
Phenol-d6 (S)	68	%	18-130		1	03/17/21 16:29	03/18/21 10:14	13127-88-3	
2-Fluorophenol (S)	57	%	18-130		1	03/17/21 16:29	03/18/21 10:14	367-12-4	
2,4,6-Tribromophenol (S)	57	%	18-130		1	03/17/21 16:29	03/18/21 10:14	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	139	44.7	1	03/17/21 16:07	03/17/21 17:54	67-64-1	
Benzene	ND	ug/kg	7.0	2.8	1	03/17/21 16:07	03/17/21 17:54	71-43-2	
Bromobenzene	ND	ug/kg	7.0	2.3	1	03/17/21 16:07	03/17/21 17:54	108-86-1	
Bromochloromethane	ND	ug/kg	7.0	2.1	1	03/17/21 16:07	03/17/21 17:54	74-97-5	
Bromodichloromethane	ND	ug/kg	7.0	2.7	1	03/17/21 16:07	03/17/21 17:54	75-27-4	
Bromoform	ND	ug/kg	7.0	2.5	1	03/17/21 16:07	03/17/21 17:54	75-25-2	
Bromomethane	ND	ug/kg	13.9	11.0	1	03/17/21 16:07	03/17/21 17:54	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	139	33.4	1	03/17/21 16:07	03/17/21 17:54	78-93-3	
n-Butylbenzene	ND	ug/kg	7.0	3.3	1	03/17/21 16:07	03/17/21 17:54	104-51-8	
sec-Butylbenzene	ND	ug/kg	7.0	3.1	1	03/17/21 16:07	03/17/21 17:54	135-98-8	
tert-Butylbenzene	ND	ug/kg	7.0	2.5	1	03/17/21 16:07	03/17/21 17:54	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	7.0	2.6	1	03/17/21 16:07	03/17/21 17:54	56-23-5	
Chlorobenzene	ND	ug/kg	7.0	1.3	1	03/17/21 16:07	03/17/21 17:54	108-90-7	
Chloroethane	ND	ug/kg	13.9	5.4	1	03/17/21 16:07	03/17/21 17:54	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (0.5-1.0) Lab ID: 92528011003 Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	7.0	4.2	1	03/17/21 16:07	03/17/21 17:54	67-66-3	
Chloromethane	ND	ug/kg	13.9	5.9	1	03/17/21 16:07	03/17/21 17:54	74-87-3	
2-Chlorotoluene	ND	ug/kg	7.0	2.5	1	03/17/21 16:07	03/17/21 17:54	95-49-8	
4-Chlorotoluene	ND	ug/kg	7.0	1.2	1	03/17/21 16:07	03/17/21 17:54	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.0	2.7	1	03/17/21 16:07	03/17/21 17:54	96-12-8	
Dibromochloromethane	ND	ug/kg	7.0	3.9	1	03/17/21 16:07	03/17/21 17:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	7.0	3.1	1	03/17/21 16:07	03/17/21 17:54	106-93-4	
Dibromomethane	ND	ug/kg	7.0	1.5	1	03/17/21 16:07	03/17/21 17:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	7.0	2.5	1	03/17/21 16:07	03/17/21 17:54	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	7.0	2.2	1	03/17/21 16:07	03/17/21 17:54	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	7.0	1.8	1	03/17/21 16:07	03/17/21 17:54	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	13.9	3.0	1	03/17/21 16:07	03/17/21 17:54	75-71-8	
1,1-Dichloroethane	ND	ug/kg	7.0	2.9	1	03/17/21 16:07	03/17/21 17:54	75-34-3	
1,2-Dichloroethane	ND	ug/kg	7.0	4.6	1	03/17/21 16:07	03/17/21 17:54	107-06-2	
1,1-Dichloroethene	ND	ug/kg	7.0	2.9	1	03/17/21 16:07	03/17/21 17:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	7.0	2.4	1	03/17/21 16:07	03/17/21 17:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	7.0	2.4	1	03/17/21 16:07	03/17/21 17:54	156-60-5	
1,2-Dichloropropane	ND	ug/kg	7.0	2.1	1	03/17/21 16:07	03/17/21 17:54	78-87-5	
1,3-Dichloropropane	ND	ug/kg	7.0	2.2	1	03/17/21 16:07	03/17/21 17:54	142-28-9	
2,2-Dichloropropane	ND	ug/kg	7.0	2.3	1	03/17/21 16:07	03/17/21 17:54	594-20-7	
1,1-Dichloropropene	ND	ug/kg	7.0	3.3	1	03/17/21 16:07	03/17/21 17:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	7.0	1.9	1	03/17/21 16:07	03/17/21 17:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	7.0	2.4	1	03/17/21 16:07	03/17/21 17:54	10061-02-6	
Diisopropyl ether	ND	ug/kg	7.0	1.9	1	03/17/21 16:07	03/17/21 17:54	108-20-3	
Ethylbenzene	ND	ug/kg	7.0	3.2	1	03/17/21 16:07	03/17/21 17:54	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	13.9	11.4	1	03/17/21 16:07	03/17/21 17:54	87-68-3	IK
2-Hexanone	ND	ug/kg	69.6	6.7	1	03/17/21 16:07	03/17/21 17:54	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	7.0	2.4	1	03/17/21 16:07	03/17/21 17:54	98-82-8	
p-Isopropyltoluene	ND	ug/kg	7.0	3.4	1	03/17/21 16:07	03/17/21 17:54	99-87-6	
Methylene Chloride	ND	ug/kg	27.9	19.1	1	03/17/21 16:07	03/17/21 17:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	69.6	6.7	1	03/17/21 16:07	03/17/21 17:54	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	7.0	2.6	1	03/17/21 16:07	03/17/21 17:54	1634-04-4	
Naphthalene	29.7	ug/kg	7.0	3.7	1	03/17/21 16:07	03/17/21 17:54	91-20-3	
n-Propylbenzene	ND	ug/kg	7.0	2.5	1	03/17/21 16:07	03/17/21 17:54	103-65-1	
Styrene	ND	ug/kg	7.0	1.8	1	03/17/21 16:07	03/17/21 17:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	7.0	2.7	1	03/17/21 16:07	03/17/21 17:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	7.0	1.8	1	03/17/21 16:07	03/17/21 17:54	79-34-5	
Tetrachloroethene	ND	ug/kg	7.0	2.2	1	03/17/21 16:07	03/17/21 17:54	127-18-4	
Toluene	12.8	ug/kg	7.0	2.0	1	03/17/21 16:07	03/17/21 17:54	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	7.0	5.6	1	03/17/21 16:07	03/17/21 17:54	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	7.0	5.9	1	03/17/21 16:07	03/17/21 17:54	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	7.0	3.6	1	03/17/21 16:07	03/17/21 17:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	7.0	2.3	1	03/17/21 16:07	03/17/21 17:54	79-00-5	
Trichloroethene	ND	ug/kg	7.0	1.8	1	03/17/21 16:07	03/17/21 17:54	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (0.5-1.0) **Lab ID: 92528011003** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	7.0	3.8	1	03/17/21 16:07	03/17/21 17:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	7.0	3.5	1	03/17/21 16:07	03/17/21 17:54	96-18-4	
1,2,4-Trimethylbenzene	11.0	ug/kg	7.0	1.9	1	03/17/21 16:07	03/17/21 17:54	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	7.0	2.3	1	03/17/21 16:07	03/17/21 17:54	108-67-8	
Vinyl acetate	ND	ug/kg	69.6	5.1	1	03/17/21 16:07	03/17/21 17:54	108-05-4	
Vinyl chloride	ND	ug/kg	13.9	3.5	1	03/17/21 16:07	03/17/21 17:54	75-01-4	
Xylene (Total)	32.5	ug/kg	13.9	4.0	1	03/17/21 16:07	03/17/21 17:54	1330-20-7	
m&p-Xylene	20.5	ug/kg	13.9	4.8	1	03/17/21 16:07	03/17/21 17:54	179601-23-1	
o-Xylene	12.0	ug/kg	7.0	3.1	1	03/17/21 16:07	03/17/21 17:54	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/17/21 16:07	03/17/21 17:54	2037-26-5	
4-Bromofluorobenzene (S)	95	%	69-134		1	03/17/21 16:07	03/17/21 17:54	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1	03/17/21 16:07	03/17/21 17:54	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	11.8	%	0.10	0.10	1		03/17/21 14:11		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (5.5-6.0) **Lab ID: 92528011004** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	493	173	1	03/17/21 16:29	03/18/21 11:15	83-32-9	
Acenaphthylene	ND	ug/kg	493	173	1	03/17/21 16:29	03/18/21 11:15	208-96-8	
Aniline	ND	ug/kg	493	193	1	03/17/21 16:29	03/18/21 11:15	62-53-3	
Anthracene	ND	ug/kg	493	161	1	03/17/21 16:29	03/18/21 11:15	120-12-7	
Benzo(a)anthracene	269J	ug/kg	493	164	1	03/17/21 16:29	03/18/21 11:15	56-55-3	
Benzo(a)pyrene	231J	ug/kg	493	170	1	03/17/21 16:29	03/18/21 11:15	50-32-8	
Benzo(b)fluoranthene	333J	ug/kg	493	164	1	03/17/21 16:29	03/18/21 11:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	493	191	1	03/17/21 16:29	03/18/21 11:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	493	173	1	03/17/21 16:29	03/18/21 11:15	207-08-9	
Benzoic Acid	ND	ug/kg	2470	1060	1	03/17/21 16:29	03/18/21 11:15	65-85-0	
Benzyl alcohol	ND	ug/kg	986	374	1	03/17/21 16:29	03/18/21 11:15	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	493	190	1	03/17/21 16:29	03/18/21 11:15	101-55-3	
Butylbenzylphthalate	ND	ug/kg	493	208	1	03/17/21 16:29	03/18/21 11:15	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	986	347	1	03/17/21 16:29	03/18/21 11:15	59-50-7	
4-Chloroaniline	ND	ug/kg	986	387	1	03/17/21 16:29	03/18/21 11:15	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	493	205	1	03/17/21 16:29	03/18/21 11:15	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	493	185	1	03/17/21 16:29	03/18/21 11:15	111-44-4	
2-Chloronaphthalene	ND	ug/kg	493	196	1	03/17/21 16:29	03/18/21 11:15	91-58-7	
2-Chlorophenol	ND	ug/kg	493	185	1	03/17/21 16:29	03/18/21 11:15	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	493	184	1	03/17/21 16:29	03/18/21 11:15	7005-72-3	
Chrysene	255J	ug/kg	493	179	1	03/17/21 16:29	03/18/21 11:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	493	190	1	03/17/21 16:29	03/18/21 11:15	53-70-3	
Dibenzofuran	ND	ug/kg	493	178	1	03/17/21 16:29	03/18/21 11:15	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	986	333	1	03/17/21 16:29	03/18/21 11:15	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	493	193	1	03/17/21 16:29	03/18/21 11:15	120-83-2	
Diethylphthalate	ND	ug/kg	493	181	1	03/17/21 16:29	03/18/21 11:15	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	493	205	1	03/17/21 16:29	03/18/21 11:15	105-67-9	
Dimethylphthalate	ND	ug/kg	493	179	1	03/17/21 16:29	03/18/21 11:15	131-11-3	
Di-n-butylphthalate	ND	ug/kg	493	166	1	03/17/21 16:29	03/18/21 11:15	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	986	460	1	03/17/21 16:29	03/18/21 11:15	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2470	1520	1	03/17/21 16:29	03/18/21 11:15	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	493	190	1	03/17/21 16:29	03/18/21 11:15	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	493	181	1	03/17/21 16:29	03/18/21 11:15	606-20-2	
Di-n-octylphthalate	ND	ug/kg	493	194	1	03/17/21 16:29	03/18/21 11:15	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	493	191	1	03/17/21 16:29	03/18/21 11:15	117-81-7	
Fluoranthene	598	ug/kg	493	169	1	03/17/21 16:29	03/18/21 11:15	206-44-0	
Fluorene	ND	ug/kg	493	173	1	03/17/21 16:29	03/18/21 11:15	86-73-7	
Hexachlorobenzene	ND	ug/kg	493	193	1	03/17/21 16:29	03/18/21 11:15	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	493	282	1	03/17/21 16:29	03/18/21 11:15	77-47-4	
Hexachloroethane	ND	ug/kg	493	188	1	03/17/21 16:29	03/18/21 11:15	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	493	194	1	03/17/21 16:29	03/18/21 11:15	193-39-5	
Isophorone	ND	ug/kg	493	220	1	03/17/21 16:29	03/18/21 11:15	78-59-1	
1-Methylnaphthalene	ND	ug/kg	493	173	1	03/17/21 16:29	03/18/21 11:15	90-12-0	
2-Methylnaphthalene	ND	ug/kg	493	197	1	03/17/21 16:29	03/18/21 11:15	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (5.5-6.0) **Lab ID: 92528011004** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	493	202	1	03/17/21 16:29	03/18/21 11:15	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	493	199	1	03/17/21 16:29	03/18/21 11:15	15831-10-4	
2-Nitroaniline	ND	ug/kg	2470	403	1	03/17/21 16:29	03/18/21 11:15	88-74-4	
3-Nitroaniline	ND	ug/kg	2470	387	1	03/17/21 16:29	03/18/21 11:15	99-09-2	
4-Nitroaniline	ND	ug/kg	986	375	1	03/17/21 16:29	03/18/21 11:15	100-01-6	
Nitrobenzene	ND	ug/kg	493	229	1	03/17/21 16:29	03/18/21 11:15	98-95-3	
2-Nitrophenol	ND	ug/kg	493	214	1	03/17/21 16:29	03/18/21 11:15	88-75-5	
4-Nitrophenol	ND	ug/kg	2470	953	1	03/17/21 16:29	03/18/21 11:15	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	493	166	1	03/17/21 16:29	03/18/21 11:15	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	493	185	1	03/17/21 16:29	03/18/21 11:15	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	493	175	1	03/17/21 16:29	03/18/21 11:15	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	493	235	1	03/17/21 16:29	03/18/21 11:15	108-60-1	
Pentachlorophenol	ND	ug/kg	986	483	1	03/17/21 16:29	03/18/21 11:15	87-86-5	
Phenanthrene	406J	ug/kg	493	161	1	03/17/21 16:29	03/18/21 11:15	85-01-8	
Phenol	ND	ug/kg	493	220	1	03/17/21 16:29	03/18/21 11:15	108-95-2	
Pyrene	505	ug/kg	493	200	1	03/17/21 16:29	03/18/21 11:15	129-00-0	
Pyridine	ND	ug/kg	493	155	1	03/17/21 16:29	03/18/21 11:15	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	493	226	1	03/17/21 16:29	03/18/21 11:15	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	493	203	1	03/17/21 16:29	03/18/21 11:15	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	53	%	21-130		1	03/17/21 16:29	03/18/21 11:15	4165-60-0	
2-Fluorobiphenyl (S)	43	%	19-130		1	03/17/21 16:29	03/18/21 11:15	321-60-8	
Terphenyl-d14 (S)	70	%	15-130		1	03/17/21 16:29	03/18/21 11:15	1718-51-0	
Phenol-d6 (S)	60	%	18-130		1	03/17/21 16:29	03/18/21 11:15	13127-88-3	
2-Fluorophenol (S)	56	%	18-130		1	03/17/21 16:29	03/18/21 11:15	367-12-4	
2,4,6-Tribromophenol (S)	69	%	18-130		1	03/17/21 16:29	03/18/21 11:15	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	164J	ug/kg	256	82.1	1	03/17/21 16:07	03/17/21 22:53	67-64-1	
Benzene	ND	ug/kg	12.8	5.1	1	03/17/21 16:07	03/17/21 22:53	71-43-2	
Bromobenzene	ND	ug/kg	12.8	4.2	1	03/17/21 16:07	03/17/21 22:53	108-86-1	
Bromochloromethane	ND	ug/kg	12.8	3.8	1	03/17/21 16:07	03/17/21 22:53	74-97-5	
Bromodichloromethane	ND	ug/kg	12.8	4.9	1	03/17/21 16:07	03/17/21 22:53	75-27-4	
Bromoform	ND	ug/kg	12.8	4.5	1	03/17/21 16:07	03/17/21 22:53	75-25-2	
Bromomethane	ND	ug/kg	25.6	20.2	1	03/17/21 16:07	03/17/21 22:53	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	81.0J	ug/kg	256	61.4	1	03/17/21 16:07	03/17/21 22:53	78-93-3	
n-Butylbenzene	ND	ug/kg	12.8	6.0	1	03/17/21 16:07	03/17/21 22:53	104-51-8	
sec-Butylbenzene	ND	ug/kg	12.8	5.6	1	03/17/21 16:07	03/17/21 22:53	135-98-8	
tert-Butylbenzene	ND	ug/kg	12.8	4.6	1	03/17/21 16:07	03/17/21 22:53	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	12.8	4.8	1	03/17/21 16:07	03/17/21 22:53	56-23-5	
Chlorobenzene	20.8	ug/kg	12.8	2.5	1	03/17/21 16:07	03/17/21 22:53	108-90-7	
Chloroethane	ND	ug/kg	25.6	9.9	1	03/17/21 16:07	03/17/21 22:53	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-14 (5.5-6.0) **Lab ID: 92528011004** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	12.8	7.8	1	03/17/21 16:07	03/17/21 22:53	67-66-3	
Chloromethane	ND	ug/kg	25.6	10.7	1	03/17/21 16:07	03/17/21 22:53	74-87-3	
2-Chlorotoluene	ND	ug/kg	12.8	4.5	1	03/17/21 16:07	03/17/21 22:53	95-49-8	
4-Chlorotoluene	ND	ug/kg	12.8	2.3	1	03/17/21 16:07	03/17/21 22:53	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	12.8	5.0	1	03/17/21 16:07	03/17/21 22:53	96-12-8	
Dibromochloromethane	ND	ug/kg	12.8	7.2	1	03/17/21 16:07	03/17/21 22:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	12.8	5.6	1	03/17/21 16:07	03/17/21 22:53	106-93-4	
Dibromomethane	ND	ug/kg	12.8	2.7	1	03/17/21 16:07	03/17/21 22:53	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	12.8	4.6	1	03/17/21 16:07	03/17/21 22:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	12.8	4.0	1	03/17/21 16:07	03/17/21 22:53	541-73-1	
1,4-Dichlorobenzene	6.5J	ug/kg	12.8	3.3	1	03/17/21 16:07	03/17/21 22:53	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	25.6	5.6	1	03/17/21 16:07	03/17/21 22:53	75-71-8	
1,1-Dichloroethane	ND	ug/kg	12.8	5.3	1	03/17/21 16:07	03/17/21 22:53	75-34-3	
1,2-Dichloroethane	ND	ug/kg	12.8	8.5	1	03/17/21 16:07	03/17/21 22:53	107-06-2	
1,1-Dichloroethene	ND	ug/kg	12.8	5.3	1	03/17/21 16:07	03/17/21 22:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	12.8	4.4	1	03/17/21 16:07	03/17/21 22:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	12.8	4.5	1	03/17/21 16:07	03/17/21 22:53	156-60-5	
1,2-Dichloropropane	ND	ug/kg	12.8	3.8	1	03/17/21 16:07	03/17/21 22:53	78-87-5	
1,3-Dichloropropane	ND	ug/kg	12.8	4.0	1	03/17/21 16:07	03/17/21 22:53	142-28-9	
2,2-Dichloropropane	ND	ug/kg	12.8	4.2	1	03/17/21 16:07	03/17/21 22:53	594-20-7	
1,1-Dichloropropene	ND	ug/kg	12.8	6.1	1	03/17/21 16:07	03/17/21 22:53	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	12.8	3.5	1	03/17/21 16:07	03/17/21 22:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	12.8	4.4	1	03/17/21 16:07	03/17/21 22:53	10061-02-6	
Diisopropyl ether	ND	ug/kg	12.8	3.5	1	03/17/21 16:07	03/17/21 22:53	108-20-3	
Ethylbenzene	32.8	ug/kg	12.8	6.0	1	03/17/21 16:07	03/17/21 22:53	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	25.6	20.9	1	03/17/21 16:07	03/17/21 22:53	87-68-3	IK
2-Hexanone	ND	ug/kg	128	12.3	1	03/17/21 16:07	03/17/21 22:53	591-78-6	
Isopropylbenzene (Cumene)	97.8	ug/kg	12.8	4.3	1	03/17/21 16:07	03/17/21 22:53	98-82-8	
p-Isopropyltoluene	70.4	ug/kg	12.8	6.3	1	03/17/21 16:07	03/17/21 22:53	99-87-6	
Methylene Chloride	ND	ug/kg	51.2	35.0	1	03/17/21 16:07	03/17/21 22:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	128	12.3	1	03/17/21 16:07	03/17/21 22:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	12.8	4.8	1	03/17/21 16:07	03/17/21 22:53	1634-04-4	
Naphthalene	203	ug/kg	12.8	6.7	1	03/17/21 16:07	03/17/21 22:53	91-20-3	
n-Propylbenzene	ND	ug/kg	12.8	4.6	1	03/17/21 16:07	03/17/21 22:53	103-65-1	
Styrene	ND	ug/kg	12.8	3.4	1	03/17/21 16:07	03/17/21 22:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	12.8	4.9	1	03/17/21 16:07	03/17/21 22:53	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	12.8	3.4	1	03/17/21 16:07	03/17/21 22:53	79-34-5	
Tetrachloroethene	ND	ug/kg	12.8	4.0	1	03/17/21 16:07	03/17/21 22:53	127-18-4	
Toluene	20.0	ug/kg	12.8	3.6	1	03/17/21 16:07	03/17/21 22:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	12.8	10.3	1	03/17/21 16:07	03/17/21 22:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	12.8	10.7	1	03/17/21 16:07	03/17/21 22:53	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	12.8	6.7	1	03/17/21 16:07	03/17/21 22:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	12.8	4.2	1	03/17/21 16:07	03/17/21 22:53	79-00-5	
Trichloroethene	ND	ug/kg	12.8	3.3	1	03/17/21 16:07	03/17/21 22:53	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-14 (5.5-6.0) **Lab ID: 92528011004** Collected: 03/15/21 10:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	12.8	7.0	1	03/17/21 16:07	03/17/21 22:53	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	12.8	6.5	1	03/17/21 16:07	03/17/21 22:53	96-18-4	
1,2,4-Trimethylbenzene	33.4	ug/kg	12.8	3.5	1	03/17/21 16:07	03/17/21 22:53	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	12.8	4.3	1	03/17/21 16:07	03/17/21 22:53	108-67-8	
Vinyl acetate	ND	ug/kg	128	9.3	1	03/17/21 16:07	03/17/21 22:53	108-05-4	
Vinyl chloride	ND	ug/kg	25.6	6.5	1	03/17/21 16:07	03/17/21 22:53	75-01-4	
Xylene (Total)	74.1	ug/kg	25.6	7.3	1	03/17/21 16:07	03/17/21 22:53	1330-20-7	
m&p-Xylene	43.7	ug/kg	25.6	8.7	1	03/17/21 16:07	03/17/21 22:53	179601-23-1	
o-Xylene	30.4	ug/kg	12.8	5.7	1	03/17/21 16:07	03/17/21 22:53	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	70-130		1	03/17/21 16:07	03/17/21 22:53	2037-26-5	
4-Bromofluorobenzene (S)	94	%	69-134		1	03/17/21 16:07	03/17/21 22:53	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130		1	03/17/21 16:07	03/17/21 22:53	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	33.1	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-15 (0.5-1.0) Lab ID: 92528011005 Collected: 03/15/21 11:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	214J	ug/kg	372	131	1	03/17/21 16:29	03/18/21 11:46	83-32-9	
Acenaphthylene	169J	ug/kg	372	131	1	03/17/21 16:29	03/18/21 11:46	208-96-8	
Aniline	ND	ug/kg	372	145	1	03/17/21 16:29	03/18/21 11:46	62-53-3	
Anthracene	376	ug/kg	372	122	1	03/17/21 16:29	03/18/21 11:46	120-12-7	
Benzo(a)anthracene	801	ug/kg	372	124	1	03/17/21 16:29	03/18/21 11:46	56-55-3	
Benzo(a)pyrene	693	ug/kg	372	128	1	03/17/21 16:29	03/18/21 11:46	50-32-8	
Benzo(b)fluoranthene	944	ug/kg	372	124	1	03/17/21 16:29	03/18/21 11:46	205-99-2	
Benzo(g,h,i)perylene	436	ug/kg	372	144	1	03/17/21 16:29	03/18/21 11:46	191-24-2	
Benzo(k)fluoranthene	398	ug/kg	372	131	1	03/17/21 16:29	03/18/21 11:46	207-08-9	
Benzoic Acid	ND	ug/kg	1860	799	1	03/17/21 16:29	03/18/21 11:46	65-85-0	
Benzyl alcohol	ND	ug/kg	744	282	1	03/17/21 16:29	03/18/21 11:46	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	372	143	1	03/17/21 16:29	03/18/21 11:46	101-55-3	
Butylbenzylphthalate	ND	ug/kg	372	157	1	03/17/21 16:29	03/18/21 11:46	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	744	261	1	03/17/21 16:29	03/18/21 11:46	59-50-7	
4-Chloroaniline	ND	ug/kg	744	292	1	03/17/21 16:29	03/18/21 11:46	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	372	154	1	03/17/21 16:29	03/18/21 11:46	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	372	140	1	03/17/21 16:29	03/18/21 11:46	111-44-4	
2-Chloronaphthalene	ND	ug/kg	372	148	1	03/17/21 16:29	03/18/21 11:46	91-58-7	
2-Chlorophenol	ND	ug/kg	372	140	1	03/17/21 16:29	03/18/21 11:46	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	372	139	1	03/17/21 16:29	03/18/21 11:46	7005-72-3	
Chrysene	822	ug/kg	372	135	1	03/17/21 16:29	03/18/21 11:46	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	372	143	1	03/17/21 16:29	03/18/21 11:46	53-70-3	
Dibenzofuran	260J	ug/kg	372	134	1	03/17/21 16:29	03/18/21 11:46	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	744	251	1	03/17/21 16:29	03/18/21 11:46	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	372	145	1	03/17/21 16:29	03/18/21 11:46	120-83-2	
Diethylphthalate	ND	ug/kg	372	136	1	03/17/21 16:29	03/18/21 11:46	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	372	154	1	03/17/21 16:29	03/18/21 11:46	105-67-9	
Dimethylphthalate	ND	ug/kg	372	135	1	03/17/21 16:29	03/18/21 11:46	131-11-3	
Di-n-butylphthalate	ND	ug/kg	372	125	1	03/17/21 16:29	03/18/21 11:46	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	744	347	1	03/17/21 16:29	03/18/21 11:46	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1860	1150	1	03/17/21 16:29	03/18/21 11:46	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	372	143	1	03/17/21 16:29	03/18/21 11:46	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	372	136	1	03/17/21 16:29	03/18/21 11:46	606-20-2	
Di-n-octylphthalate	ND	ug/kg	372	147	1	03/17/21 16:29	03/18/21 11:46	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	372	144	1	03/17/21 16:29	03/18/21 11:46	117-81-7	
Fluoranthene	1370	ug/kg	372	127	1	03/17/21 16:29	03/18/21 11:46	206-44-0	
Fluorene	289J	ug/kg	372	131	1	03/17/21 16:29	03/18/21 11:46	86-73-7	
Hexachlorobenzene	ND	ug/kg	372	145	1	03/17/21 16:29	03/18/21 11:46	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	372	213	1	03/17/21 16:29	03/18/21 11:46	77-47-4	
Hexachloroethane	ND	ug/kg	372	142	1	03/17/21 16:29	03/18/21 11:46	67-72-1	
Indeno(1,2,3-cd)pyrene	370J	ug/kg	372	147	1	03/17/21 16:29	03/18/21 11:46	193-39-5	
Isophorone	ND	ug/kg	372	166	1	03/17/21 16:29	03/18/21 11:46	78-59-1	
1-Methylnaphthalene	458	ug/kg	372	131	1	03/17/21 16:29	03/18/21 11:46	90-12-0	
2-Methylnaphthalene	520	ug/kg	372	149	1	03/17/21 16:29	03/18/21 11:46	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (0.5-1.0) **Lab ID: 92528011005** Collected: 03/15/21 11:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	372	152	1	03/17/21 16:29	03/18/21 11:46	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	372	150	1	03/17/21 16:29	03/18/21 11:46	15831-10-4	
2-Nitroaniline	ND	ug/kg	1860	304	1	03/17/21 16:29	03/18/21 11:46	88-74-4	
3-Nitroaniline	ND	ug/kg	1860	292	1	03/17/21 16:29	03/18/21 11:46	99-09-2	
4-Nitroaniline	ND	ug/kg	744	283	1	03/17/21 16:29	03/18/21 11:46	100-01-6	
Nitrobenzene	ND	ug/kg	372	172	1	03/17/21 16:29	03/18/21 11:46	98-95-3	
2-Nitrophenol	ND	ug/kg	372	161	1	03/17/21 16:29	03/18/21 11:46	88-75-5	
4-Nitrophenol	ND	ug/kg	1860	719	1	03/17/21 16:29	03/18/21 11:46	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	372	125	1	03/17/21 16:29	03/18/21 11:46	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	372	140	1	03/17/21 16:29	03/18/21 11:46	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	372	132	1	03/17/21 16:29	03/18/21 11:46	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	372	177	1	03/17/21 16:29	03/18/21 11:46	108-60-1	
Pentachlorophenol	ND	ug/kg	744	364	1	03/17/21 16:29	03/18/21 11:46	87-86-5	
Phenanthrene	1470	ug/kg	372	122	1	03/17/21 16:29	03/18/21 11:46	85-01-8	
Phenol	ND	ug/kg	372	166	1	03/17/21 16:29	03/18/21 11:46	108-95-2	
Pyrene	1400	ug/kg	372	151	1	03/17/21 16:29	03/18/21 11:46	129-00-0	
Pyridine	ND	ug/kg	372	117	1	03/17/21 16:29	03/18/21 11:46	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	372	170	1	03/17/21 16:29	03/18/21 11:46	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	372	153	1	03/17/21 16:29	03/18/21 11:46	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	72	%	21-130		1	03/17/21 16:29	03/18/21 11:46	4165-60-0	
2-Fluorobiphenyl (S)	71	%	19-130		1	03/17/21 16:29	03/18/21 11:46	321-60-8	
Terphenyl-d14 (S)	102	%	15-130		1	03/17/21 16:29	03/18/21 11:46	1718-51-0	
Phenol-d6 (S)	69	%	18-130		1	03/17/21 16:29	03/18/21 11:46	13127-88-3	
2-Fluorophenol (S)	65	%	18-130		1	03/17/21 16:29	03/18/21 11:46	367-12-4	
2,4,6-Tribromophenol (S)	77	%	18-130		1	03/17/21 16:29	03/18/21 11:46	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	125	40.3	1	03/17/21 16:07	03/17/21 18:11	67-64-1	
Benzene	41.8	ug/kg	6.3	2.5	1	03/17/21 16:07	03/17/21 18:11	71-43-2	
Bromobenzene	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 18:11	108-86-1	
Bromochloromethane	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 18:11	74-97-5	
Bromodichloromethane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 18:11	75-27-4	
Bromoform	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	75-25-2	
Bromomethane	ND	ug/kg	12.5	9.9	1	03/17/21 16:07	03/17/21 18:11	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	125	30.1	1	03/17/21 16:07	03/17/21 18:11	78-93-3	
n-Butylbenzene	ND	ug/kg	6.3	3.0	1	03/17/21 16:07	03/17/21 18:11	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 18:11	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 18:11	56-23-5	
Chlorobenzene	7.0	ug/kg	6.3	1.2	1	03/17/21 16:07	03/17/21 18:11	108-90-7	
Chloroethane	ND	ug/kg	12.5	4.8	1	03/17/21 16:07	03/17/21 18:11	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (0.5-1.0) Lab ID: 92528011005 Collected: 03/15/21 11:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.3	3.8	1	03/17/21 16:07	03/17/21 18:11	67-66-3	
Chloromethane	ND	ug/kg	12.5	5.3	1	03/17/21 16:07	03/17/21 18:11	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.3	1.1	1	03/17/21 16:07	03/17/21 18:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 18:11	96-12-8	
Dibromochloromethane	ND	ug/kg	6.3	3.5	1	03/17/21 16:07	03/17/21 18:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 18:11	106-93-4	
Dibromomethane	ND	ug/kg	6.3	1.3	1	03/17/21 16:07	03/17/21 18:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 18:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 18:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.3	1.6	1	03/17/21 16:07	03/17/21 18:11	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.5	2.7	1	03/17/21 16:07	03/17/21 18:11	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.3	2.6	1	03/17/21 16:07	03/17/21 18:11	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.3	4.2	1	03/17/21 16:07	03/17/21 18:11	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.3	2.6	1	03/17/21 16:07	03/17/21 18:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 18:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.3	1.9	1	03/17/21 16:07	03/17/21 18:11	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 18:11	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 18:11	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.3	3.0	1	03/17/21 16:07	03/17/21 18:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 18:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 18:11	108-20-3	
Ethylbenzene	23.4	ug/kg	6.3	2.9	1	03/17/21 16:07	03/17/21 18:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	12.5	10.3	1	03/17/21 16:07	03/17/21 18:11	87-68-3	IK
2-Hexanone	ND	ug/kg	62.7	6.0	1	03/17/21 16:07	03/17/21 18:11	591-78-6	
Isopropylbenzene (Cumene)	5.7J	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 18:11	98-82-8	
p-Isopropyltoluene	9.6	ug/kg	6.3	3.1	1	03/17/21 16:07	03/17/21 18:11	99-87-6	
Methylene Chloride	ND	ug/kg	25.1	17.2	1	03/17/21 16:07	03/17/21 18:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	62.7	6.0	1	03/17/21 16:07	03/17/21 18:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.3	2.3	1	03/17/21 16:07	03/17/21 18:11	1634-04-4	
Naphthalene	372	ug/kg	6.3	3.3	1	03/17/21 16:07	03/17/21 18:11	91-20-3	
n-Propylbenzene	ND	ug/kg	6.3	2.2	1	03/17/21 16:07	03/17/21 18:11	103-65-1	
Styrene	3.8J	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 18:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.3	2.4	1	03/17/21 16:07	03/17/21 18:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 18:11	79-34-5	
Tetrachloroethene	ND	ug/kg	6.3	2.0	1	03/17/21 16:07	03/17/21 18:11	127-18-4	
Toluene	64.6	ug/kg	6.3	1.8	1	03/17/21 16:07	03/17/21 18:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.3	5.1	1	03/17/21 16:07	03/17/21 18:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.3	5.3	1	03/17/21 16:07	03/17/21 18:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.3	3.3	1	03/17/21 16:07	03/17/21 18:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 18:11	79-00-5	
Trichloroethene	ND	ug/kg	6.3	1.6	1	03/17/21 16:07	03/17/21 18:11	79-01-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (0.5-1.0) **Lab ID: 92528011005** Collected: 03/15/21 11:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	6.3	3.4	1	03/17/21 16:07	03/17/21 18:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.3	3.2	1	03/17/21 16:07	03/17/21 18:11	96-18-4	
1,2,4-Trimethylbenzene	19.2	ug/kg	6.3	1.7	1	03/17/21 16:07	03/17/21 18:11	95-63-6	
1,3,5-Trimethylbenzene	6.8	ug/kg	6.3	2.1	1	03/17/21 16:07	03/17/21 18:11	108-67-8	
Vinyl acetate	ND	ug/kg	62.7	4.6	1	03/17/21 16:07	03/17/21 18:11	108-05-4	
Vinyl chloride	ND	ug/kg	12.5	3.2	1	03/17/21 16:07	03/17/21 18:11	75-01-4	
Xylene (Total)	70.4	ug/kg	12.5	3.6	1	03/17/21 16:07	03/17/21 18:11	1330-20-7	
m&p-Xylene	49.8	ug/kg	12.5	4.3	1	03/17/21 16:07	03/17/21 18:11	179601-23-1	
o-Xylene	20.6	ug/kg	6.3	2.8	1	03/17/21 16:07	03/17/21 18:11	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	70-130		1	03/17/21 16:07	03/17/21 18:11	2037-26-5	
4-Bromofluorobenzene (S)	93	%	69-134		1	03/17/21 16:07	03/17/21 18:11	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1	03/17/21 16:07	03/17/21 18:11	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	11.9	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (5.5-6.0) **Lab ID: 92528011006** Collected: 03/15/21 11:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	269J	ug/kg	517	182	1	03/17/21 16:29	03/18/21 12:47	83-32-9	
Acenaphthylene	185J	ug/kg	517	182	1	03/17/21 16:29	03/18/21 12:47	208-96-8	
Aniline	ND	ug/kg	517	202	1	03/17/21 16:29	03/18/21 12:47	62-53-3	
Anthracene	716	ug/kg	517	169	1	03/17/21 16:29	03/18/21 12:47	120-12-7	
Benzo(a)anthracene	1640	ug/kg	517	172	1	03/17/21 16:29	03/18/21 12:47	56-55-3	
Benzo(a)pyrene	1440	ug/kg	517	179	1	03/17/21 16:29	03/18/21 12:47	50-32-8	
Benzo(b)fluoranthene	2020	ug/kg	517	172	1	03/17/21 16:29	03/18/21 12:47	205-99-2	
Benzo(g,h,i)perylene	975	ug/kg	517	201	1	03/17/21 16:29	03/18/21 12:47	191-24-2	
Benzo(k)fluoranthene	791	ug/kg	517	182	1	03/17/21 16:29	03/18/21 12:47	207-08-9	
Benzoic Acid	ND	ug/kg	2580	1110	1	03/17/21 16:29	03/18/21 12:47	65-85-0	
Benzyl alcohol	ND	ug/kg	1030	392	1	03/17/21 16:29	03/18/21 12:47	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	517	199	1	03/17/21 16:29	03/18/21 12:47	101-55-3	
Butylbenzylphthalate	ND	ug/kg	517	218	1	03/17/21 16:29	03/18/21 12:47	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	1030	363	1	03/17/21 16:29	03/18/21 12:47	59-50-7	
4-Chloroaniline	ND	ug/kg	1030	406	1	03/17/21 16:29	03/18/21 12:47	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	517	215	1	03/17/21 16:29	03/18/21 12:47	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	517	194	1	03/17/21 16:29	03/18/21 12:47	111-44-4	
2-Chloronaphthalene	ND	ug/kg	517	205	1	03/17/21 16:29	03/18/21 12:47	91-58-7	
2-Chlorophenol	ND	ug/kg	517	194	1	03/17/21 16:29	03/18/21 12:47	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	517	193	1	03/17/21 16:29	03/18/21 12:47	7005-72-3	
Chrysene	1530	ug/kg	517	188	1	03/17/21 16:29	03/18/21 12:47	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	517	199	1	03/17/21 16:29	03/18/21 12:47	53-70-3	
Dibenzofuran	ND	ug/kg	517	186	1	03/17/21 16:29	03/18/21 12:47	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	1030	349	1	03/17/21 16:29	03/18/21 12:47	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	517	202	1	03/17/21 16:29	03/18/21 12:47	120-83-2	
Diethylphthalate	ND	ug/kg	517	190	1	03/17/21 16:29	03/18/21 12:47	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	517	215	1	03/17/21 16:29	03/18/21 12:47	105-67-9	
Dimethylphthalate	ND	ug/kg	517	188	1	03/17/21 16:29	03/18/21 12:47	131-11-3	
Di-n-butylphthalate	ND	ug/kg	517	174	1	03/17/21 16:29	03/18/21 12:47	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	1030	482	1	03/17/21 16:29	03/18/21 12:47	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2580	1600	1	03/17/21 16:29	03/18/21 12:47	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	517	199	1	03/17/21 16:29	03/18/21 12:47	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	517	190	1	03/17/21 16:29	03/18/21 12:47	606-20-2	
Di-n-octylphthalate	ND	ug/kg	517	204	1	03/17/21 16:29	03/18/21 12:47	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	517	201	1	03/17/21 16:29	03/18/21 12:47	117-81-7	
Fluoranthene	3920	ug/kg	517	177	1	03/17/21 16:29	03/18/21 12:47	206-44-0	
Fluorene	329J	ug/kg	517	182	1	03/17/21 16:29	03/18/21 12:47	86-73-7	
Hexachlorobenzene	ND	ug/kg	517	202	1	03/17/21 16:29	03/18/21 12:47	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	517	296	1	03/17/21 16:29	03/18/21 12:47	77-47-4	
Hexachloroethane	ND	ug/kg	517	197	1	03/17/21 16:29	03/18/21 12:47	67-72-1	
Indeno(1,2,3-cd)pyrene	800	ug/kg	517	204	1	03/17/21 16:29	03/18/21 12:47	193-39-5	
Isophorone	ND	ug/kg	517	230	1	03/17/21 16:29	03/18/21 12:47	78-59-1	
1-Methylnaphthalene	ND	ug/kg	517	182	1	03/17/21 16:29	03/18/21 12:47	90-12-0	
2-Methylnaphthalene	ND	ug/kg	517	207	1	03/17/21 16:29	03/18/21 12:47	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (5.5-6.0) **Lab ID: 92528011006** Collected: 03/15/21 11:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	517	211	1	03/17/21 16:29	03/18/21 12:47	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	517	208	1	03/17/21 16:29	03/18/21 12:47	15831-10-4	
2-Nitroaniline	ND	ug/kg	2580	423	1	03/17/21 16:29	03/18/21 12:47	88-74-4	
3-Nitroaniline	ND	ug/kg	2580	406	1	03/17/21 16:29	03/18/21 12:47	99-09-2	
4-Nitroaniline	ND	ug/kg	1030	393	1	03/17/21 16:29	03/18/21 12:47	100-01-6	
Nitrobenzene	ND	ug/kg	517	240	1	03/17/21 16:29	03/18/21 12:47	98-95-3	
2-Nitrophenol	ND	ug/kg	517	224	1	03/17/21 16:29	03/18/21 12:47	88-75-5	
4-Nitrophenol	ND	ug/kg	2580	999	1	03/17/21 16:29	03/18/21 12:47	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	517	174	1	03/17/21 16:29	03/18/21 12:47	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	517	194	1	03/17/21 16:29	03/18/21 12:47	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	517	183	1	03/17/21 16:29	03/18/21 12:47	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	517	246	1	03/17/21 16:29	03/18/21 12:47	108-60-1	
Pentachlorophenol	ND	ug/kg	1030	506	1	03/17/21 16:29	03/18/21 12:47	87-86-5	
Phenanthrene	2730	ug/kg	517	169	1	03/17/21 16:29	03/18/21 12:47	85-01-8	
Phenol	ND	ug/kg	517	230	1	03/17/21 16:29	03/18/21 12:47	108-95-2	
Pyrene	3540	ug/kg	517	210	1	03/17/21 16:29	03/18/21 12:47	129-00-0	
Pyridine	ND	ug/kg	517	163	1	03/17/21 16:29	03/18/21 12:47	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	517	237	1	03/17/21 16:29	03/18/21 12:47	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	517	213	1	03/17/21 16:29	03/18/21 12:47	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	52	%	21-130		1	03/17/21 16:29	03/18/21 12:47	4165-60-0	
2-Fluorobiphenyl (S)	49	%	19-130		1	03/17/21 16:29	03/18/21 12:47	321-60-8	
Terphenyl-d14 (S)	66	%	15-130		1	03/17/21 16:29	03/18/21 12:47	1718-51-0	
Phenol-d6 (S)	50	%	18-130		1	03/17/21 16:29	03/18/21 12:47	13127-88-3	
2-Fluorophenol (S)	48	%	18-130		1	03/17/21 16:29	03/18/21 12:47	367-12-4	
2,4,6-Tribromophenol (S)	62	%	18-130		1	03/17/21 16:29	03/18/21 12:47	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	199	64.0	1	03/17/21 16:07	03/17/21 18:29	67-64-1	
Benzene	ND	ug/kg	10	4.0	1	03/17/21 16:07	03/17/21 18:29	71-43-2	
Bromobenzene	ND	ug/kg	10	3.3	1	03/17/21 16:07	03/17/21 18:29	108-86-1	
Bromochloromethane	ND	ug/kg	10	3.0	1	03/17/21 16:07	03/17/21 18:29	74-97-5	
Bromodichloromethane	ND	ug/kg	10	3.9	1	03/17/21 16:07	03/17/21 18:29	75-27-4	
Bromoform	ND	ug/kg	10	3.5	1	03/17/21 16:07	03/17/21 18:29	75-25-2	
Bromomethane	ND	ug/kg	19.9	15.8	1	03/17/21 16:07	03/17/21 18:29	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	199	47.9	1	03/17/21 16:07	03/17/21 18:29	78-93-3	
n-Butylbenzene	ND	ug/kg	10	4.7	1	03/17/21 16:07	03/17/21 18:29	104-51-8	
sec-Butylbenzene	ND	ug/kg	10	4.4	1	03/17/21 16:07	03/17/21 18:29	135-98-8	
tert-Butylbenzene	ND	ug/kg	10	3.6	1	03/17/21 16:07	03/17/21 18:29	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	10	3.7	1	03/17/21 16:07	03/17/21 18:29	56-23-5	
Chlorobenzene	6.8J	ug/kg	10	1.9	1	03/17/21 16:07	03/17/21 18:29	108-90-7	
Chloroethane	ND	ug/kg	19.9	7.7	1	03/17/21 16:07	03/17/21 18:29	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-15 (5.5-6.0) Lab ID: 92528011006 Collected: 03/15/21 11:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	10	6.1	1	03/17/21 16:07	03/17/21 18:29	67-66-3	
Chloromethane	ND	ug/kg	19.9	8.4	1	03/17/21 16:07	03/17/21 18:29	74-87-3	
2-Chlorotoluene	ND	ug/kg	10	3.5	1	03/17/21 16:07	03/17/21 18:29	95-49-8	
4-Chlorotoluene	ND	ug/kg	10	1.8	1	03/17/21 16:07	03/17/21 18:29	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	10	3.9	1	03/17/21 16:07	03/17/21 18:29	96-12-8	
Dibromochloromethane	ND	ug/kg	10	5.6	1	03/17/21 16:07	03/17/21 18:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	10	4.4	1	03/17/21 16:07	03/17/21 18:29	106-93-4	
Dibromomethane	ND	ug/kg	10	2.1	1	03/17/21 16:07	03/17/21 18:29	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	10	3.6	1	03/17/21 16:07	03/17/21 18:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	10	3.1	1	03/17/21 16:07	03/17/21 18:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	10	2.6	1	03/17/21 16:07	03/17/21 18:29	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	19.9	4.3	1	03/17/21 16:07	03/17/21 18:29	75-71-8	
1,1-Dichloroethane	ND	ug/kg	10	4.1	1	03/17/21 16:07	03/17/21 18:29	75-34-3	
1,2-Dichloroethane	ND	ug/kg	10	6.6	1	03/17/21 16:07	03/17/21 18:29	107-06-2	
1,1-Dichloroethene	ND	ug/kg	10	4.1	1	03/17/21 16:07	03/17/21 18:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	10	3.4	1	03/17/21 16:07	03/17/21 18:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	10	3.5	1	03/17/21 16:07	03/17/21 18:29	156-60-5	
1,2-Dichloropropane	ND	ug/kg	10	3.0	1	03/17/21 16:07	03/17/21 18:29	78-87-5	
1,3-Dichloropropane	ND	ug/kg	10	3.1	1	03/17/21 16:07	03/17/21 18:29	142-28-9	
2,2-Dichloropropane	ND	ug/kg	10	3.3	1	03/17/21 16:07	03/17/21 18:29	594-20-7	
1,1-Dichloropropene	ND	ug/kg	10	4.8	1	03/17/21 16:07	03/17/21 18:29	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	10	2.7	1	03/17/21 16:07	03/17/21 18:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	10	3.4	1	03/17/21 16:07	03/17/21 18:29	10061-02-6	
Diisopropyl ether	ND	ug/kg	10	2.7	1	03/17/21 16:07	03/17/21 18:29	108-20-3	
Ethylbenzene	ND	ug/kg	10	4.6	1	03/17/21 16:07	03/17/21 18:29	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	19.9	16.3	1	03/17/21 16:07	03/17/21 18:29	87-68-3	IK
2-Hexanone	ND	ug/kg	99.7	9.6	1	03/17/21 16:07	03/17/21 18:29	591-78-6	
Isopropylbenzene (Cumene)	20.6	ug/kg	10	3.4	1	03/17/21 16:07	03/17/21 18:29	98-82-8	
p-Isopropyltoluene	34.3	ug/kg	10	4.9	1	03/17/21 16:07	03/17/21 18:29	99-87-6	
Methylene Chloride	ND	ug/kg	39.9	27.3	1	03/17/21 16:07	03/17/21 18:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	99.7	9.6	1	03/17/21 16:07	03/17/21 18:29	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	10	3.7	1	03/17/21 16:07	03/17/21 18:29	1634-04-4	
Naphthalene	60.0	ug/kg	10	5.2	1	03/17/21 16:07	03/17/21 18:29	91-20-3	
n-Propylbenzene	ND	ug/kg	10	3.6	1	03/17/21 16:07	03/17/21 18:29	103-65-1	
Styrene	ND	ug/kg	10	2.6	1	03/17/21 16:07	03/17/21 18:29	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	10	3.8	1	03/17/21 16:07	03/17/21 18:29	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	2.6	1	03/17/21 16:07	03/17/21 18:29	79-34-5	
Tetrachloroethene	ND	ug/kg	10	3.2	1	03/17/21 16:07	03/17/21 18:29	127-18-4	
Toluene	5.1J	ug/kg	10	2.8	1	03/17/21 16:07	03/17/21 18:29	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	10	8.1	1	03/17/21 16:07	03/17/21 18:29	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	10	8.4	1	03/17/21 16:07	03/17/21 18:29	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	10	5.2	1	03/17/21 16:07	03/17/21 18:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	10	3.3	1	03/17/21 16:07	03/17/21 18:29	79-00-5	
Trichloroethene	ND	ug/kg	10	2.6	1	03/17/21 16:07	03/17/21 18:29	79-01-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-15 (5.5-6.0) **Lab ID: 92528011006** Collected: 03/15/21 11:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	10	5.5	1	03/17/21 16:07	03/17/21 18:29	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	10	5.0	1	03/17/21 16:07	03/17/21 18:29	96-18-4	
1,2,4-Trimethylbenzene	13.0	ug/kg	10	2.7	1	03/17/21 16:07	03/17/21 18:29	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	10	3.4	1	03/17/21 16:07	03/17/21 18:29	108-67-8	
Vinyl acetate	ND	ug/kg	99.7	7.3	1	03/17/21 16:07	03/17/21 18:29	108-05-4	
Vinyl chloride	ND	ug/kg	19.9	5.1	1	03/17/21 16:07	03/17/21 18:29	75-01-4	
Xylene (Total)	15.7J	ug/kg	19.9	5.7	1	03/17/21 16:07	03/17/21 18:29	1330-20-7	
m&p-Xylene	15.7J	ug/kg	19.9	6.8	1	03/17/21 16:07	03/17/21 18:29	179601-23-1	
o-Xylene	ND	ug/kg	10	4.4	1	03/17/21 16:07	03/17/21 18:29	95-47-6	
Surrogates									
Toluene-d8 (S)	98	%	70-130		1	03/17/21 16:07	03/17/21 18:29	2037-26-5	
4-Bromofluorobenzene (S)	95	%	69-134		1	03/17/21 16:07	03/17/21 18:29	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1	03/17/21 16:07	03/17/21 18:29	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	36.8	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (0.5-1.0) **Lab ID: 92528011007** Collected: 03/15/21 11:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	389	137	1	03/17/21 16:29	03/18/21 13:19	83-32-9	
Acenaphthylene	ND	ug/kg	389	137	1	03/17/21 16:29	03/18/21 13:19	208-96-8	
Aniline	ND	ug/kg	389	152	1	03/17/21 16:29	03/18/21 13:19	62-53-3	
Anthracene	ND	ug/kg	389	127	1	03/17/21 16:29	03/18/21 13:19	120-12-7	
Benzo(a)anthracene	ND	ug/kg	389	130	1	03/17/21 16:29	03/18/21 13:19	56-55-3	
Benzo(a)pyrene	ND	ug/kg	389	134	1	03/17/21 16:29	03/18/21 13:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	389	130	1	03/17/21 16:29	03/18/21 13:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	389	151	1	03/17/21 16:29	03/18/21 13:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	389	137	1	03/17/21 16:29	03/18/21 13:19	207-08-9	
Benzoic Acid	ND	ug/kg	1940	835	1	03/17/21 16:29	03/18/21 13:19	65-85-0	
Benzyl alcohol	ND	ug/kg	777	294	1	03/17/21 16:29	03/18/21 13:19	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	389	150	1	03/17/21 16:29	03/18/21 13:19	101-55-3	
Butylbenzylphthalate	ND	ug/kg	389	164	1	03/17/21 16:29	03/18/21 13:19	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	777	273	1	03/17/21 16:29	03/18/21 13:19	59-50-7	
4-Chloroaniline	ND	ug/kg	777	305	1	03/17/21 16:29	03/18/21 13:19	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	389	161	1	03/17/21 16:29	03/18/21 13:19	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	389	146	1	03/17/21 16:29	03/18/21 13:19	111-44-4	
2-Chloronaphthalene	ND	ug/kg	389	154	1	03/17/21 16:29	03/18/21 13:19	91-58-7	
2-Chlorophenol	ND	ug/kg	389	146	1	03/17/21 16:29	03/18/21 13:19	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	389	145	1	03/17/21 16:29	03/18/21 13:19	7005-72-3	
Chrysene	ND	ug/kg	389	141	1	03/17/21 16:29	03/18/21 13:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	389	150	1	03/17/21 16:29	03/18/21 13:19	53-70-3	
Dibenzofuran	ND	ug/kg	389	140	1	03/17/21 16:29	03/18/21 13:19	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	777	263	1	03/17/21 16:29	03/18/21 13:19	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	389	152	1	03/17/21 16:29	03/18/21 13:19	120-83-2	
Diethylphthalate	ND	ug/kg	389	143	1	03/17/21 16:29	03/18/21 13:19	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	389	161	1	03/17/21 16:29	03/18/21 13:19	105-67-9	
Dimethylphthalate	ND	ug/kg	389	141	1	03/17/21 16:29	03/18/21 13:19	131-11-3	
Di-n-butylphthalate	ND	ug/kg	389	131	1	03/17/21 16:29	03/18/21 13:19	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	777	363	1	03/17/21 16:29	03/18/21 13:19	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1940	1200	1	03/17/21 16:29	03/18/21 13:19	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	389	150	1	03/17/21 16:29	03/18/21 13:19	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	389	143	1	03/17/21 16:29	03/18/21 13:19	606-20-2	
Di-n-octylphthalate	ND	ug/kg	389	153	1	03/17/21 16:29	03/18/21 13:19	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	389	151	1	03/17/21 16:29	03/18/21 13:19	117-81-7	
Fluoranthene	ND	ug/kg	389	133	1	03/17/21 16:29	03/18/21 13:19	206-44-0	
Fluorene	ND	ug/kg	389	137	1	03/17/21 16:29	03/18/21 13:19	86-73-7	
Hexachlorobenzene	ND	ug/kg	389	152	1	03/17/21 16:29	03/18/21 13:19	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	389	223	1	03/17/21 16:29	03/18/21 13:19	77-47-4	
Hexachloroethane	ND	ug/kg	389	148	1	03/17/21 16:29	03/18/21 13:19	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	389	153	1	03/17/21 16:29	03/18/21 13:19	193-39-5	
Isophorone	ND	ug/kg	389	173	1	03/17/21 16:29	03/18/21 13:19	78-59-1	
1-Methylnaphthalene	ND	ug/kg	389	137	1	03/17/21 16:29	03/18/21 13:19	90-12-0	
2-Methylnaphthalene	ND	ug/kg	389	155	1	03/17/21 16:29	03/18/21 13:19	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (0.5-1.0) Lab ID: 92528011007 Collected: 03/15/21 11:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	389	159	1	03/17/21 16:29	03/18/21 13:19	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	389	157	1	03/17/21 16:29	03/18/21 13:19	15831-10-4	
2-Nitroaniline	ND	ug/kg	1940	318	1	03/17/21 16:29	03/18/21 13:19	88-74-4	
3-Nitroaniline	ND	ug/kg	1940	305	1	03/17/21 16:29	03/18/21 13:19	99-09-2	
4-Nitroaniline	ND	ug/kg	777	296	1	03/17/21 16:29	03/18/21 13:19	100-01-6	
Nitrobenzene	ND	ug/kg	389	180	1	03/17/21 16:29	03/18/21 13:19	98-95-3	
2-Nitrophenol	ND	ug/kg	389	168	1	03/17/21 16:29	03/18/21 13:19	88-75-5	
4-Nitrophenol	ND	ug/kg	1940	751	1	03/17/21 16:29	03/18/21 13:19	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	389	131	1	03/17/21 16:29	03/18/21 13:19	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	389	146	1	03/17/21 16:29	03/18/21 13:19	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	389	138	1	03/17/21 16:29	03/18/21 13:19	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	389	185	1	03/17/21 16:29	03/18/21 13:19	108-60-1	
Pentachlorophenol	ND	ug/kg	777	380	1	03/17/21 16:29	03/18/21 13:19	87-86-5	
Phenanthrene	ND	ug/kg	389	127	1	03/17/21 16:29	03/18/21 13:19	85-01-8	
Phenol	ND	ug/kg	389	173	1	03/17/21 16:29	03/18/21 13:19	108-95-2	
Pyrene	ND	ug/kg	389	158	1	03/17/21 16:29	03/18/21 13:19	129-00-0	
Pyridine	ND	ug/kg	389	122	1	03/17/21 16:29	03/18/21 13:19	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	389	178	1	03/17/21 16:29	03/18/21 13:19	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	389	160	1	03/17/21 16:29	03/18/21 13:19	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	69	%	21-130		1	03/17/21 16:29	03/18/21 13:19	4165-60-0	
2-Fluorobiphenyl (S)	68	%	19-130		1	03/17/21 16:29	03/18/21 13:19	321-60-8	
Terphenyl-d14 (S)	98	%	15-130		1	03/17/21 16:29	03/18/21 13:19	1718-51-0	
Phenol-d6 (S)	70	%	18-130		1	03/17/21 16:29	03/18/21 13:19	13127-88-3	
2-Fluorophenol (S)	65	%	18-130		1	03/17/21 16:29	03/18/21 13:19	367-12-4	
2,4,6-Tribromophenol (S)	81	%	18-130		1	03/17/21 16:29	03/18/21 13:19	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	124	39.8	1	03/18/21 12:56	03/19/21 00:27	67-64-1	
Benzene	ND	ug/kg	6.2	2.5	1	03/18/21 12:56	03/19/21 00:27	71-43-2	
Bromobenzene	ND	ug/kg	6.2	2.0	1	03/18/21 12:56	03/19/21 00:27	108-86-1	
Bromochloromethane	ND	ug/kg	6.2	1.8	1	03/18/21 12:56	03/19/21 00:27	74-97-5	
Bromodichloromethane	ND	ug/kg	6.2	2.4	1	03/18/21 12:56	03/19/21 00:27	75-27-4	
Bromoform	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	75-25-2	
Bromomethane	ND	ug/kg	12.4	9.8	1	03/18/21 12:56	03/19/21 00:27	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	124	29.7	1	03/18/21 12:56	03/19/21 00:27	78-93-3	
n-Butylbenzene	ND	ug/kg	6.2	2.9	1	03/18/21 12:56	03/19/21 00:27	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.2	2.7	1	03/18/21 12:56	03/19/21 00:27	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	6.2	2.3	1	03/18/21 12:56	03/19/21 00:27	56-23-5	
Chlorobenzene	ND	ug/kg	6.2	1.2	1	03/18/21 12:56	03/19/21 00:27	108-90-7	
Chloroethane	ND	ug/kg	12.4	4.8	1	03/18/21 12:56	03/19/21 00:27	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (0.5-1.0) **Lab ID: 92528011007** Collected: 03/15/21 11:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.2	3.8	1	03/18/21 12:56	03/19/21 00:27	67-66-3	
Chloromethane	ND	ug/kg	12.4	5.2	1	03/18/21 12:56	03/19/21 00:27	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.2	1.1	1	03/18/21 12:56	03/19/21 00:27	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.2	2.4	1	03/18/21 12:56	03/19/21 00:27	96-12-8	
Dibromochloromethane	ND	ug/kg	6.2	3.5	1	03/18/21 12:56	03/19/21 00:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.2	2.7	1	03/18/21 12:56	03/19/21 00:27	106-93-4	
Dibromomethane	ND	ug/kg	6.2	1.3	1	03/18/21 12:56	03/19/21 00:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.2	1.9	1	03/18/21 12:56	03/19/21 00:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.2	1.6	1	03/18/21 12:56	03/19/21 00:27	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.4	2.7	1	03/18/21 12:56	03/19/21 00:27	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.2	2.6	1	03/18/21 12:56	03/19/21 00:27	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.2	4.1	1	03/18/21 12:56	03/19/21 00:27	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.2	2.6	1	03/18/21 12:56	03/19/21 00:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.2	2.1	1	03/18/21 12:56	03/19/21 00:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.2	1.9	1	03/18/21 12:56	03/19/21 00:27	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.2	1.9	1	03/18/21 12:56	03/19/21 00:27	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.2	2.0	1	03/18/21 12:56	03/19/21 00:27	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.2	3.0	1	03/18/21 12:56	03/19/21 00:27	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.2	1.7	1	03/18/21 12:56	03/19/21 00:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.2	2.1	1	03/18/21 12:56	03/19/21 00:27	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.2	1.7	1	03/18/21 12:56	03/19/21 00:27	108-20-3	
Ethylbenzene	ND	ug/kg	6.2	2.9	1	03/18/21 12:56	03/19/21 00:27	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	12.4	10.1	1	03/18/21 12:56	03/19/21 00:27	87-68-3	IK
2-Hexanone	ND	ug/kg	61.9	6.0	1	03/18/21 12:56	03/19/21 00:27	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.2	2.1	1	03/18/21 12:56	03/19/21 00:27	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.2	3.0	1	03/18/21 12:56	03/19/21 00:27	99-87-6	
Methylene Chloride	ND	ug/kg	24.8	17.0	1	03/18/21 12:56	03/19/21 00:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	61.9	6.0	1	03/18/21 12:56	03/19/21 00:27	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.2	2.3	1	03/18/21 12:56	03/19/21 00:27	1634-04-4	
Naphthalene	7.8	ug/kg	6.2	3.3	1	03/18/21 12:56	03/19/21 00:27	91-20-3	
n-Propylbenzene	ND	ug/kg	6.2	2.2	1	03/18/21 12:56	03/19/21 00:27	103-65-1	
Styrene	ND	ug/kg	6.2	1.6	1	03/18/21 12:56	03/19/21 00:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.2	2.4	1	03/18/21 12:56	03/19/21 00:27	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	6.2	1.6	1	03/18/21 12:56	03/19/21 00:27	79-34-5	
Tetrachloroethene	ND	ug/kg	6.2	2.0	1	03/18/21 12:56	03/19/21 00:27	127-18-4	
Toluene	9.7	ug/kg	6.2	1.8	1	03/18/21 12:56	03/19/21 00:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.2	5.0	1	03/18/21 12:56	03/19/21 00:27	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.2	5.2	1	03/18/21 12:56	03/19/21 00:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.2	3.2	1	03/18/21 12:56	03/19/21 00:27	71-55-6	
1,1,1,2-Trichloroethane	ND	ug/kg	6.2	2.1	1	03/18/21 12:56	03/19/21 00:27	79-00-5	
Trichloroethene	ND	ug/kg	6.2	1.6	1	03/18/21 12:56	03/19/21 00:27	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (0.5-1.0) **Lab ID: 92528011007** Collected: 03/15/21 11:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	6.2	3.4	1	03/18/21 12:56	03/19/21 00:27	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.2	3.1	1	03/18/21 12:56	03/19/21 00:27	96-18-4	
1,2,4-Trimethylbenzene	3.4J	ug/kg	6.2	1.7	1	03/18/21 12:56	03/19/21 00:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.2	2.1	1	03/18/21 12:56	03/19/21 00:27	108-67-8	
Vinyl acetate	ND	ug/kg	61.9	4.5	1	03/18/21 12:56	03/19/21 00:27	108-05-4	
Vinyl chloride	ND	ug/kg	12.4	3.1	1	03/18/21 12:56	03/19/21 00:27	75-01-4	
Xylene (Total)	10.5J	ug/kg	12.4	3.5	1	03/18/21 12:56	03/19/21 00:27	1330-20-7	
m&p-Xylene	10.5J	ug/kg	12.4	4.2	1	03/18/21 12:56	03/19/21 00:27	179601-23-1	
o-Xylene	ND	ug/kg	6.2	2.7	1	03/18/21 12:56	03/19/21 00:27	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	70-130		1	03/18/21 12:56	03/19/21 00:27	2037-26-5	
4-Bromofluorobenzene (S)	91	%	69-134		1	03/18/21 12:56	03/19/21 00:27	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/18/21 12:56	03/19/21 00:27	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	14.2	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (5.5-6.0) **Lab ID: 92528011008** Collected: 03/15/21 11:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	7710	ug/kg	516	181	1	03/17/21 16:29	03/18/21 13:49	83-32-9	E
Acenaphthylene	ND	ug/kg	516	181	1	03/17/21 16:29	03/18/21 13:49	208-96-8	
Aniline	ND	ug/kg	516	202	1	03/17/21 16:29	03/18/21 13:49	62-53-3	
Anthracene	17300	ug/kg	10300	3380	20	03/17/21 16:29	03/18/21 22:41	120-12-7	
Benzo(a)anthracene	23800	ug/kg	10300	3440	20	03/17/21 16:29	03/18/21 22:41	56-55-3	
Benzo(a)pyrene	15900	ug/kg	10300	3570	20	03/17/21 16:29	03/18/21 22:41	50-32-8	
Benzo(b)fluoranthene	21300	ug/kg	10300	3440	20	03/17/21 16:29	03/18/21 22:41	205-99-2	
Benzo(g,h,i)perylene	9630	ug/kg	516	200	1	03/17/21 16:29	03/18/21 13:49	191-24-2	
Benzo(k)fluoranthene	8160	ug/kg	516	181	1	03/17/21 16:29	03/18/21 13:49	207-08-9	
Benzoic Acid	ND	ug/kg	2580	1110	1	03/17/21 16:29	03/18/21 13:49	65-85-0	
Benzyl alcohol	ND	ug/kg	1030	391	1	03/17/21 16:29	03/18/21 13:49	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	516	199	1	03/17/21 16:29	03/18/21 13:49	101-55-3	
Butylbenzylphthalate	ND	ug/kg	516	217	1	03/17/21 16:29	03/18/21 13:49	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	1030	363	1	03/17/21 16:29	03/18/21 13:49	59-50-7	
4-Chloroaniline	ND	ug/kg	1030	405	1	03/17/21 16:29	03/18/21 13:49	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	516	214	1	03/17/21 16:29	03/18/21 13:49	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	516	194	1	03/17/21 16:29	03/18/21 13:49	111-44-4	
2-Chloronaphthalene	ND	ug/kg	516	205	1	03/17/21 16:29	03/18/21 13:49	91-58-7	
2-Chlorophenol	ND	ug/kg	516	194	1	03/17/21 16:29	03/18/21 13:49	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	516	192	1	03/17/21 16:29	03/18/21 13:49	7005-72-3	
Chrysene	23000	ug/kg	10300	3760	20	03/17/21 16:29	03/18/21 22:41	218-01-9	
Dibenz(a,h)anthracene	2920	ug/kg	516	199	1	03/17/21 16:29	03/18/21 13:49	53-70-3	
Dibenzofuran	4160	ug/kg	516	186	1	03/17/21 16:29	03/18/21 13:49	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	1030	349	1	03/17/21 16:29	03/18/21 13:49	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	516	202	1	03/17/21 16:29	03/18/21 13:49	120-83-2	
Diethylphthalate	ND	ug/kg	516	189	1	03/17/21 16:29	03/18/21 13:49	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	516	214	1	03/17/21 16:29	03/18/21 13:49	105-67-9	
Dimethylphthalate	ND	ug/kg	516	188	1	03/17/21 16:29	03/18/21 13:49	131-11-3	
Di-n-butylphthalate	ND	ug/kg	516	174	1	03/17/21 16:29	03/18/21 13:49	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	1030	482	1	03/17/21 16:29	03/18/21 13:49	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2580	1600	1	03/17/21 16:29	03/18/21 13:49	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	516	199	1	03/17/21 16:29	03/18/21 13:49	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	516	189	1	03/17/21 16:29	03/18/21 13:49	606-20-2	
Di-n-octylphthalate	ND	ug/kg	516	203	1	03/17/21 16:29	03/18/21 13:49	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	516	200	1	03/17/21 16:29	03/18/21 13:49	117-81-7	
Fluoranthene	58500	ug/kg	10300	3540	20	03/17/21 16:29	03/18/21 22:41	206-44-0	
Fluorene	10200	ug/kg	516	181	1	03/17/21 16:29	03/18/21 13:49	86-73-7	E
Hexachlorobenzene	ND	ug/kg	516	202	1	03/17/21 16:29	03/18/21 13:49	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	516	296	1	03/17/21 16:29	03/18/21 13:49	77-47-4	
Hexachloroethane	ND	ug/kg	516	197	1	03/17/21 16:29	03/18/21 13:49	67-72-1	
Indeno(1,2,3-cd)pyrene	9200	ug/kg	516	203	1	03/17/21 16:29	03/18/21 13:49	193-39-5	
Isophorone	ND	ug/kg	516	230	1	03/17/21 16:29	03/18/21 13:49	78-59-1	
1-Methylnaphthalene	1490	ug/kg	516	181	1	03/17/21 16:29	03/18/21 13:49	90-12-0	
2-Methylnaphthalene	695	ug/kg	516	207	1	03/17/21 16:29	03/18/21 13:49	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (5.5-6.0) **Lab ID: 92528011008** Collected: 03/15/21 11:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	516	211	1	03/17/21 16:29	03/18/21 13:49	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	516	208	1	03/17/21 16:29	03/18/21 13:49	15831-10-4	
2-Nitroaniline	ND	ug/kg	2580	422	1	03/17/21 16:29	03/18/21 13:49	88-74-4	
3-Nitroaniline	ND	ug/kg	2580	405	1	03/17/21 16:29	03/18/21 13:49	99-09-2	
4-Nitroaniline	ND	ug/kg	1030	393	1	03/17/21 16:29	03/18/21 13:49	100-01-6	
Nitrobenzene	ND	ug/kg	516	239	1	03/17/21 16:29	03/18/21 13:49	98-95-3	
2-Nitrophenol	ND	ug/kg	516	224	1	03/17/21 16:29	03/18/21 13:49	88-75-5	
4-Nitrophenol	ND	ug/kg	2580	998	1	03/17/21 16:29	03/18/21 13:49	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	516	174	1	03/17/21 16:29	03/18/21 13:49	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	516	194	1	03/17/21 16:29	03/18/21 13:49	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	516	183	1	03/17/21 16:29	03/18/21 13:49	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	516	246	1	03/17/21 16:29	03/18/21 13:49	108-60-1	
Pentachlorophenol	ND	ug/kg	1030	505	1	03/17/21 16:29	03/18/21 13:49	87-86-5	
Phenanthrene	55400	ug/kg	10300	3380	20	03/17/21 16:29	03/18/21 22:41	85-01-8	
Phenol	ND	ug/kg	516	230	1	03/17/21 16:29	03/18/21 13:49	108-95-2	
Pyrene	48100	ug/kg	10300	4190	20	03/17/21 16:29	03/18/21 22:41	129-00-0	
Pyridine	ND	ug/kg	516	163	1	03/17/21 16:29	03/18/21 13:49	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	516	236	1	03/17/21 16:29	03/18/21 13:49	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	516	213	1	03/17/21 16:29	03/18/21 13:49	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	42	%	21-130		1	03/17/21 16:29	03/18/21 13:49	4165-60-0	
2-Fluorobiphenyl (S)	38	%	19-130		1	03/17/21 16:29	03/18/21 13:49	321-60-8	
Terphenyl-d14 (S)	53	%	15-130		1	03/17/21 16:29	03/18/21 13:49	1718-51-0	
Phenol-d6 (S)	42	%	18-130		1	03/17/21 16:29	03/18/21 13:49	13127-88-3	
2-Fluorophenol (S)	41	%	18-130		1	03/17/21 16:29	03/18/21 13:49	367-12-4	
2,4,6-Tribromophenol (S)	55	%	18-130		1	03/17/21 16:29	03/18/21 13:49	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	83.5J	ug/kg	215	68.9	1	03/17/21 16:07	03/17/21 23:11	67-64-1	
Benzene	ND	ug/kg	10.7	4.3	1	03/17/21 16:07	03/17/21 23:11	71-43-2	
Bromobenzene	ND	ug/kg	10.7	3.5	1	03/17/21 16:07	03/17/21 23:11	108-86-1	
Bromochloromethane	ND	ug/kg	10.7	3.2	1	03/17/21 16:07	03/17/21 23:11	74-97-5	
Bromodichloromethane	ND	ug/kg	10.7	4.1	1	03/17/21 16:07	03/17/21 23:11	75-27-4	
Bromoform	ND	ug/kg	10.7	3.8	1	03/17/21 16:07	03/17/21 23:11	75-25-2	
Bromomethane	ND	ug/kg	21.5	17.0	1	03/17/21 16:07	03/17/21 23:11	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	74.6J	ug/kg	215	51.5	1	03/17/21 16:07	03/17/21 23:11	78-93-3	
n-Butylbenzene	ND	ug/kg	10.7	5.1	1	03/17/21 16:07	03/17/21 23:11	104-51-8	
sec-Butylbenzene	ND	ug/kg	10.7	4.7	1	03/17/21 16:07	03/17/21 23:11	135-98-8	
tert-Butylbenzene	ND	ug/kg	10.7	3.8	1	03/17/21 16:07	03/17/21 23:11	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	10.7	4.0	1	03/17/21 16:07	03/17/21 23:11	56-23-5	
Chlorobenzene	40.2	ug/kg	10.7	2.1	1	03/17/21 16:07	03/17/21 23:11	108-90-7	
Chloroethane	ND	ug/kg	21.5	8.3	1	03/17/21 16:07	03/17/21 23:11	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (5.5-6.0) **Lab ID: 92528011008** Collected: 03/15/21 11:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	10.7	6.5	1	03/17/21 16:07	03/17/21 23:11	67-66-3	
Chloromethane	ND	ug/kg	21.5	9.0	1	03/17/21 16:07	03/17/21 23:11	74-87-3	
2-Chlorotoluene	ND	ug/kg	10.7	3.8	1	03/17/21 16:07	03/17/21 23:11	95-49-8	
4-Chlorotoluene	ND	ug/kg	10.7	1.9	1	03/17/21 16:07	03/17/21 23:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	10.7	4.2	1	03/17/21 16:07	03/17/21 23:11	96-12-8	
Dibromochloromethane	ND	ug/kg	10.7	6.0	1	03/17/21 16:07	03/17/21 23:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	10.7	4.7	1	03/17/21 16:07	03/17/21 23:11	106-93-4	
Dibromomethane	ND	ug/kg	10.7	2.3	1	03/17/21 16:07	03/17/21 23:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	10.7	3.9	1	03/17/21 16:07	03/17/21 23:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	10.7	3.3	1	03/17/21 16:07	03/17/21 23:11	541-73-1	
1,4-Dichlorobenzene	12.2	ug/kg	10.7	2.8	1	03/17/21 16:07	03/17/21 23:11	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	21.5	4.7	1	03/17/21 16:07	03/17/21 23:11	75-71-8	
1,1-Dichloroethane	ND	ug/kg	10.7	4.4	1	03/17/21 16:07	03/17/21 23:11	75-34-3	
1,2-Dichloroethane	ND	ug/kg	10.7	7.1	1	03/17/21 16:07	03/17/21 23:11	107-06-2	
1,1-Dichloroethene	ND	ug/kg	10.7	4.4	1	03/17/21 16:07	03/17/21 23:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	10.7	3.7	1	03/17/21 16:07	03/17/21 23:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	10.7	3.8	1	03/17/21 16:07	03/17/21 23:11	156-60-5	
1,2-Dichloropropane	ND	ug/kg	10.7	3.2	1	03/17/21 16:07	03/17/21 23:11	78-87-5	
1,3-Dichloropropane	ND	ug/kg	10.7	3.3	1	03/17/21 16:07	03/17/21 23:11	142-28-9	
2,2-Dichloropropane	ND	ug/kg	10.7	3.5	1	03/17/21 16:07	03/17/21 23:11	594-20-7	
1,1-Dichloropropene	ND	ug/kg	10.7	5.2	1	03/17/21 16:07	03/17/21 23:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	10.7	2.9	1	03/17/21 16:07	03/17/21 23:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	10.7	3.7	1	03/17/21 16:07	03/17/21 23:11	10061-02-6	
Diisopropyl ether	ND	ug/kg	10.7	2.9	1	03/17/21 16:07	03/17/21 23:11	108-20-3	
Ethylbenzene	10.8	ug/kg	10.7	5.0	1	03/17/21 16:07	03/17/21 23:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	21.5	17.6	1	03/17/21 16:07	03/17/21 23:11	87-68-3	IK
2-Hexanone	ND	ug/kg	107	10.4	1	03/17/21 16:07	03/17/21 23:11	591-78-6	
Isopropylbenzene (Cumene)	173	ug/kg	10.7	3.7	1	03/17/21 16:07	03/17/21 23:11	98-82-8	
p-Isopropyltoluene	56.9	ug/kg	10.7	5.3	1	03/17/21 16:07	03/17/21 23:11	99-87-6	
Methylene Chloride	ND	ug/kg	42.9	29.4	1	03/17/21 16:07	03/17/21 23:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	107	10.4	1	03/17/21 16:07	03/17/21 23:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	10.7	4.0	1	03/17/21 16:07	03/17/21 23:11	1634-04-4	
Naphthalene	1410	ug/kg	10.7	5.6	1	03/17/21 16:07	03/17/21 23:11	91-20-3	
n-Propylbenzene	ND	ug/kg	10.7	3.8	1	03/17/21 16:07	03/17/21 23:11	103-65-1	
Styrene	5.8J	ug/kg	10.7	2.8	1	03/17/21 16:07	03/17/21 23:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	10.7	4.1	1	03/17/21 16:07	03/17/21 23:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	10.7	2.8	1	03/17/21 16:07	03/17/21 23:11	79-34-5	
Tetrachloroethene	ND	ug/kg	10.7	3.4	1	03/17/21 16:07	03/17/21 23:11	127-18-4	
Toluene	17.2	ug/kg	10.7	3.0	1	03/17/21 16:07	03/17/21 23:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	10.7	8.7	1	03/17/21 16:07	03/17/21 23:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	10.7	9.0	1	03/17/21 16:07	03/17/21 23:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	10.7	5.6	1	03/17/21 16:07	03/17/21 23:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	10.7	3.6	1	03/17/21 16:07	03/17/21 23:11	79-00-5	
Trichloroethene	ND	ug/kg	10.7	2.8	1	03/17/21 16:07	03/17/21 23:11	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-16 (5.5-6.0) **Lab ID: 92528011008** Collected: 03/15/21 11:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	10.7	5.9	1	03/17/21 16:07	03/17/21 23:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	10.7	5.4	1	03/17/21 16:07	03/17/21 23:11	96-18-4	
1,2,4-Trimethylbenzene	107	ug/kg	10.7	2.9	1	03/17/21 16:07	03/17/21 23:11	95-63-6	
1,3,5-Trimethylbenzene	43.0	ug/kg	10.7	3.6	1	03/17/21 16:07	03/17/21 23:11	108-67-8	
Vinyl acetate	ND	ug/kg	107	7.8	1	03/17/21 16:07	03/17/21 23:11	108-05-4	
Vinyl chloride	ND	ug/kg	21.5	5.5	1	03/17/21 16:07	03/17/21 23:11	75-01-4	
Xylene (Total)	131	ug/kg	21.5	6.1	1	03/17/21 16:07	03/17/21 23:11	1330-20-7	
m&p-Xylene	69.5	ug/kg	21.5	7.3	1	03/17/21 16:07	03/17/21 23:11	179601-23-1	
o-Xylene	61.1	ug/kg	10.7	4.7	1	03/17/21 16:07	03/17/21 23:11	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/17/21 16:07	03/17/21 23:11	2037-26-5	
4-Bromofluorobenzene (S)	95	%	69-134		1	03/17/21 16:07	03/17/21 23:11	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/17/21 16:07	03/17/21 23:11	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	35.9	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (0.5-1.0) **Lab ID: 92528011009** Collected: 03/15/21 13:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	414	146	1	03/17/21 16:29	03/18/21 14:20	83-32-9	
Acenaphthylene	ND	ug/kg	414	146	1	03/17/21 16:29	03/18/21 14:20	208-96-8	
Aniline	ND	ug/kg	414	162	1	03/17/21 16:29	03/18/21 14:20	62-53-3	
Anthracene	ND	ug/kg	414	136	1	03/17/21 16:29	03/18/21 14:20	120-12-7	
Benzo(a)anthracene	ND	ug/kg	414	138	1	03/17/21 16:29	03/18/21 14:20	56-55-3	
Benzo(a)pyrene	ND	ug/kg	414	143	1	03/17/21 16:29	03/18/21 14:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	414	138	1	03/17/21 16:29	03/18/21 14:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	414	161	1	03/17/21 16:29	03/18/21 14:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	414	146	1	03/17/21 16:29	03/18/21 14:20	207-08-9	
Benzoic Acid	ND	ug/kg	2070	890	1	03/17/21 16:29	03/18/21 14:20	65-85-0	
Benzyl alcohol	ND	ug/kg	828	314	1	03/17/21 16:29	03/18/21 14:20	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	414	159	1	03/17/21 16:29	03/18/21 14:20	101-55-3	
Butylbenzylphthalate	ND	ug/kg	414	174	1	03/17/21 16:29	03/18/21 14:20	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	828	291	1	03/17/21 16:29	03/18/21 14:20	59-50-7	
4-Chloroaniline	ND	ug/kg	828	325	1	03/17/21 16:29	03/18/21 14:20	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	414	172	1	03/17/21 16:29	03/18/21 14:20	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	414	156	1	03/17/21 16:29	03/18/21 14:20	111-44-4	
2-Chloronaphthalene	ND	ug/kg	414	164	1	03/17/21 16:29	03/18/21 14:20	91-58-7	
2-Chlorophenol	ND	ug/kg	414	156	1	03/17/21 16:29	03/18/21 14:20	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	414	154	1	03/17/21 16:29	03/18/21 14:20	7005-72-3	
Chrysene	ND	ug/kg	414	151	1	03/17/21 16:29	03/18/21 14:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	414	159	1	03/17/21 16:29	03/18/21 14:20	53-70-3	
Dibenzofuran	ND	ug/kg	414	149	1	03/17/21 16:29	03/18/21 14:20	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	828	280	1	03/17/21 16:29	03/18/21 14:20	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	414	162	1	03/17/21 16:29	03/18/21 14:20	120-83-2	
Diethylphthalate	ND	ug/kg	414	152	1	03/17/21 16:29	03/18/21 14:20	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	414	172	1	03/17/21 16:29	03/18/21 14:20	105-67-9	
Dimethylphthalate	ND	ug/kg	414	151	1	03/17/21 16:29	03/18/21 14:20	131-11-3	
Di-n-butylphthalate	ND	ug/kg	414	139	1	03/17/21 16:29	03/18/21 14:20	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	828	387	1	03/17/21 16:29	03/18/21 14:20	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2070	1280	1	03/17/21 16:29	03/18/21 14:20	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	414	159	1	03/17/21 16:29	03/18/21 14:20	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	414	152	1	03/17/21 16:29	03/18/21 14:20	606-20-2	
Di-n-octylphthalate	ND	ug/kg	414	163	1	03/17/21 16:29	03/18/21 14:20	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	414	161	1	03/17/21 16:29	03/18/21 14:20	117-81-7	
Fluoranthene	ND	ug/kg	414	142	1	03/17/21 16:29	03/18/21 14:20	206-44-0	
Fluorene	ND	ug/kg	414	146	1	03/17/21 16:29	03/18/21 14:20	86-73-7	
Hexachlorobenzene	ND	ug/kg	414	162	1	03/17/21 16:29	03/18/21 14:20	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	414	237	1	03/17/21 16:29	03/18/21 14:20	77-47-4	
Hexachloroethane	ND	ug/kg	414	158	1	03/17/21 16:29	03/18/21 14:20	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	414	163	1	03/17/21 16:29	03/18/21 14:20	193-39-5	
Isophorone	ND	ug/kg	414	185	1	03/17/21 16:29	03/18/21 14:20	78-59-1	
1-Methylnaphthalene	ND	ug/kg	414	146	1	03/17/21 16:29	03/18/21 14:20	90-12-0	
2-Methylnaphthalene	ND	ug/kg	414	166	1	03/17/21 16:29	03/18/21 14:20	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-17 (0.5-1.0) **Lab ID: 92528011009** Collected: 03/15/21 13:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	414	169	1	03/17/21 16:29	03/18/21 14:20	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	414	167	1	03/17/21 16:29	03/18/21 14:20	15831-10-4	
2-Nitroaniline	ND	ug/kg	2070	339	1	03/17/21 16:29	03/18/21 14:20	88-74-4	
3-Nitroaniline	ND	ug/kg	2070	325	1	03/17/21 16:29	03/18/21 14:20	99-09-2	
4-Nitroaniline	ND	ug/kg	828	315	1	03/17/21 16:29	03/18/21 14:20	100-01-6	
Nitrobenzene	ND	ug/kg	414	192	1	03/17/21 16:29	03/18/21 14:20	98-95-3	
2-Nitrophenol	ND	ug/kg	414	179	1	03/17/21 16:29	03/18/21 14:20	88-75-5	
4-Nitrophenol	ND	ug/kg	2070	801	1	03/17/21 16:29	03/18/21 14:20	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	414	139	1	03/17/21 16:29	03/18/21 14:20	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	414	156	1	03/17/21 16:29	03/18/21 14:20	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	414	147	1	03/17/21 16:29	03/18/21 14:20	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	414	197	1	03/17/21 16:29	03/18/21 14:20	108-60-1	
Pentachlorophenol	ND	ug/kg	828	405	1	03/17/21 16:29	03/18/21 14:20	87-86-5	
Phenanthrene	ND	ug/kg	414	136	1	03/17/21 16:29	03/18/21 14:20	85-01-8	
Phenol	ND	ug/kg	414	185	1	03/17/21 16:29	03/18/21 14:20	108-95-2	
Pyrene	ND	ug/kg	414	168	1	03/17/21 16:29	03/18/21 14:20	129-00-0	
Pyridine	ND	ug/kg	414	131	1	03/17/21 16:29	03/18/21 14:20	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	414	190	1	03/17/21 16:29	03/18/21 14:20	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	414	171	1	03/17/21 16:29	03/18/21 14:20	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	81	%	21-130		1	03/17/21 16:29	03/18/21 14:20	4165-60-0	
2-Fluorobiphenyl (S)	66	%	19-130		1	03/17/21 16:29	03/18/21 14:20	321-60-8	
Terphenyl-d14 (S)	81	%	15-130		1	03/17/21 16:29	03/18/21 14:20	1718-51-0	
Phenol-d6 (S)	77	%	18-130		1	03/17/21 16:29	03/18/21 14:20	13127-88-3	
2-Fluorophenol (S)	70	%	18-130		1	03/17/21 16:29	03/18/21 14:20	367-12-4	
2,4,6-Tribromophenol (S)	64	%	18-130		1	03/17/21 16:29	03/18/21 14:20	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	174	56.0	1	03/17/21 16:07	03/17/21 19:04	67-64-1	
Benzene	ND	ug/kg	8.7	3.5	1	03/17/21 16:07	03/17/21 19:04	71-43-2	
Bromobenzene	ND	ug/kg	8.7	2.8	1	03/17/21 16:07	03/17/21 19:04	108-86-1	
Bromochloromethane	ND	ug/kg	8.7	2.6	1	03/17/21 16:07	03/17/21 19:04	74-97-5	
Bromodichloromethane	ND	ug/kg	8.7	3.4	1	03/17/21 16:07	03/17/21 19:04	75-27-4	
Bromoform	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	75-25-2	
Bromomethane	ND	ug/kg	17.4	13.8	1	03/17/21 16:07	03/17/21 19:04	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	174	41.9	1	03/17/21 16:07	03/17/21 19:04	78-93-3	
n-Butylbenzene	ND	ug/kg	8.7	4.1	1	03/17/21 16:07	03/17/21 19:04	104-51-8	
sec-Butylbenzene	ND	ug/kg	8.7	3.8	1	03/17/21 16:07	03/17/21 19:04	135-98-8	
tert-Butylbenzene	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	8.7	3.3	1	03/17/21 16:07	03/17/21 19:04	56-23-5	
Chlorobenzene	ND	ug/kg	8.7	1.7	1	03/17/21 16:07	03/17/21 19:04	108-90-7	
Chloroethane	ND	ug/kg	17.4	6.7	1	03/17/21 16:07	03/17/21 19:04	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (0.5-1.0) Lab ID: 92528011009 Collected: 03/15/21 13:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	8.7	5.3	1	03/17/21 16:07	03/17/21 19:04	67-66-3	
Chloromethane	ND	ug/kg	17.4	7.3	1	03/17/21 16:07	03/17/21 19:04	74-87-3	
2-Chlorotoluene	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	95-49-8	
4-Chlorotoluene	ND	ug/kg	8.7	1.5	1	03/17/21 16:07	03/17/21 19:04	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	8.7	3.4	1	03/17/21 16:07	03/17/21 19:04	96-12-8	
Dibromochloromethane	ND	ug/kg	8.7	4.9	1	03/17/21 16:07	03/17/21 19:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	8.7	3.8	1	03/17/21 16:07	03/17/21 19:04	106-93-4	
Dibromomethane	ND	ug/kg	8.7	1.9	1	03/17/21 16:07	03/17/21 19:04	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	8.7	2.7	1	03/17/21 16:07	03/17/21 19:04	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	8.7	2.3	1	03/17/21 16:07	03/17/21 19:04	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	17.4	3.8	1	03/17/21 16:07	03/17/21 19:04	75-71-8	
1,1-Dichloroethane	ND	ug/kg	8.7	3.6	1	03/17/21 16:07	03/17/21 19:04	75-34-3	
1,2-Dichloroethane	ND	ug/kg	8.7	5.8	1	03/17/21 16:07	03/17/21 19:04	107-06-2	
1,1-Dichloroethene	ND	ug/kg	8.7	3.6	1	03/17/21 16:07	03/17/21 19:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	8.7	3.0	1	03/17/21 16:07	03/17/21 19:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	156-60-5	
1,2-Dichloropropane	ND	ug/kg	8.7	2.6	1	03/17/21 16:07	03/17/21 19:04	78-87-5	
1,3-Dichloropropane	ND	ug/kg	8.7	2.7	1	03/17/21 16:07	03/17/21 19:04	142-28-9	
2,2-Dichloropropane	ND	ug/kg	8.7	2.8	1	03/17/21 16:07	03/17/21 19:04	594-20-7	
1,1-Dichloropropene	ND	ug/kg	8.7	4.2	1	03/17/21 16:07	03/17/21 19:04	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	8.7	2.4	1	03/17/21 16:07	03/17/21 19:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	8.7	3.0	1	03/17/21 16:07	03/17/21 19:04	10061-02-6	
Diisopropyl ether	ND	ug/kg	8.7	2.4	1	03/17/21 16:07	03/17/21 19:04	108-20-3	
Ethylbenzene	ND	ug/kg	8.7	4.1	1	03/17/21 16:07	03/17/21 19:04	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	17.4	14.3	1	03/17/21 16:07	03/17/21 19:04	87-68-3	IK
2-Hexanone	ND	ug/kg	87.2	8.4	1	03/17/21 16:07	03/17/21 19:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	8.7	3.0	1	03/17/21 16:07	03/17/21 19:04	98-82-8	
p-Isopropyltoluene	ND	ug/kg	8.7	4.3	1	03/17/21 16:07	03/17/21 19:04	99-87-6	
Methylene Chloride	ND	ug/kg	34.9	23.9	1	03/17/21 16:07	03/17/21 19:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	87.2	8.4	1	03/17/21 16:07	03/17/21 19:04	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	8.7	3.3	1	03/17/21 16:07	03/17/21 19:04	1634-04-4	
Naphthalene	8.0J	ug/kg	8.7	4.6	1	03/17/21 16:07	03/17/21 19:04	91-20-3	C8
n-Propylbenzene	ND	ug/kg	8.7	3.1	1	03/17/21 16:07	03/17/21 19:04	103-65-1	
Styrene	ND	ug/kg	8.7	2.3	1	03/17/21 16:07	03/17/21 19:04	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	8.7	3.3	1	03/17/21 16:07	03/17/21 19:04	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	8.7	2.3	1	03/17/21 16:07	03/17/21 19:04	79-34-5	
Tetrachloroethene	ND	ug/kg	8.7	2.8	1	03/17/21 16:07	03/17/21 19:04	127-18-4	
Toluene	12.7	ug/kg	8.7	2.5	1	03/17/21 16:07	03/17/21 19:04	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	8.7	7.0	1	03/17/21 16:07	03/17/21 19:04	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	8.7	7.3	1	03/17/21 16:07	03/17/21 19:04	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	8.7	4.5	1	03/17/21 16:07	03/17/21 19:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	8.7	2.9	1	03/17/21 16:07	03/17/21 19:04	79-00-5	
Trichloroethene	ND	ug/kg	8.7	2.2	1	03/17/21 16:07	03/17/21 19:04	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (0.5-1.0) **Lab ID: 92528011009** Collected: 03/15/21 13:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	8.7	4.8	1	03/17/21 16:07	03/17/21 19:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	8.7	4.4	1	03/17/21 16:07	03/17/21 19:04	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	8.7	2.4	1	03/17/21 16:07	03/17/21 19:04	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	8.7	2.9	1	03/17/21 16:07	03/17/21 19:04	108-67-8	
Vinyl acetate	ND	ug/kg	87.2	6.3	1	03/17/21 16:07	03/17/21 19:04	108-05-4	
Vinyl chloride	ND	ug/kg	17.4	4.4	1	03/17/21 16:07	03/17/21 19:04	75-01-4	
Xylene (Total)	11.4J	ug/kg	17.4	5.0	1	03/17/21 16:07	03/17/21 19:04	1330-20-7	
m&p-Xylene	11.4J	ug/kg	17.4	6.0	1	03/17/21 16:07	03/17/21 19:04	179601-23-1	
o-Xylene	ND	ug/kg	8.7	3.9	1	03/17/21 16:07	03/17/21 19:04	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	70-130		1	03/17/21 16:07	03/17/21 19:04	2037-26-5	
4-Bromofluorobenzene (S)	94	%	69-134		1	03/17/21 16:07	03/17/21 19:04	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/17/21 16:07	03/17/21 19:04	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	20.1	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (5.5-6.0) **Lab ID: 92528011010** Collected: 03/15/21 13:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	423	149	1	03/17/21 16:29	03/18/21 14:51	83-32-9	
Acenaphthylene	ND	ug/kg	423	149	1	03/17/21 16:29	03/18/21 14:51	208-96-8	
Aniline	ND	ug/kg	423	165	1	03/17/21 16:29	03/18/21 14:51	62-53-3	
Anthracene	ND	ug/kg	423	138	1	03/17/21 16:29	03/18/21 14:51	120-12-7	
Benzo(a)anthracene	ND	ug/kg	423	141	1	03/17/21 16:29	03/18/21 14:51	56-55-3	
Benzo(a)pyrene	ND	ug/kg	423	146	1	03/17/21 16:29	03/18/21 14:51	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	423	141	1	03/17/21 16:29	03/18/21 14:51	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	423	164	1	03/17/21 16:29	03/18/21 14:51	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	423	149	1	03/17/21 16:29	03/18/21 14:51	207-08-9	
Benzoic Acid	ND	ug/kg	2120	909	1	03/17/21 16:29	03/18/21 14:51	65-85-0	
Benzyl alcohol	ND	ug/kg	846	321	1	03/17/21 16:29	03/18/21 14:51	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	423	163	1	03/17/21 16:29	03/18/21 14:51	101-55-3	
Butylbenzylphthalate	ND	ug/kg	423	178	1	03/17/21 16:29	03/18/21 14:51	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	846	297	1	03/17/21 16:29	03/18/21 14:51	59-50-7	
4-Chloroaniline	ND	ug/kg	846	332	1	03/17/21 16:29	03/18/21 14:51	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	423	176	1	03/17/21 16:29	03/18/21 14:51	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	423	159	1	03/17/21 16:29	03/18/21 14:51	111-44-4	
2-Chloronaphthalene	ND	ug/kg	423	168	1	03/17/21 16:29	03/18/21 14:51	91-58-7	
2-Chlorophenol	ND	ug/kg	423	159	1	03/17/21 16:29	03/18/21 14:51	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	423	158	1	03/17/21 16:29	03/18/21 14:51	7005-72-3	
Chrysene	ND	ug/kg	423	154	1	03/17/21 16:29	03/18/21 14:51	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	423	163	1	03/17/21 16:29	03/18/21 14:51	53-70-3	
Dibenzofuran	ND	ug/kg	423	153	1	03/17/21 16:29	03/18/21 14:51	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	846	286	1	03/17/21 16:29	03/18/21 14:51	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	423	165	1	03/17/21 16:29	03/18/21 14:51	120-83-2	
Diethylphthalate	ND	ug/kg	423	155	1	03/17/21 16:29	03/18/21 14:51	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	423	176	1	03/17/21 16:29	03/18/21 14:51	105-67-9	
Dimethylphthalate	ND	ug/kg	423	154	1	03/17/21 16:29	03/18/21 14:51	131-11-3	
Di-n-butylphthalate	ND	ug/kg	423	142	1	03/17/21 16:29	03/18/21 14:51	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	846	395	1	03/17/21 16:29	03/18/21 14:51	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2120	1310	1	03/17/21 16:29	03/18/21 14:51	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	423	163	1	03/17/21 16:29	03/18/21 14:51	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	423	155	1	03/17/21 16:29	03/18/21 14:51	606-20-2	
Di-n-octylphthalate	ND	ug/kg	423	167	1	03/17/21 16:29	03/18/21 14:51	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	423	164	1	03/17/21 16:29	03/18/21 14:51	117-81-7	
Fluoranthene	ND	ug/kg	423	145	1	03/17/21 16:29	03/18/21 14:51	206-44-0	
Fluorene	ND	ug/kg	423	149	1	03/17/21 16:29	03/18/21 14:51	86-73-7	
Hexachlorobenzene	ND	ug/kg	423	165	1	03/17/21 16:29	03/18/21 14:51	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	423	242	1	03/17/21 16:29	03/18/21 14:51	77-47-4	
Hexachloroethane	ND	ug/kg	423	162	1	03/17/21 16:29	03/18/21 14:51	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	423	167	1	03/17/21 16:29	03/18/21 14:51	193-39-5	
Isophorone	ND	ug/kg	423	188	1	03/17/21 16:29	03/18/21 14:51	78-59-1	
1-Methylnaphthalene	ND	ug/kg	423	149	1	03/17/21 16:29	03/18/21 14:51	90-12-0	
2-Methylnaphthalene	ND	ug/kg	423	169	1	03/17/21 16:29	03/18/21 14:51	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (5.5-6.0) Lab ID: 92528011010 Collected: 03/15/21 13:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	423	173	1	03/17/21 16:29	03/18/21 14:51	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	423	171	1	03/17/21 16:29	03/18/21 14:51	15831-10-4	
2-Nitroaniline	ND	ug/kg	2120	346	1	03/17/21 16:29	03/18/21 14:51	88-74-4	
3-Nitroaniline	ND	ug/kg	2120	332	1	03/17/21 16:29	03/18/21 14:51	99-09-2	
4-Nitroaniline	ND	ug/kg	846	322	1	03/17/21 16:29	03/18/21 14:51	100-01-6	
Nitrobenzene	ND	ug/kg	423	196	1	03/17/21 16:29	03/18/21 14:51	98-95-3	
2-Nitrophenol	ND	ug/kg	423	183	1	03/17/21 16:29	03/18/21 14:51	88-75-5	
4-Nitrophenol	ND	ug/kg	2120	818	1	03/17/21 16:29	03/18/21 14:51	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	423	142	1	03/17/21 16:29	03/18/21 14:51	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	423	159	1	03/17/21 16:29	03/18/21 14:51	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	423	150	1	03/17/21 16:29	03/18/21 14:51	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	423	201	1	03/17/21 16:29	03/18/21 14:51	108-60-1	
Pentachlorophenol	ND	ug/kg	846	414	1	03/17/21 16:29	03/18/21 14:51	87-86-5	
Phenanthrene	ND	ug/kg	423	138	1	03/17/21 16:29	03/18/21 14:51	85-01-8	
Phenol	ND	ug/kg	423	188	1	03/17/21 16:29	03/18/21 14:51	108-95-2	
Pyrene	ND	ug/kg	423	172	1	03/17/21 16:29	03/18/21 14:51	129-00-0	
Pyridine	ND	ug/kg	423	133	1	03/17/21 16:29	03/18/21 14:51	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	423	194	1	03/17/21 16:29	03/18/21 14:51	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	423	174	1	03/17/21 16:29	03/18/21 14:51	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	64	%	21-130		1	03/17/21 16:29	03/18/21 14:51	4165-60-0	
2-Fluorobiphenyl (S)	44	%	19-130		1	03/17/21 16:29	03/18/21 14:51	321-60-8	
Terphenyl-d14 (S)	49	%	15-130		1	03/17/21 16:29	03/18/21 14:51	1718-51-0	
Phenol-d6 (S)	63	%	18-130		1	03/17/21 16:29	03/18/21 14:51	13127-88-3	
2-Fluorophenol (S)	61	%	18-130		1	03/17/21 16:29	03/18/21 14:51	367-12-4	
2,4,6-Tribromophenol (S)	66	%	18-130		1	03/17/21 16:29	03/18/21 14:51	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	129	41.3	1	03/17/21 16:07	03/17/21 19:22	67-64-1	
Benzene	ND	ug/kg	6.4	2.6	1	03/17/21 16:07	03/17/21 19:22	71-43-2	
Bromobenzene	ND	ug/kg	6.4	2.1	1	03/17/21 16:07	03/17/21 19:22	108-86-1	
Bromochloromethane	ND	ug/kg	6.4	1.9	1	03/17/21 16:07	03/17/21 19:22	74-97-5	
Bromodichloromethane	ND	ug/kg	6.4	2.5	1	03/17/21 16:07	03/17/21 19:22	75-27-4	
Bromoform	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	75-25-2	
Bromomethane	ND	ug/kg	12.9	10.2	1	03/17/21 16:07	03/17/21 19:22	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	129	30.9	1	03/17/21 16:07	03/17/21 19:22	78-93-3	
n-Butylbenzene	ND	ug/kg	6.4	3.0	1	03/17/21 16:07	03/17/21 19:22	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.4	2.8	1	03/17/21 16:07	03/17/21 19:22	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	6.4	2.4	1	03/17/21 16:07	03/17/21 19:22	56-23-5	
Chlorobenzene	ND	ug/kg	6.4	1.2	1	03/17/21 16:07	03/17/21 19:22	108-90-7	
Chloroethane	ND	ug/kg	12.9	5.0	1	03/17/21 16:07	03/17/21 19:22	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (5.5-6.0) Lab ID: 92528011010 Collected: 03/15/21 13:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.4	3.9	1	03/17/21 16:07	03/17/21 19:22	67-66-3	
Chloromethane	ND	ug/kg	12.9	5.4	1	03/17/21 16:07	03/17/21 19:22	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.4	1.1	1	03/17/21 16:07	03/17/21 19:22	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.4	2.5	1	03/17/21 16:07	03/17/21 19:22	96-12-8	
Dibromochloromethane	ND	ug/kg	6.4	3.6	1	03/17/21 16:07	03/17/21 19:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.4	2.8	1	03/17/21 16:07	03/17/21 19:22	106-93-4	
Dibromomethane	ND	ug/kg	6.4	1.4	1	03/17/21 16:07	03/17/21 19:22	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.4	2.0	1	03/17/21 16:07	03/17/21 19:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.4	1.7	1	03/17/21 16:07	03/17/21 19:22	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.9	2.8	1	03/17/21 16:07	03/17/21 19:22	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.4	2.7	1	03/17/21 16:07	03/17/21 19:22	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.4	4.3	1	03/17/21 16:07	03/17/21 19:22	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.4	2.7	1	03/17/21 16:07	03/17/21 19:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.4	2.2	1	03/17/21 16:07	03/17/21 19:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.4	1.9	1	03/17/21 16:07	03/17/21 19:22	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.4	2.0	1	03/17/21 16:07	03/17/21 19:22	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.4	2.1	1	03/17/21 16:07	03/17/21 19:22	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.4	3.1	1	03/17/21 16:07	03/17/21 19:22	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.4	1.8	1	03/17/21 16:07	03/17/21 19:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.4	2.2	1	03/17/21 16:07	03/17/21 19:22	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.4	1.7	1	03/17/21 16:07	03/17/21 19:22	108-20-3	
Ethylbenzene	ND	ug/kg	6.4	3.0	1	03/17/21 16:07	03/17/21 19:22	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	12.9	10.5	1	03/17/21 16:07	03/17/21 19:22	87-68-3	IK
2-Hexanone	ND	ug/kg	64.4	6.2	1	03/17/21 16:07	03/17/21 19:22	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.4	2.2	1	03/17/21 16:07	03/17/21 19:22	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.4	3.2	1	03/17/21 16:07	03/17/21 19:22	99-87-6	
Methylene Chloride	ND	ug/kg	25.7	17.6	1	03/17/21 16:07	03/17/21 19:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	64.4	6.2	1	03/17/21 16:07	03/17/21 19:22	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.4	2.4	1	03/17/21 16:07	03/17/21 19:22	1634-04-4	
Naphthalene	ND	ug/kg	6.4	3.4	1	03/17/21 16:07	03/17/21 19:22	91-20-3	
n-Propylbenzene	ND	ug/kg	6.4	2.3	1	03/17/21 16:07	03/17/21 19:22	103-65-1	
Styrene	ND	ug/kg	6.4	1.7	1	03/17/21 16:07	03/17/21 19:22	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.4	2.5	1	03/17/21 16:07	03/17/21 19:22	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.4	1.7	1	03/17/21 16:07	03/17/21 19:22	79-34-5	
Tetrachloroethene	ND	ug/kg	6.4	2.0	1	03/17/21 16:07	03/17/21 19:22	127-18-4	
Toluene	5.0J	ug/kg	6.4	1.8	1	03/17/21 16:07	03/17/21 19:22	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.4	5.2	1	03/17/21 16:07	03/17/21 19:22	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.4	5.4	1	03/17/21 16:07	03/17/21 19:22	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.4	3.3	1	03/17/21 16:07	03/17/21 19:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.4	2.1	1	03/17/21 16:07	03/17/21 19:22	79-00-5	
Trichloroethene	ND	ug/kg	6.4	1.7	1	03/17/21 16:07	03/17/21 19:22	79-01-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-17 (5.5-6.0) Lab ID: 92528011010 Collected: 03/15/21 13:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	6.4	3.5	1	03/17/21 16:07	03/17/21 19:22	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.4	3.3	1	03/17/21 16:07	03/17/21 19:22	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.4	1.8	1	03/17/21 16:07	03/17/21 19:22	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.4	2.2	1	03/17/21 16:07	03/17/21 19:22	108-67-8	
Vinyl acetate	ND	ug/kg	64.4	4.7	1	03/17/21 16:07	03/17/21 19:22	108-05-4	
Vinyl chloride	ND	ug/kg	12.9	3.3	1	03/17/21 16:07	03/17/21 19:22	75-01-4	
Xylene (Total)	ND	ug/kg	12.9	3.7	1	03/17/21 16:07	03/17/21 19:22	1330-20-7	
m&p-Xylene	ND	ug/kg	12.9	4.4	1	03/17/21 16:07	03/17/21 19:22	179601-23-1	
o-Xylene	ND	ug/kg	6.4	2.8	1	03/17/21 16:07	03/17/21 19:22	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	03/17/21 16:07	03/17/21 19:22	2037-26-5	
4-Bromofluorobenzene (S)	92	%	69-134		1	03/17/21 16:07	03/17/21 19:22	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1	03/17/21 16:07	03/17/21 19:22	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	21.7	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (0.5-1.0) **Lab ID: 92528011011** Collected: 03/15/21 13:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	411	144	1	03/17/21 16:29	03/18/21 15:22	83-32-9	
Acenaphthylene	ND	ug/kg	411	144	1	03/17/21 16:29	03/18/21 15:22	208-96-8	
Aniline	ND	ug/kg	411	161	1	03/17/21 16:29	03/18/21 15:22	62-53-3	
Anthracene	ND	ug/kg	411	134	1	03/17/21 16:29	03/18/21 15:22	120-12-7	
Benzo(a)anthracene	ND	ug/kg	411	137	1	03/17/21 16:29	03/18/21 15:22	56-55-3	
Benzo(a)pyrene	ND	ug/kg	411	142	1	03/17/21 16:29	03/18/21 15:22	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	411	137	1	03/17/21 16:29	03/18/21 15:22	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	411	159	1	03/17/21 16:29	03/18/21 15:22	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	411	144	1	03/17/21 16:29	03/18/21 15:22	207-08-9	
Benzoic Acid	ND	ug/kg	2050	882	1	03/17/21 16:29	03/18/21 15:22	65-85-0	
Benzyl alcohol	ND	ug/kg	821	311	1	03/17/21 16:29	03/18/21 15:22	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	411	158	1	03/17/21 16:29	03/18/21 15:22	101-55-3	
Butylbenzylphthalate	ND	ug/kg	411	173	1	03/17/21 16:29	03/18/21 15:22	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	821	289	1	03/17/21 16:29	03/18/21 15:22	59-50-7	
4-Chloroaniline	ND	ug/kg	821	322	1	03/17/21 16:29	03/18/21 15:22	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	411	170	1	03/17/21 16:29	03/18/21 15:22	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	411	154	1	03/17/21 16:29	03/18/21 15:22	111-44-4	
2-Chloronaphthalene	ND	ug/kg	411	163	1	03/17/21 16:29	03/18/21 15:22	91-58-7	
2-Chlorophenol	ND	ug/kg	411	154	1	03/17/21 16:29	03/18/21 15:22	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	411	153	1	03/17/21 16:29	03/18/21 15:22	7005-72-3	
Chrysene	ND	ug/kg	411	149	1	03/17/21 16:29	03/18/21 15:22	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	411	158	1	03/17/21 16:29	03/18/21 15:22	53-70-3	
Dibenzofuran	ND	ug/kg	411	148	1	03/17/21 16:29	03/18/21 15:22	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	821	277	1	03/17/21 16:29	03/18/21 15:22	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	411	161	1	03/17/21 16:29	03/18/21 15:22	120-83-2	
Diethylphthalate	ND	ug/kg	411	151	1	03/17/21 16:29	03/18/21 15:22	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	411	170	1	03/17/21 16:29	03/18/21 15:22	105-67-9	
Dimethylphthalate	ND	ug/kg	411	149	1	03/17/21 16:29	03/18/21 15:22	131-11-3	
Di-n-butylphthalate	ND	ug/kg	411	138	1	03/17/21 16:29	03/18/21 15:22	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	821	383	1	03/17/21 16:29	03/18/21 15:22	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2050	1270	1	03/17/21 16:29	03/18/21 15:22	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	411	158	1	03/17/21 16:29	03/18/21 15:22	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	411	151	1	03/17/21 16:29	03/18/21 15:22	606-20-2	
Di-n-octylphthalate	ND	ug/kg	411	162	1	03/17/21 16:29	03/18/21 15:22	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	411	159	1	03/17/21 16:29	03/18/21 15:22	117-81-7	
Fluoranthene	ND	ug/kg	411	141	1	03/17/21 16:29	03/18/21 15:22	206-44-0	
Fluorene	ND	ug/kg	411	144	1	03/17/21 16:29	03/18/21 15:22	86-73-7	
Hexachlorobenzene	ND	ug/kg	411	161	1	03/17/21 16:29	03/18/21 15:22	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	411	235	1	03/17/21 16:29	03/18/21 15:22	77-47-4	
Hexachloroethane	ND	ug/kg	411	157	1	03/17/21 16:29	03/18/21 15:22	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	411	162	1	03/17/21 16:29	03/18/21 15:22	193-39-5	
Isophorone	ND	ug/kg	411	183	1	03/17/21 16:29	03/18/21 15:22	78-59-1	
1-Methylnaphthalene	ND	ug/kg	411	144	1	03/17/21 16:29	03/18/21 15:22	90-12-0	
2-Methylnaphthalene	ND	ug/kg	411	164	1	03/17/21 16:29	03/18/21 15:22	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-18 (0.5-1.0) **Lab ID: 92528011011** Collected: 03/15/21 13:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	411	168	1	03/17/21 16:29	03/18/21 15:22	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	411	165	1	03/17/21 16:29	03/18/21 15:22	15831-10-4	
2-Nitroaniline	ND	ug/kg	2050	336	1	03/17/21 16:29	03/18/21 15:22	88-74-4	
3-Nitroaniline	ND	ug/kg	2050	322	1	03/17/21 16:29	03/18/21 15:22	99-09-2	
4-Nitroaniline	ND	ug/kg	821	312	1	03/17/21 16:29	03/18/21 15:22	100-01-6	
Nitrobenzene	ND	ug/kg	411	190	1	03/17/21 16:29	03/18/21 15:22	98-95-3	
2-Nitrophenol	ND	ug/kg	411	178	1	03/17/21 16:29	03/18/21 15:22	88-75-5	
4-Nitrophenol	ND	ug/kg	2050	794	1	03/17/21 16:29	03/18/21 15:22	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	411	138	1	03/17/21 16:29	03/18/21 15:22	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	411	154	1	03/17/21 16:29	03/18/21 15:22	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	411	146	1	03/17/21 16:29	03/18/21 15:22	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	411	195	1	03/17/21 16:29	03/18/21 15:22	108-60-1	
Pentachlorophenol	ND	ug/kg	821	402	1	03/17/21 16:29	03/18/21 15:22	87-86-5	
Phenanthrene	ND	ug/kg	411	134	1	03/17/21 16:29	03/18/21 15:22	85-01-8	
Phenol	ND	ug/kg	411	183	1	03/17/21 16:29	03/18/21 15:22	108-95-2	
Pyrene	ND	ug/kg	411	167	1	03/17/21 16:29	03/18/21 15:22	129-00-0	
Pyridine	ND	ug/kg	411	129	1	03/17/21 16:29	03/18/21 15:22	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	411	188	1	03/17/21 16:29	03/18/21 15:22	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	411	169	1	03/17/21 16:29	03/18/21 15:22	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	76	%	21-130		1	03/17/21 16:29	03/18/21 15:22	4165-60-0	
2-Fluorobiphenyl (S)	49	%	19-130		1	03/17/21 16:29	03/18/21 15:22	321-60-8	
Terphenyl-d14 (S)	64	%	15-130		1	03/17/21 16:29	03/18/21 15:22	1718-51-0	
Phenol-d6 (S)	71	%	18-130		1	03/17/21 16:29	03/18/21 15:22	13127-88-3	
2-Fluorophenol (S)	64	%	18-130		1	03/17/21 16:29	03/18/21 15:22	367-12-4	
2,4,6-Tribromophenol (S)	49	%	18-130		1	03/17/21 16:29	03/18/21 15:22	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	148	47.6	1	03/17/21 16:07	03/17/21 19:40	67-64-1	
Benzene	ND	ug/kg	7.4	3.0	1	03/17/21 16:07	03/17/21 19:40	71-43-2	
Bromobenzene	ND	ug/kg	7.4	2.4	1	03/17/21 16:07	03/17/21 19:40	108-86-1	
Bromochloromethane	ND	ug/kg	7.4	2.2	1	03/17/21 16:07	03/17/21 19:40	74-97-5	
Bromodichloromethane	ND	ug/kg	7.4	2.9	1	03/17/21 16:07	03/17/21 19:40	75-27-4	
Bromoform	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	75-25-2	
Bromomethane	ND	ug/kg	14.8	11.7	1	03/17/21 16:07	03/17/21 19:40	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	148	35.6	1	03/17/21 16:07	03/17/21 19:40	78-93-3	
n-Butylbenzene	ND	ug/kg	7.4	3.5	1	03/17/21 16:07	03/17/21 19:40	104-51-8	
sec-Butylbenzene	ND	ug/kg	7.4	3.3	1	03/17/21 16:07	03/17/21 19:40	135-98-8	
tert-Butylbenzene	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	7.4	2.8	1	03/17/21 16:07	03/17/21 19:40	56-23-5	
Chlorobenzene	ND	ug/kg	7.4	1.4	1	03/17/21 16:07	03/17/21 19:40	108-90-7	
Chloroethane	ND	ug/kg	14.8	5.7	1	03/17/21 16:07	03/17/21 19:40	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (0.5-1.0) **Lab ID: 92528011011** Collected: 03/15/21 13:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	7.4	4.5	1	03/17/21 16:07	03/17/21 19:40	67-66-3	
Chloromethane	ND	ug/kg	14.8	6.2	1	03/17/21 16:07	03/17/21 19:40	74-87-3	
2-Chlorotoluene	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	95-49-8	
4-Chlorotoluene	ND	ug/kg	7.4	1.3	1	03/17/21 16:07	03/17/21 19:40	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.4	2.9	1	03/17/21 16:07	03/17/21 19:40	96-12-8	
Dibromochloromethane	ND	ug/kg	7.4	4.2	1	03/17/21 16:07	03/17/21 19:40	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	7.4	3.3	1	03/17/21 16:07	03/17/21 19:40	106-93-4	
Dibromomethane	ND	ug/kg	7.4	1.6	1	03/17/21 16:07	03/17/21 19:40	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	7.4	2.7	1	03/17/21 16:07	03/17/21 19:40	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	7.4	2.3	1	03/17/21 16:07	03/17/21 19:40	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	7.4	1.9	1	03/17/21 16:07	03/17/21 19:40	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	14.8	3.2	1	03/17/21 16:07	03/17/21 19:40	75-71-8	
1,1-Dichloroethane	ND	ug/kg	7.4	3.1	1	03/17/21 16:07	03/17/21 19:40	75-34-3	
1,2-Dichloroethane	ND	ug/kg	7.4	4.9	1	03/17/21 16:07	03/17/21 19:40	107-06-2	
1,1-Dichloroethene	ND	ug/kg	7.4	3.1	1	03/17/21 16:07	03/17/21 19:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	7.4	2.5	1	03/17/21 16:07	03/17/21 19:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	156-60-5	
1,2-Dichloropropane	ND	ug/kg	7.4	2.2	1	03/17/21 16:07	03/17/21 19:40	78-87-5	
1,3-Dichloropropane	ND	ug/kg	7.4	2.3	1	03/17/21 16:07	03/17/21 19:40	142-28-9	
2,2-Dichloropropane	ND	ug/kg	7.4	2.4	1	03/17/21 16:07	03/17/21 19:40	594-20-7	
1,1-Dichloropropene	ND	ug/kg	7.4	3.6	1	03/17/21 16:07	03/17/21 19:40	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	7.4	2.0	1	03/17/21 16:07	03/17/21 19:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	10061-02-6	
Diisopropyl ether	ND	ug/kg	7.4	2.0	1	03/17/21 16:07	03/17/21 19:40	108-20-3	
Ethylbenzene	ND	ug/kg	7.4	3.5	1	03/17/21 16:07	03/17/21 19:40	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	14.8	12.1	1	03/17/21 16:07	03/17/21 19:40	87-68-3	IK
2-Hexanone	ND	ug/kg	74.1	7.1	1	03/17/21 16:07	03/17/21 19:40	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	7.4	2.5	1	03/17/21 16:07	03/17/21 19:40	98-82-8	
p-Isopropyltoluene	ND	ug/kg	7.4	3.6	1	03/17/21 16:07	03/17/21 19:40	99-87-6	
Methylene Chloride	ND	ug/kg	29.7	20.3	1	03/17/21 16:07	03/17/21 19:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	74.1	7.1	1	03/17/21 16:07	03/17/21 19:40	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	7.4	2.8	1	03/17/21 16:07	03/17/21 19:40	1634-04-4	
Naphthalene	ND	ug/kg	7.4	3.9	1	03/17/21 16:07	03/17/21 19:40	91-20-3	
n-Propylbenzene	ND	ug/kg	7.4	2.6	1	03/17/21 16:07	03/17/21 19:40	103-65-1	
Styrene	ND	ug/kg	7.4	2.0	1	03/17/21 16:07	03/17/21 19:40	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	7.4	2.8	1	03/17/21 16:07	03/17/21 19:40	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	7.4	2.0	1	03/17/21 16:07	03/17/21 19:40	79-34-5	
Tetrachloroethene	ND	ug/kg	7.4	2.3	1	03/17/21 16:07	03/17/21 19:40	127-18-4	
Toluene	ND	ug/kg	7.4	2.1	1	03/17/21 16:07	03/17/21 19:40	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	7.4	6.0	1	03/17/21 16:07	03/17/21 19:40	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	7.4	6.2	1	03/17/21 16:07	03/17/21 19:40	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	7.4	3.9	1	03/17/21 16:07	03/17/21 19:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	7.4	2.5	1	03/17/21 16:07	03/17/21 19:40	79-00-5	
Trichloroethene	ND	ug/kg	7.4	1.9	1	03/17/21 16:07	03/17/21 19:40	79-01-6	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (0.5-1.0) **Lab ID: 92528011011** Collected: 03/15/21 13:45 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	7.4	4.1	1	03/17/21 16:07	03/17/21 19:40	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	7.4	3.8	1	03/17/21 16:07	03/17/21 19:40	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	7.4	2.0	1	03/17/21 16:07	03/17/21 19:40	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	7.4	2.5	1	03/17/21 16:07	03/17/21 19:40	108-67-8	
Vinyl acetate	ND	ug/kg	74.1	5.4	1	03/17/21 16:07	03/17/21 19:40	108-05-4	
Vinyl chloride	ND	ug/kg	14.8	3.8	1	03/17/21 16:07	03/17/21 19:40	75-01-4	
Xylene (Total)	ND	ug/kg	14.8	4.2	1	03/17/21 16:07	03/17/21 19:40	1330-20-7	
m&p-Xylene	ND	ug/kg	14.8	5.1	1	03/17/21 16:07	03/17/21 19:40	179601-23-1	
o-Xylene	ND	ug/kg	7.4	3.3	1	03/17/21 16:07	03/17/21 19:40	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	70-130		1	03/17/21 16:07	03/17/21 19:40	2037-26-5	
4-Bromofluorobenzene (S)	94	%	69-134		1	03/17/21 16:07	03/17/21 19:40	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1	03/17/21 16:07	03/17/21 19:40	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	20.4	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (5.5-6.0) **Lab ID: 92528011012** Collected: 03/15/21 13:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	429	151	1	03/17/21 16:29	03/18/21 15:53	83-32-9	
Acenaphthylene	ND	ug/kg	429	151	1	03/17/21 16:29	03/18/21 15:53	208-96-8	
Aniline	ND	ug/kg	429	168	1	03/17/21 16:29	03/18/21 15:53	62-53-3	
Anthracene	ND	ug/kg	429	140	1	03/17/21 16:29	03/18/21 15:53	120-12-7	
Benzo(a)anthracene	ND	ug/kg	429	143	1	03/17/21 16:29	03/18/21 15:53	56-55-3	
Benzo(a)pyrene	ND	ug/kg	429	148	1	03/17/21 16:29	03/18/21 15:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	429	143	1	03/17/21 16:29	03/18/21 15:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	429	166	1	03/17/21 16:29	03/18/21 15:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	429	151	1	03/17/21 16:29	03/18/21 15:53	207-08-9	
Benzoic Acid	ND	ug/kg	2140	921	1	03/17/21 16:29	03/18/21 15:53	65-85-0	
Benzyl alcohol	ND	ug/kg	858	325	1	03/17/21 16:29	03/18/21 15:53	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	429	165	1	03/17/21 16:29	03/18/21 15:53	101-55-3	
Butylbenzylphthalate	ND	ug/kg	429	181	1	03/17/21 16:29	03/18/21 15:53	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	858	302	1	03/17/21 16:29	03/18/21 15:53	59-50-7	
4-Chloroaniline	ND	ug/kg	858	337	1	03/17/21 16:29	03/18/21 15:53	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	429	178	1	03/17/21 16:29	03/18/21 15:53	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	429	161	1	03/17/21 16:29	03/18/21 15:53	111-44-4	
2-Chloronaphthalene	ND	ug/kg	429	170	1	03/17/21 16:29	03/18/21 15:53	91-58-7	
2-Chlorophenol	ND	ug/kg	429	161	1	03/17/21 16:29	03/18/21 15:53	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	429	160	1	03/17/21 16:29	03/18/21 15:53	7005-72-3	
Chrysene	ND	ug/kg	429	156	1	03/17/21 16:29	03/18/21 15:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	429	165	1	03/17/21 16:29	03/18/21 15:53	53-70-3	
Dibenzofuran	ND	ug/kg	429	155	1	03/17/21 16:29	03/18/21 15:53	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	858	290	1	03/17/21 16:29	03/18/21 15:53	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	429	168	1	03/17/21 16:29	03/18/21 15:53	120-83-2	
Diethylphthalate	ND	ug/kg	429	157	1	03/17/21 16:29	03/18/21 15:53	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	429	178	1	03/17/21 16:29	03/18/21 15:53	105-67-9	
Dimethylphthalate	ND	ug/kg	429	156	1	03/17/21 16:29	03/18/21 15:53	131-11-3	
Di-n-butylphthalate	ND	ug/kg	429	144	1	03/17/21 16:29	03/18/21 15:53	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	858	400	1	03/17/21 16:29	03/18/21 15:53	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2140	1330	1	03/17/21 16:29	03/18/21 15:53	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	429	165	1	03/17/21 16:29	03/18/21 15:53	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	429	157	1	03/17/21 16:29	03/18/21 15:53	606-20-2	
Di-n-octylphthalate	ND	ug/kg	429	169	1	03/17/21 16:29	03/18/21 15:53	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	429	166	1	03/17/21 16:29	03/18/21 15:53	117-81-7	
Fluoranthene	ND	ug/kg	429	147	1	03/17/21 16:29	03/18/21 15:53	206-44-0	
Fluorene	ND	ug/kg	429	151	1	03/17/21 16:29	03/18/21 15:53	86-73-7	
Hexachlorobenzene	ND	ug/kg	429	168	1	03/17/21 16:29	03/18/21 15:53	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	429	246	1	03/17/21 16:29	03/18/21 15:53	77-47-4	
Hexachloroethane	ND	ug/kg	429	164	1	03/17/21 16:29	03/18/21 15:53	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	429	169	1	03/17/21 16:29	03/18/21 15:53	193-39-5	
Isophorone	ND	ug/kg	429	191	1	03/17/21 16:29	03/18/21 15:53	78-59-1	
1-Methylnaphthalene	ND	ug/kg	429	151	1	03/17/21 16:29	03/18/21 15:53	90-12-0	
2-Methylnaphthalene	ND	ug/kg	429	172	1	03/17/21 16:29	03/18/21 15:53	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (5.5-6.0) Lab ID: 92528011012 Collected: 03/15/21 13:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	429	175	1	03/17/21 16:29	03/18/21 15:53	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	429	173	1	03/17/21 16:29	03/18/21 15:53	15831-10-4	
2-Nitroaniline	ND	ug/kg	2140	351	1	03/17/21 16:29	03/18/21 15:53	88-74-4	
3-Nitroaniline	ND	ug/kg	2140	337	1	03/17/21 16:29	03/18/21 15:53	99-09-2	
4-Nitroaniline	ND	ug/kg	858	326	1	03/17/21 16:29	03/18/21 15:53	100-01-6	
Nitrobenzene	ND	ug/kg	429	199	1	03/17/21 16:29	03/18/21 15:53	98-95-3	
2-Nitrophenol	ND	ug/kg	429	186	1	03/17/21 16:29	03/18/21 15:53	88-75-5	
4-Nitrophenol	ND	ug/kg	2140	829	1	03/17/21 16:29	03/18/21 15:53	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	429	144	1	03/17/21 16:29	03/18/21 15:53	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	429	161	1	03/17/21 16:29	03/18/21 15:53	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	429	152	1	03/17/21 16:29	03/18/21 15:53	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	429	204	1	03/17/21 16:29	03/18/21 15:53	108-60-1	
Pentachlorophenol	ND	ug/kg	858	420	1	03/17/21 16:29	03/18/21 15:53	87-86-5	
Phenanthrene	ND	ug/kg	429	140	1	03/17/21 16:29	03/18/21 15:53	85-01-8	
Phenol	ND	ug/kg	429	191	1	03/17/21 16:29	03/18/21 15:53	108-95-2	
Pyrene	ND	ug/kg	429	174	1	03/17/21 16:29	03/18/21 15:53	129-00-0	
Pyridine	ND	ug/kg	429	135	1	03/17/21 16:29	03/18/21 15:53	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	429	196	1	03/17/21 16:29	03/18/21 15:53	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	429	177	1	03/17/21 16:29	03/18/21 15:53	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	70	%	21-130		1	03/17/21 16:29	03/18/21 15:53	4165-60-0	
2-Fluorobiphenyl (S)	45	%	19-130		1	03/17/21 16:29	03/18/21 15:53	321-60-8	
Terphenyl-d14 (S)	49	%	15-130		1	03/17/21 16:29	03/18/21 15:53	1718-51-0	
Phenol-d6 (S)	68	%	18-130		1	03/17/21 16:29	03/18/21 15:53	13127-88-3	
2-Fluorophenol (S)	63	%	18-130		1	03/17/21 16:29	03/18/21 15:53	367-12-4	
2,4,6-Tribromophenol (S)	69	%	18-130		1	03/17/21 16:29	03/18/21 15:53	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	183	58.6	1	03/17/21 16:07	03/17/21 19:57	67-64-1	
Benzene	ND	ug/kg	9.1	3.6	1	03/17/21 16:07	03/17/21 19:57	71-43-2	
Bromobenzene	ND	ug/kg	9.1	3.0	1	03/17/21 16:07	03/17/21 19:57	108-86-1	
Bromochloromethane	ND	ug/kg	9.1	2.7	1	03/17/21 16:07	03/17/21 19:57	74-97-5	
Bromodichloromethane	ND	ug/kg	9.1	3.5	1	03/17/21 16:07	03/17/21 19:57	75-27-4	
Bromoform	ND	ug/kg	9.1	3.2	1	03/17/21 16:07	03/17/21 19:57	75-25-2	
Bromomethane	ND	ug/kg	18.3	14.4	1	03/17/21 16:07	03/17/21 19:57	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	183	43.8	1	03/17/21 16:07	03/17/21 19:57	78-93-3	
n-Butylbenzene	ND	ug/kg	9.1	4.3	1	03/17/21 16:07	03/17/21 19:57	104-51-8	
sec-Butylbenzene	ND	ug/kg	9.1	4.0	1	03/17/21 16:07	03/17/21 19:57	135-98-8	
tert-Butylbenzene	ND	ug/kg	9.1	3.3	1	03/17/21 16:07	03/17/21 19:57	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	9.1	3.4	1	03/17/21 16:07	03/17/21 19:57	56-23-5	
Chlorobenzene	ND	ug/kg	9.1	1.8	1	03/17/21 16:07	03/17/21 19:57	108-90-7	
Chloroethane	ND	ug/kg	18.3	7.0	1	03/17/21 16:07	03/17/21 19:57	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-18 (5.5-6.0) **Lab ID: 92528011012** Collected: 03/15/21 13:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	9.1	5.6	1	03/17/21 16:07	03/17/21 19:57	67-66-3	
Chloromethane	ND	ug/kg	18.3	7.7	1	03/17/21 16:07	03/17/21 19:57	74-87-3	
2-Chlorotoluene	ND	ug/kg	9.1	3.2	1	03/17/21 16:07	03/17/21 19:57	95-49-8	
4-Chlorotoluene	ND	ug/kg	9.1	1.6	1	03/17/21 16:07	03/17/21 19:57	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	9.1	3.5	1	03/17/21 16:07	03/17/21 19:57	96-12-8	
Dibromochloromethane	ND	ug/kg	9.1	5.1	1	03/17/21 16:07	03/17/21 19:57	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	9.1	4.0	1	03/17/21 16:07	03/17/21 19:57	106-93-4	
Dibromomethane	ND	ug/kg	9.1	2.0	1	03/17/21 16:07	03/17/21 19:57	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	9.1	3.3	1	03/17/21 16:07	03/17/21 19:57	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	9.1	2.8	1	03/17/21 16:07	03/17/21 19:57	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	9.1	2.4	1	03/17/21 16:07	03/17/21 19:57	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	18.3	4.0	1	03/17/21 16:07	03/17/21 19:57	75-71-8	
1,1-Dichloroethane	ND	ug/kg	9.1	3.8	1	03/17/21 16:07	03/17/21 19:57	75-34-3	
1,2-Dichloroethane	ND	ug/kg	9.1	6.0	1	03/17/21 16:07	03/17/21 19:57	107-06-2	
1,1-Dichloroethene	ND	ug/kg	9.1	3.8	1	03/17/21 16:07	03/17/21 19:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	9.1	3.1	1	03/17/21 16:07	03/17/21 19:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	9.1	3.2	1	03/17/21 16:07	03/17/21 19:57	156-60-5	
1,2-Dichloropropane	ND	ug/kg	9.1	2.7	1	03/17/21 16:07	03/17/21 19:57	78-87-5	
1,3-Dichloropropane	ND	ug/kg	9.1	2.8	1	03/17/21 16:07	03/17/21 19:57	142-28-9	
2,2-Dichloropropane	ND	ug/kg	9.1	3.0	1	03/17/21 16:07	03/17/21 19:57	594-20-7	
1,1-Dichloropropene	ND	ug/kg	9.1	4.4	1	03/17/21 16:07	03/17/21 19:57	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	9.1	2.5	1	03/17/21 16:07	03/17/21 19:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	9.1	3.1	1	03/17/21 16:07	03/17/21 19:57	10061-02-6	
Diisopropyl ether	ND	ug/kg	9.1	2.5	1	03/17/21 16:07	03/17/21 19:57	108-20-3	
Ethylbenzene	ND	ug/kg	9.1	4.3	1	03/17/21 16:07	03/17/21 19:57	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	18.3	14.9	1	03/17/21 16:07	03/17/21 19:57	87-68-3	IK
2-Hexanone	ND	ug/kg	91.3	8.8	1	03/17/21 16:07	03/17/21 19:57	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	9.1	3.1	1	03/17/21 16:07	03/17/21 19:57	98-82-8	
p-Isopropyltoluene	ND	ug/kg	9.1	4.5	1	03/17/21 16:07	03/17/21 19:57	99-87-6	
Methylene Chloride	ND	ug/kg	36.5	25.0	1	03/17/21 16:07	03/17/21 19:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	91.3	8.8	1	03/17/21 16:07	03/17/21 19:57	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	9.1	3.4	1	03/17/21 16:07	03/17/21 19:57	1634-04-4	
Naphthalene	ND	ug/kg	9.1	4.8	1	03/17/21 16:07	03/17/21 19:57	91-20-3	
n-Propylbenzene	ND	ug/kg	9.1	3.3	1	03/17/21 16:07	03/17/21 19:57	103-65-1	
Styrene	ND	ug/kg	9.1	2.4	1	03/17/21 16:07	03/17/21 19:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	9.1	3.5	1	03/17/21 16:07	03/17/21 19:57	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	9.1	2.4	1	03/17/21 16:07	03/17/21 19:57	79-34-5	
Tetrachloroethene	ND	ug/kg	9.1	2.9	1	03/17/21 16:07	03/17/21 19:57	127-18-4	
Toluene	ND	ug/kg	9.1	2.6	1	03/17/21 16:07	03/17/21 19:57	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	9.1	7.4	1	03/17/21 16:07	03/17/21 19:57	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	9.1	7.7	1	03/17/21 16:07	03/17/21 19:57	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	9.1	4.7	1	03/17/21 16:07	03/17/21 19:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	9.1	3.0	1	03/17/21 16:07	03/17/21 19:57	79-00-5	
Trichloroethene	ND	ug/kg	9.1	2.4	1	03/17/21 16:07	03/17/21 19:57	79-01-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-18 (5.5-6.0) **Lab ID: 92528011012** Collected: 03/15/21 13:50 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichlorofluoromethane	ND	ug/kg	9.1	5.0	1	03/17/21 16:07	03/17/21 19:57	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	9.1	4.6	1	03/17/21 16:07	03/17/21 19:57	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	9.1	2.5	1	03/17/21 16:07	03/17/21 19:57	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	9.1	3.1	1	03/17/21 16:07	03/17/21 19:57	108-67-8	
Vinyl acetate	ND	ug/kg	91.3	6.6	1	03/17/21 16:07	03/17/21 19:57	108-05-4	
Vinyl chloride	ND	ug/kg	18.3	4.6	1	03/17/21 16:07	03/17/21 19:57	75-01-4	
Xylene (Total)	ND	ug/kg	18.3	5.2	1	03/17/21 16:07	03/17/21 19:57	1330-20-7	
m&p-Xylene	ND	ug/kg	18.3	6.2	1	03/17/21 16:07	03/17/21 19:57	179601-23-1	
o-Xylene	ND	ug/kg	9.1	4.0	1	03/17/21 16:07	03/17/21 19:57	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	03/17/21 16:07	03/17/21 19:57	2037-26-5	
4-Bromofluorobenzene (S)	95	%	69-134		1	03/17/21 16:07	03/17/21 19:57	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1	03/17/21 16:07	03/17/21 19:57	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	22.5	%	0.10	0.10	1		03/17/21 14:12		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-21 (0.5-1.0) **Lab ID: 92528011013** Collected: 03/15/21 15:05 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: SW-846 Pace Analytical Services - Charlotte								
Percent Moisture	13.5	%	0.10	0.10	1		03/17/21 14:12		N2

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-21 (5.5-6.0) **Lab ID: 92528011014** Collected: 03/15/21 15:10 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: SW-846 Pace Analytical Services - Charlotte								
Percent Moisture	34.0	%	0.10	0.10	1		03/17/21 14:12		N2

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-22 (0.5-1.0) **Lab ID: 92528011015** Collected: 03/15/21 15:25 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: SW-846 Pace Analytical Services - Charlotte								
Percent Moisture	13.4	%	0.10	0.10	1		03/17/21 14:13		N2

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-22 (5.5-6.0) **Lab ID: 92528011016** Collected: 03/15/21 15:30 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: SW-846 Pace Analytical Services - Charlotte								
Percent Moisture	40.6	%	0.10	0.10	1		03/17/21 14:13		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (0.5-1.0) Lab ID: 92528011017 Collected: 03/15/21 15:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	385	135	1	03/24/21 11:18	03/24/21 16:03	83-32-9	
Acenaphthylene	ND	ug/kg	385	135	1	03/24/21 11:18	03/24/21 16:03	208-96-8	
Aniline	ND	ug/kg	385	151	1	03/24/21 11:18	03/24/21 16:03	62-53-3	
Anthracene	ND	ug/kg	385	126	1	03/24/21 11:18	03/24/21 16:03	120-12-7	
Benzo(a)anthracene	ND	ug/kg	385	128	1	03/24/21 11:18	03/24/21 16:03	56-55-3	
Benzo(a)pyrene	ND	ug/kg	385	133	1	03/24/21 11:18	03/24/21 16:03	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	385	128	1	03/24/21 11:18	03/24/21 16:03	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	385	149	1	03/24/21 11:18	03/24/21 16:03	191-24-2	v1
Benzo(k)fluoranthene	ND	ug/kg	385	135	1	03/24/21 11:18	03/24/21 16:03	207-08-9	
Benzoic Acid	ND	ug/kg	1930	828	1	03/24/21 11:18	03/24/21 16:03	65-85-0	
Benzyl alcohol	ND	ug/kg	771	292	1	03/24/21 11:18	03/24/21 16:03	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	385	148	1	03/24/21 11:18	03/24/21 16:03	101-55-3	
Butylbenzylphthalate	ND	ug/kg	385	162	1	03/24/21 11:18	03/24/21 16:03	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	771	271	1	03/24/21 11:18	03/24/21 16:03	59-50-7	
4-Chloroaniline	ND	ug/kg	771	302	1	03/24/21 11:18	03/24/21 16:03	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	385	160	1	03/24/21 11:18	03/24/21 16:03	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	385	145	1	03/24/21 11:18	03/24/21 16:03	111-44-4	M1
2-Chloronaphthalene	ND	ug/kg	385	153	1	03/24/21 11:18	03/24/21 16:03	91-58-7	
2-Chlorophenol	ND	ug/kg	385	145	1	03/24/21 11:18	03/24/21 16:03	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	385	144	1	03/24/21 11:18	03/24/21 16:03	7005-72-3	
Chrysene	ND	ug/kg	385	140	1	03/24/21 11:18	03/24/21 16:03	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	385	148	1	03/24/21 11:18	03/24/21 16:03	53-70-3	
Dibenzofuran	ND	ug/kg	385	139	1	03/24/21 11:18	03/24/21 16:03	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	771	260	1	03/24/21 11:18	03/24/21 16:03	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	385	151	1	03/24/21 11:18	03/24/21 16:03	120-83-2	
Diethylphthalate	ND	ug/kg	385	141	1	03/24/21 11:18	03/24/21 16:03	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	385	160	1	03/24/21 11:18	03/24/21 16:03	105-67-9	
Dimethylphthalate	ND	ug/kg	385	140	1	03/24/21 11:18	03/24/21 16:03	131-11-3	
Di-n-butylphthalate	ND	ug/kg	385	130	1	03/24/21 11:18	03/24/21 16:03	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	771	360	1	03/24/21 11:18	03/24/21 16:03	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1930	1190	1	03/24/21 11:18	03/24/21 16:03	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	385	148	1	03/24/21 11:18	03/24/21 16:03	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	385	141	1	03/24/21 11:18	03/24/21 16:03	606-20-2	
Di-n-octylphthalate	ND	ug/kg	385	152	1	03/24/21 11:18	03/24/21 16:03	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	385	149	1	03/24/21 11:18	03/24/21 16:03	117-81-7	
Fluoranthene	ND	ug/kg	385	132	1	03/24/21 11:18	03/24/21 16:03	206-44-0	
Fluorene	ND	ug/kg	385	135	1	03/24/21 11:18	03/24/21 16:03	86-73-7	
Hexachlorobenzene	ND	ug/kg	385	151	1	03/24/21 11:18	03/24/21 16:03	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	385	221	1	03/24/21 11:18	03/24/21 16:03	77-47-4	
Hexachloroethane	ND	ug/kg	385	147	1	03/24/21 11:18	03/24/21 16:03	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	385	152	1	03/24/21 11:18	03/24/21 16:03	193-39-5	
Isophorone	ND	ug/kg	385	172	1	03/24/21 11:18	03/24/21 16:03	78-59-1	
1-Methylnaphthalene	ND	ug/kg	385	135	1	03/24/21 11:18	03/24/21 16:03	90-12-0	
2-Methylnaphthalene	ND	ug/kg	385	154	1	03/24/21 11:18	03/24/21 16:03	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (0.5-1.0) Lab ID: 92528011017 Collected: 03/15/21 15:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	385	158	1	03/24/21 11:18	03/24/21 16:03	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	385	155	1	03/24/21 11:18	03/24/21 16:03	15831-10-4	
2-Nitroaniline	ND	ug/kg	1930	315	1	03/24/21 11:18	03/24/21 16:03	88-74-4	
3-Nitroaniline	ND	ug/kg	1930	302	1	03/24/21 11:18	03/24/21 16:03	99-09-2	
4-Nitroaniline	ND	ug/kg	771	293	1	03/24/21 11:18	03/24/21 16:03	100-01-6	
Nitrobenzene	ND	ug/kg	385	179	1	03/24/21 11:18	03/24/21 16:03	98-95-3	
2-Nitrophenol	ND	ug/kg	385	167	1	03/24/21 11:18	03/24/21 16:03	88-75-5	
4-Nitrophenol	ND	ug/kg	1930	745	1	03/24/21 11:18	03/24/21 16:03	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	385	130	1	03/24/21 11:18	03/24/21 16:03	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	385	145	1	03/24/21 11:18	03/24/21 16:03	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	385	137	1	03/24/21 11:18	03/24/21 16:03	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	385	183	1	03/24/21 11:18	03/24/21 16:03	108-60-1	
Pentachlorophenol	ND	ug/kg	771	377	1	03/24/21 11:18	03/24/21 16:03	87-86-5	
Phenanthrene	ND	ug/kg	385	126	1	03/24/21 11:18	03/24/21 16:03	85-01-8	
Phenol	ND	ug/kg	385	172	1	03/24/21 11:18	03/24/21 16:03	108-95-2	
Pyrene	ND	ug/kg	385	157	1	03/24/21 11:18	03/24/21 16:03	129-00-0	
Pyridine	ND	ug/kg	385	121	1	03/24/21 11:18	03/24/21 16:03	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	385	176	1	03/24/21 11:18	03/24/21 16:03	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	385	159	1	03/24/21 11:18	03/24/21 16:03	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	63	%	21-130		1	03/24/21 11:18	03/24/21 16:03	4165-60-0	
2-Fluorobiphenyl (S)	62	%	19-130		1	03/24/21 11:18	03/24/21 16:03	321-60-8	
Terphenyl-d14 (S)	90	%	15-130		1	03/24/21 11:18	03/24/21 16:03	1718-51-0	
Phenol-d6 (S)	55	%	18-130		1	03/24/21 11:18	03/24/21 16:03	13127-88-3	
2-Fluorophenol (S)	57	%	18-130		1	03/24/21 11:18	03/24/21 16:03	367-12-4	
2,4,6-Tribromophenol (S)	60	%	18-130		1	03/24/21 11:18	03/24/21 16:03	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	141	45.3	1	03/24/21 11:57	03/24/21 14:30	67-64-1	
Benzene	ND	ug/kg	7.1	2.8	1	03/24/21 11:57	03/24/21 14:30	71-43-2	
Bromobenzene	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 14:30	108-86-1	
Bromochloromethane	ND	ug/kg	7.1	2.1	1	03/24/21 11:57	03/24/21 14:30	74-97-5	
Bromodichloromethane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 14:30	75-27-4	
Bromoform	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	75-25-2	
Bromomethane	ND	ug/kg	14.1	11.2	1	03/24/21 11:57	03/24/21 14:30	74-83-9	
2-Butanone (MEK)	ND	ug/kg	141	33.9	1	03/24/21 11:57	03/24/21 14:30	78-93-3	
n-Butylbenzene	ND	ug/kg	7.1	3.3	1	03/24/21 11:57	03/24/21 14:30	104-51-8	
sec-Butylbenzene	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 14:30	135-98-8	
tert-Butylbenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	98-06-6	
Carbon tetrachloride	ND	ug/kg	7.1	2.6	1	03/24/21 11:57	03/24/21 14:30	56-23-5	
Chlorobenzene	ND	ug/kg	7.1	1.4	1	03/24/21 11:57	03/24/21 14:30	108-90-7	
Chloroethane	ND	ug/kg	14.1	5.4	1	03/24/21 11:57	03/24/21 14:30	75-00-3	
Chloroform	ND	ug/kg	7.1	4.3	1	03/24/21 11:57	03/24/21 14:30	67-66-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (0.5-1.0) **Lab ID: 92528011017** Collected: 03/15/21 15:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloromethane	ND	ug/kg	14.1	5.9	1	03/24/21 11:57	03/24/21 14:30	74-87-3	
2-Chlorotoluene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	95-49-8	
4-Chlorotoluene	ND	ug/kg	7.1	1.2	1	03/24/21 11:57	03/24/21 14:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 14:30	96-12-8	
Dibromochloromethane	ND	ug/kg	7.1	4.0	1	03/24/21 11:57	03/24/21 14:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 14:30	106-93-4	
Dibromomethane	ND	ug/kg	7.1	1.5	1	03/24/21 11:57	03/24/21 14:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 14:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	7.1	1.8	1	03/24/21 11:57	03/24/21 14:30	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	14.1	3.1	1	03/24/21 11:57	03/24/21 14:30	75-71-8	
1,1-Dichloroethane	ND	ug/kg	7.1	2.9	1	03/24/21 11:57	03/24/21 14:30	75-34-3	
1,2-Dichloroethane	ND	ug/kg	7.1	4.7	1	03/24/21 11:57	03/24/21 14:30	107-06-2	
1,1-Dichloroethene	ND	ug/kg	7.1	2.9	1	03/24/21 11:57	03/24/21 14:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 14:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	156-60-5	
1,2-Dichloropropane	ND	ug/kg	7.1	2.1	1	03/24/21 11:57	03/24/21 14:30	78-87-5	
1,3-Dichloropropane	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 14:30	142-28-9	
2,2-Dichloropropane	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 14:30	594-20-7	
1,1-Dichloropropene	ND	ug/kg	7.1	3.4	1	03/24/21 11:57	03/24/21 14:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 14:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 14:30	10061-02-6	
Diisopropyl ether	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 14:30	108-20-3	
Ethylbenzene	ND	ug/kg	7.1	3.3	1	03/24/21 11:57	03/24/21 14:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	14.1	11.5	1	03/24/21 11:57	03/24/21 14:30	87-68-3	
2-Hexanone	ND	ug/kg	70.6	6.8	1	03/24/21 11:57	03/24/21 14:30	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 14:30	98-82-8	
p-Isopropyltoluene	ND	ug/kg	7.1	3.5	1	03/24/21 11:57	03/24/21 14:30	99-87-6	
Methylene Chloride	ND	ug/kg	28.2	19.3	1	03/24/21 11:57	03/24/21 14:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	70.6	6.8	1	03/24/21 11:57	03/24/21 14:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	7.1	2.6	1	03/24/21 11:57	03/24/21 14:30	1634-04-4	
Naphthalene	ND	ug/kg	7.1	3.7	1	03/24/21 11:57	03/24/21 14:30	91-20-3	
n-Propylbenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 14:30	103-65-1	
Styrene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 14:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 14:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 14:30	79-34-5	
Tetrachloroethene	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 14:30	127-18-4	
Toluene	ND	ug/kg	7.1	2.0	1	03/24/21 11:57	03/24/21 14:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	7.1	5.7	1	03/24/21 11:57	03/24/21 14:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	7.1	5.9	1	03/24/21 11:57	03/24/21 14:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	7.1	3.7	1	03/24/21 11:57	03/24/21 14:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 14:30	79-00-5	
Trichloroethene	ND	ug/kg	7.1	1.8	1	03/24/21 11:57	03/24/21 14:30	79-01-6	
Trichlorofluoromethane	ND	ug/kg	7.1	3.9	1	03/24/21 11:57	03/24/21 14:30	75-69-4	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (0.5-1.0) **Lab ID: 92528011017** Collected: 03/15/21 15:35 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,2,3-Trichloropropane	ND	ug/kg	7.1	3.6	1	03/24/21 11:57	03/24/21 14:30	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 14:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 14:30	108-67-8	
Vinyl acetate	ND	ug/kg	70.6	5.1	1	03/24/21 11:57	03/24/21 14:30	108-05-4	
Vinyl chloride	ND	ug/kg	14.1	3.6	1	03/24/21 11:57	03/24/21 14:30	75-01-4	
Xylene (Total)	ND	ug/kg	14.1	4.0	1	03/24/21 11:57	03/24/21 14:30	1330-20-7	
m&p-Xylene	ND	ug/kg	14.1	4.8	1	03/24/21 11:57	03/24/21 14:30	179601-23-1	
o-Xylene	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 14:30	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/24/21 11:57	03/24/21 14:30	2037-26-5	
4-Bromofluorobenzene (S)	97	%	69-134		1	03/24/21 11:57	03/24/21 14:30	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1	03/24/21 11:57	03/24/21 14:30	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	14.7	%	0.10	0.10	1		03/17/21 14:13		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (5.5-6.0) **Lab ID: 92528011018** Collected: 03/15/21 15:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	416	146	1	03/24/21 11:18	03/24/21 16:58	83-32-9	
Acenaphthylene	ND	ug/kg	416	146	1	03/24/21 11:18	03/24/21 16:58	208-96-8	
Aniline	ND	ug/kg	416	163	1	03/24/21 11:18	03/24/21 16:58	62-53-3	
Anthracene	ND	ug/kg	416	136	1	03/24/21 11:18	03/24/21 16:58	120-12-7	
Benzo(a)anthracene	ND	ug/kg	416	139	1	03/24/21 11:18	03/24/21 16:58	56-55-3	
Benzo(a)pyrene	ND	ug/kg	416	144	1	03/24/21 11:18	03/24/21 16:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	416	139	1	03/24/21 11:18	03/24/21 16:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	416	161	1	03/24/21 11:18	03/24/21 16:58	191-24-2	v1
Benzo(k)fluoranthene	ND	ug/kg	416	146	1	03/24/21 11:18	03/24/21 16:58	207-08-9	
Benzoic Acid	ND	ug/kg	2080	894	1	03/24/21 11:18	03/24/21 16:58	65-85-0	
Benzyl alcohol	ND	ug/kg	832	315	1	03/24/21 11:18	03/24/21 16:58	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	416	160	1	03/24/21 11:18	03/24/21 16:58	101-55-3	
Butylbenzylphthalate	ND	ug/kg	416	175	1	03/24/21 11:18	03/24/21 16:58	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	832	293	1	03/24/21 11:18	03/24/21 16:58	59-50-7	
4-Chloroaniline	ND	ug/kg	832	327	1	03/24/21 11:18	03/24/21 16:58	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	416	173	1	03/24/21 11:18	03/24/21 16:58	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	416	156	1	03/24/21 11:18	03/24/21 16:58	111-44-4	
2-Chloronaphthalene	ND	ug/kg	416	165	1	03/24/21 11:18	03/24/21 16:58	91-58-7	
2-Chlorophenol	ND	ug/kg	416	156	1	03/24/21 11:18	03/24/21 16:58	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	416	155	1	03/24/21 11:18	03/24/21 16:58	7005-72-3	
Chrysene	ND	ug/kg	416	151	1	03/24/21 11:18	03/24/21 16:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	416	160	1	03/24/21 11:18	03/24/21 16:58	53-70-3	
Dibenzofuran	ND	ug/kg	416	150	1	03/24/21 11:18	03/24/21 16:58	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	832	281	1	03/24/21 11:18	03/24/21 16:58	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	416	163	1	03/24/21 11:18	03/24/21 16:58	120-83-2	
Diethylphthalate	ND	ug/kg	416	153	1	03/24/21 11:18	03/24/21 16:58	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	416	173	1	03/24/21 11:18	03/24/21 16:58	105-67-9	
Dimethylphthalate	ND	ug/kg	416	151	1	03/24/21 11:18	03/24/21 16:58	131-11-3	
Di-n-butylphthalate	ND	ug/kg	416	140	1	03/24/21 11:18	03/24/21 16:58	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	832	388	1	03/24/21 11:18	03/24/21 16:58	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2080	1290	1	03/24/21 11:18	03/24/21 16:58	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	416	160	1	03/24/21 11:18	03/24/21 16:58	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	416	153	1	03/24/21 11:18	03/24/21 16:58	606-20-2	
Di-n-octylphthalate	ND	ug/kg	416	164	1	03/24/21 11:18	03/24/21 16:58	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	416	161	1	03/24/21 11:18	03/24/21 16:58	117-81-7	
Fluoranthene	ND	ug/kg	416	143	1	03/24/21 11:18	03/24/21 16:58	206-44-0	
Fluorene	ND	ug/kg	416	146	1	03/24/21 11:18	03/24/21 16:58	86-73-7	
Hexachlorobenzene	ND	ug/kg	416	163	1	03/24/21 11:18	03/24/21 16:58	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	416	238	1	03/24/21 11:18	03/24/21 16:58	77-47-4	
Hexachloroethane	ND	ug/kg	416	159	1	03/24/21 11:18	03/24/21 16:58	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	416	164	1	03/24/21 11:18	03/24/21 16:58	193-39-5	
Isophorone	ND	ug/kg	416	185	1	03/24/21 11:18	03/24/21 16:58	78-59-1	
1-Methylnaphthalene	ND	ug/kg	416	146	1	03/24/21 11:18	03/24/21 16:58	90-12-0	
2-Methylnaphthalene	ND	ug/kg	416	166	1	03/24/21 11:18	03/24/21 16:58	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (5.5-6.0) Lab ID: 92528011018 Collected: 03/15/21 15:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	416	170	1	03/24/21 11:18	03/24/21 16:58	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	416	168	1	03/24/21 11:18	03/24/21 16:58	15831-10-4	
2-Nitroaniline	ND	ug/kg	2080	341	1	03/24/21 11:18	03/24/21 16:58	88-74-4	
3-Nitroaniline	ND	ug/kg	2080	327	1	03/24/21 11:18	03/24/21 16:58	99-09-2	
4-Nitroaniline	ND	ug/kg	832	317	1	03/24/21 11:18	03/24/21 16:58	100-01-6	
Nitrobenzene	ND	ug/kg	416	193	1	03/24/21 11:18	03/24/21 16:58	98-95-3	
2-Nitrophenol	ND	ug/kg	416	180	1	03/24/21 11:18	03/24/21 16:58	88-75-5	
4-Nitrophenol	ND	ug/kg	2080	805	1	03/24/21 11:18	03/24/21 16:58	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	416	140	1	03/24/21 11:18	03/24/21 16:58	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	416	156	1	03/24/21 11:18	03/24/21 16:58	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	416	148	1	03/24/21 11:18	03/24/21 16:58	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	416	198	1	03/24/21 11:18	03/24/21 16:58	108-60-1	
Pentachlorophenol	ND	ug/kg	832	407	1	03/24/21 11:18	03/24/21 16:58	87-86-5	
Phenanthrene	ND	ug/kg	416	136	1	03/24/21 11:18	03/24/21 16:58	85-01-8	
Phenol	ND	ug/kg	416	185	1	03/24/21 11:18	03/24/21 16:58	108-95-2	
Pyrene	ND	ug/kg	416	169	1	03/24/21 11:18	03/24/21 16:58	129-00-0	
Pyridine	ND	ug/kg	416	131	1	03/24/21 11:18	03/24/21 16:58	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	416	190	1	03/24/21 11:18	03/24/21 16:58	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	416	172	1	03/24/21 11:18	03/24/21 16:58	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	75	%	21-130		1	03/24/21 11:18	03/24/21 16:58	4165-60-0	
2-Fluorobiphenyl (S)	41	%	19-130		1	03/24/21 11:18	03/24/21 16:58	321-60-8	
Terphenyl-d14 (S)	43	%	15-130		1	03/24/21 11:18	03/24/21 16:58	1718-51-0	
Phenol-d6 (S)	65	%	18-130		1	03/24/21 11:18	03/24/21 16:58	13127-88-3	
2-Fluorophenol (S)	69	%	18-130		1	03/24/21 11:18	03/24/21 16:58	367-12-4	
2,4,6-Tribromophenol (S)	68	%	18-130		1	03/24/21 11:18	03/24/21 16:58	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	176	56.6	1	03/24/21 11:57	03/24/21 15:06	67-64-1	
Benzene	ND	ug/kg	8.8	3.5	1	03/24/21 11:57	03/24/21 15:06	71-43-2	
Bromobenzene	ND	ug/kg	8.8	2.9	1	03/24/21 11:57	03/24/21 15:06	108-86-1	
Bromochloromethane	ND	ug/kg	8.8	2.6	1	03/24/21 11:57	03/24/21 15:06	74-97-5	
Bromodichloromethane	ND	ug/kg	8.8	3.4	1	03/24/21 11:57	03/24/21 15:06	75-27-4	
Bromoform	ND	ug/kg	8.8	3.1	1	03/24/21 11:57	03/24/21 15:06	75-25-2	
Bromomethane	ND	ug/kg	17.6	13.9	1	03/24/21 11:57	03/24/21 15:06	74-83-9	
2-Butanone (MEK)	ND	ug/kg	176	42.3	1	03/24/21 11:57	03/24/21 15:06	78-93-3	
n-Butylbenzene	ND	ug/kg	8.8	4.2	1	03/24/21 11:57	03/24/21 15:06	104-51-8	
sec-Butylbenzene	ND	ug/kg	8.8	3.9	1	03/24/21 11:57	03/24/21 15:06	135-98-8	
tert-Butylbenzene	ND	ug/kg	8.8	3.1	1	03/24/21 11:57	03/24/21 15:06	98-06-6	
Carbon tetrachloride	ND	ug/kg	8.8	3.3	1	03/24/21 11:57	03/24/21 15:06	56-23-5	
Chlorobenzene	ND	ug/kg	8.8	1.7	1	03/24/21 11:57	03/24/21 15:06	108-90-7	
Chloroethane	ND	ug/kg	17.6	6.8	1	03/24/21 11:57	03/24/21 15:06	75-00-3	
Chloroform	ND	ug/kg	8.8	5.4	1	03/24/21 11:57	03/24/21 15:06	67-66-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (5.5-6.0) **Lab ID: 92528011018** Collected: 03/15/21 15:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloromethane	ND	ug/kg	17.6	7.4	1	03/24/21 11:57	03/24/21 15:06	74-87-3	
2-Chlorotoluene	ND	ug/kg	8.8	3.1	1	03/24/21 11:57	03/24/21 15:06	95-49-8	
4-Chlorotoluene	ND	ug/kg	8.8	1.6	1	03/24/21 11:57	03/24/21 15:06	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	8.8	3.4	1	03/24/21 11:57	03/24/21 15:06	96-12-8	
Dibromochloromethane	ND	ug/kg	8.8	5.0	1	03/24/21 11:57	03/24/21 15:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	8.8	3.9	1	03/24/21 11:57	03/24/21 15:06	106-93-4	M1
Dibromomethane	ND	ug/kg	8.8	1.9	1	03/24/21 11:57	03/24/21 15:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	8.8	3.2	1	03/24/21 11:57	03/24/21 15:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	8.8	2.7	1	03/24/21 11:57	03/24/21 15:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	8.8	2.3	1	03/24/21 11:57	03/24/21 15:06	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	17.6	3.8	1	03/24/21 11:57	03/24/21 15:06	75-71-8	
1,1-Dichloroethane	ND	ug/kg	8.8	3.6	1	03/24/21 11:57	03/24/21 15:06	75-34-3	
1,2-Dichloroethane	ND	ug/kg	8.8	5.8	1	03/24/21 11:57	03/24/21 15:06	107-06-2	
1,1-Dichloroethene	ND	ug/kg	8.8	3.6	1	03/24/21 11:57	03/24/21 15:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	8.8	3.0	1	03/24/21 11:57	03/24/21 15:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	8.8	3.1	1	03/24/21 11:57	03/24/21 15:06	156-60-5	
1,2-Dichloropropane	ND	ug/kg	8.8	2.6	1	03/24/21 11:57	03/24/21 15:06	78-87-5	
1,3-Dichloropropane	ND	ug/kg	8.8	2.7	1	03/24/21 11:57	03/24/21 15:06	142-28-9	
2,2-Dichloropropane	ND	ug/kg	8.8	2.9	1	03/24/21 11:57	03/24/21 15:06	594-20-7	
1,1-Dichloropropene	ND	ug/kg	8.8	4.2	1	03/24/21 11:57	03/24/21 15:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	8.8	2.4	1	03/24/21 11:57	03/24/21 15:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	8.8	3.0	1	03/24/21 11:57	03/24/21 15:06	10061-02-6	
Diisopropyl ether	ND	ug/kg	8.8	2.4	1	03/24/21 11:57	03/24/21 15:06	108-20-3	
Ethylbenzene	5.4J	ug/kg	8.8	4.1	1	03/24/21 11:57	03/24/21 15:06	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	17.6	14.4	1	03/24/21 11:57	03/24/21 15:06	87-68-3	
2-Hexanone	ND	ug/kg	88.1	8.5	1	03/24/21 11:57	03/24/21 15:06	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	8.8	3.0	1	03/24/21 11:57	03/24/21 15:06	98-82-8	
p-Isopropyltoluene	ND	ug/kg	8.8	4.3	1	03/24/21 11:57	03/24/21 15:06	99-87-6	
Methylene Chloride	ND	ug/kg	35.2	24.1	1	03/24/21 11:57	03/24/21 15:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	88.1	8.5	1	03/24/21 11:57	03/24/21 15:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	8.8	3.3	1	03/24/21 11:57	03/24/21 15:06	1634-04-4	
Naphthalene	21.0	ug/kg	8.8	4.6	1	03/24/21 11:57	03/24/21 15:06	91-20-3	
n-Propylbenzene	ND	ug/kg	8.8	3.1	1	03/24/21 11:57	03/24/21 15:06	103-65-1	
Styrene	ND	ug/kg	8.8	2.3	1	03/24/21 11:57	03/24/21 15:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	8.8	3.4	1	03/24/21 11:57	03/24/21 15:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	8.8	2.3	1	03/24/21 11:57	03/24/21 15:06	79-34-5	
Tetrachloroethene	ND	ug/kg	8.8	2.8	1	03/24/21 11:57	03/24/21 15:06	127-18-4	
Toluene	8.1J	ug/kg	8.8	2.5	1	03/24/21 11:57	03/24/21 15:06	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	8.8	7.1	1	03/24/21 11:57	03/24/21 15:06	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	8.8	7.4	1	03/24/21 11:57	03/24/21 15:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	8.8	4.6	1	03/24/21 11:57	03/24/21 15:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	8.8	2.9	1	03/24/21 11:57	03/24/21 15:06	79-00-5	
Trichloroethene	ND	ug/kg	8.8	2.3	1	03/24/21 11:57	03/24/21 15:06	79-01-6	
Trichlorofluoromethane	ND	ug/kg	8.8	4.8	1	03/24/21 11:57	03/24/21 15:06	75-69-4	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-23 (5.5-6.0) **Lab ID: 92528011018** Collected: 03/15/21 15:40 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,2,3-Trichloropropane	ND	ug/kg	8.8	4.5	1	03/24/21 11:57	03/24/21 15:06	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	8.8	2.4	1	03/24/21 11:57	03/24/21 15:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	8.8	3.0	1	03/24/21 11:57	03/24/21 15:06	108-67-8	
Vinyl acetate	ND	ug/kg	88.1	6.4	1	03/24/21 11:57	03/24/21 15:06	108-05-4	
Vinyl chloride	ND	ug/kg	17.6	4.5	1	03/24/21 11:57	03/24/21 15:06	75-01-4	
Xylene (Total)	ND	ug/kg	17.6	5.0	1	03/24/21 11:57	03/24/21 15:06	1330-20-7	
m&p-Xylene	ND	ug/kg	17.6	6.0	1	03/24/21 11:57	03/24/21 15:06	179601-23-1	
o-Xylene	ND	ug/kg	8.8	3.9	1	03/24/21 11:57	03/24/21 15:06	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/24/21 11:57	03/24/21 15:06	2037-26-5	
4-Bromofluorobenzene (S)	98	%	69-134		1	03/24/21 11:57	03/24/21 15:06	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1	03/24/21 11:57	03/24/21 15:06	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	20.4	%	0.10	0.10	1		03/17/21 14:13		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (0.5-1.0) **Lab ID: 92528011019** Collected: 03/15/21 15:55 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	388	137	1	03/24/21 11:18	03/24/21 17:54	83-32-9	
Acenaphthylene	ND	ug/kg	388	137	1	03/24/21 11:18	03/24/21 17:54	208-96-8	
Aniline	ND	ug/kg	388	152	1	03/24/21 11:18	03/24/21 17:54	62-53-3	
Anthracene	ND	ug/kg	388	127	1	03/24/21 11:18	03/24/21 17:54	120-12-7	
Benzo(a)anthracene	ND	ug/kg	388	129	1	03/24/21 11:18	03/24/21 17:54	56-55-3	
Benzo(a)pyrene	ND	ug/kg	388	134	1	03/24/21 11:18	03/24/21 17:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	388	129	1	03/24/21 11:18	03/24/21 17:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	388	151	1	03/24/21 11:18	03/24/21 17:54	191-24-2	v1
Benzo(k)fluoranthene	ND	ug/kg	388	137	1	03/24/21 11:18	03/24/21 17:54	207-08-9	
Benzoic Acid	ND	ug/kg	1940	834	1	03/24/21 11:18	03/24/21 17:54	65-85-0	
Benzyl alcohol	ND	ug/kg	777	294	1	03/24/21 11:18	03/24/21 17:54	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	388	149	1	03/24/21 11:18	03/24/21 17:54	101-55-3	
Butylbenzylphthalate	ND	ug/kg	388	164	1	03/24/21 11:18	03/24/21 17:54	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	777	273	1	03/24/21 11:18	03/24/21 17:54	59-50-7	
4-Chloroaniline	ND	ug/kg	777	305	1	03/24/21 11:18	03/24/21 17:54	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	388	161	1	03/24/21 11:18	03/24/21 17:54	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	388	146	1	03/24/21 11:18	03/24/21 17:54	111-44-4	
2-Chloronaphthalene	ND	ug/kg	388	154	1	03/24/21 11:18	03/24/21 17:54	91-58-7	
2-Chlorophenol	ND	ug/kg	388	146	1	03/24/21 11:18	03/24/21 17:54	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	388	145	1	03/24/21 11:18	03/24/21 17:54	7005-72-3	
Chrysene	ND	ug/kg	388	141	1	03/24/21 11:18	03/24/21 17:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	388	149	1	03/24/21 11:18	03/24/21 17:54	53-70-3	
Dibenzofuran	ND	ug/kg	388	140	1	03/24/21 11:18	03/24/21 17:54	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	777	262	1	03/24/21 11:18	03/24/21 17:54	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	388	152	1	03/24/21 11:18	03/24/21 17:54	120-83-2	
Diethylphthalate	ND	ug/kg	388	142	1	03/24/21 11:18	03/24/21 17:54	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	388	161	1	03/24/21 11:18	03/24/21 17:54	105-67-9	
Dimethylphthalate	ND	ug/kg	388	141	1	03/24/21 11:18	03/24/21 17:54	131-11-3	
Di-n-butylphthalate	ND	ug/kg	388	131	1	03/24/21 11:18	03/24/21 17:54	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	777	362	1	03/24/21 11:18	03/24/21 17:54	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1940	1200	1	03/24/21 11:18	03/24/21 17:54	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	388	149	1	03/24/21 11:18	03/24/21 17:54	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	388	142	1	03/24/21 11:18	03/24/21 17:54	606-20-2	
Di-n-octylphthalate	ND	ug/kg	388	153	1	03/24/21 11:18	03/24/21 17:54	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	388	151	1	03/24/21 11:18	03/24/21 17:54	117-81-7	
Fluoranthene	ND	ug/kg	388	133	1	03/24/21 11:18	03/24/21 17:54	206-44-0	
Fluorene	ND	ug/kg	388	137	1	03/24/21 11:18	03/24/21 17:54	86-73-7	
Hexachlorobenzene	ND	ug/kg	388	152	1	03/24/21 11:18	03/24/21 17:54	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	388	222	1	03/24/21 11:18	03/24/21 17:54	77-47-4	
Hexachloroethane	ND	ug/kg	388	148	1	03/24/21 11:18	03/24/21 17:54	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	388	153	1	03/24/21 11:18	03/24/21 17:54	193-39-5	
Isophorone	ND	ug/kg	388	173	1	03/24/21 11:18	03/24/21 17:54	78-59-1	
1-Methylnaphthalene	ND	ug/kg	388	137	1	03/24/21 11:18	03/24/21 17:54	90-12-0	
2-Methylnaphthalene	ND	ug/kg	388	155	1	03/24/21 11:18	03/24/21 17:54	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (0.5-1.0) Lab ID: 92528011019 Collected: 03/15/21 15:55 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	388	159	1	03/24/21 11:18	03/24/21 17:54	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	388	157	1	03/24/21 11:18	03/24/21 17:54	15831-10-4	
2-Nitroaniline	ND	ug/kg	1940	318	1	03/24/21 11:18	03/24/21 17:54	88-74-4	
3-Nitroaniline	ND	ug/kg	1940	305	1	03/24/21 11:18	03/24/21 17:54	99-09-2	
4-Nitroaniline	ND	ug/kg	777	295	1	03/24/21 11:18	03/24/21 17:54	100-01-6	
Nitrobenzene	ND	ug/kg	388	180	1	03/24/21 11:18	03/24/21 17:54	98-95-3	
2-Nitrophenol	ND	ug/kg	388	168	1	03/24/21 11:18	03/24/21 17:54	88-75-5	
4-Nitrophenol	ND	ug/kg	1940	751	1	03/24/21 11:18	03/24/21 17:54	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	388	131	1	03/24/21 11:18	03/24/21 17:54	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	388	146	1	03/24/21 11:18	03/24/21 17:54	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	388	138	1	03/24/21 11:18	03/24/21 17:54	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	388	185	1	03/24/21 11:18	03/24/21 17:54	108-60-1	
Pentachlorophenol	ND	ug/kg	777	380	1	03/24/21 11:18	03/24/21 17:54	87-86-5	
Phenanthrene	ND	ug/kg	388	127	1	03/24/21 11:18	03/24/21 17:54	85-01-8	
Phenol	ND	ug/kg	388	173	1	03/24/21 11:18	03/24/21 17:54	108-95-2	
Pyrene	ND	ug/kg	388	158	1	03/24/21 11:18	03/24/21 17:54	129-00-0	
Pyridine	ND	ug/kg	388	122	1	03/24/21 11:18	03/24/21 17:54	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	388	178	1	03/24/21 11:18	03/24/21 17:54	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	388	160	1	03/24/21 11:18	03/24/21 17:54	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	69	%	21-130		1	03/24/21 11:18	03/24/21 17:54	4165-60-0	
2-Fluorobiphenyl (S)	66	%	19-130		1	03/24/21 11:18	03/24/21 17:54	321-60-8	
Terphenyl-d14 (S)	93	%	15-130		1	03/24/21 11:18	03/24/21 17:54	1718-51-0	
Phenol-d6 (S)	62	%	18-130		1	03/24/21 11:18	03/24/21 17:54	13127-88-3	
2-Fluorophenol (S)	60	%	18-130		1	03/24/21 11:18	03/24/21 17:54	367-12-4	
2,4,6-Tribromophenol (S)	61	%	18-130		1	03/24/21 11:18	03/24/21 17:54	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	141	45.3	1	03/24/21 11:57	03/24/21 15:24	67-64-1	
Benzene	ND	ug/kg	7.1	2.8	1	03/24/21 11:57	03/24/21 15:24	71-43-2	
Bromobenzene	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 15:24	108-86-1	
Bromochloromethane	ND	ug/kg	7.1	2.1	1	03/24/21 11:57	03/24/21 15:24	74-97-5	
Bromodichloromethane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 15:24	75-27-4	
Bromoform	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	75-25-2	
Bromomethane	ND	ug/kg	14.1	11.1	1	03/24/21 11:57	03/24/21 15:24	74-83-9	
2-Butanone (MEK)	ND	ug/kg	141	33.8	1	03/24/21 11:57	03/24/21 15:24	78-93-3	
n-Butylbenzene	ND	ug/kg	7.1	3.3	1	03/24/21 11:57	03/24/21 15:24	104-51-8	
sec-Butylbenzene	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 15:24	135-98-8	
tert-Butylbenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	98-06-6	
Carbon tetrachloride	ND	ug/kg	7.1	2.6	1	03/24/21 11:57	03/24/21 15:24	56-23-5	
Chlorobenzene	ND	ug/kg	7.1	1.4	1	03/24/21 11:57	03/24/21 15:24	108-90-7	
Chloroethane	ND	ug/kg	14.1	5.4	1	03/24/21 11:57	03/24/21 15:24	75-00-3	
Chloroform	ND	ug/kg	7.1	4.3	1	03/24/21 11:57	03/24/21 15:24	67-66-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (0.5-1.0) **Lab ID: 92528011019** Collected: 03/15/21 15:55 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloromethane	ND	ug/kg	14.1	5.9	1	03/24/21 11:57	03/24/21 15:24	74-87-3	
2-Chlorotoluene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	95-49-8	
4-Chlorotoluene	ND	ug/kg	7.1	1.2	1	03/24/21 11:57	03/24/21 15:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 15:24	96-12-8	
Dibromochloromethane	ND	ug/kg	7.1	4.0	1	03/24/21 11:57	03/24/21 15:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 15:24	106-93-4	
Dibromomethane	ND	ug/kg	7.1	1.5	1	03/24/21 11:57	03/24/21 15:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 15:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	7.1	1.8	1	03/24/21 11:57	03/24/21 15:24	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	14.1	3.1	1	03/24/21 11:57	03/24/21 15:24	75-71-8	
1,1-Dichloroethane	ND	ug/kg	7.1	2.9	1	03/24/21 11:57	03/24/21 15:24	75-34-3	
1,2-Dichloroethane	ND	ug/kg	7.1	4.7	1	03/24/21 11:57	03/24/21 15:24	107-06-2	
1,1-Dichloroethene	ND	ug/kg	7.1	2.9	1	03/24/21 11:57	03/24/21 15:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 15:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	156-60-5	
1,2-Dichloropropane	ND	ug/kg	7.1	2.1	1	03/24/21 11:57	03/24/21 15:24	78-87-5	
1,3-Dichloropropane	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 15:24	142-28-9	
2,2-Dichloropropane	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 15:24	594-20-7	
1,1-Dichloropropene	ND	ug/kg	7.1	3.4	1	03/24/21 11:57	03/24/21 15:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 15:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 15:24	10061-02-6	
Diisopropyl ether	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 15:24	108-20-3	
Ethylbenzene	ND	ug/kg	7.1	3.3	1	03/24/21 11:57	03/24/21 15:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	14.1	11.5	1	03/24/21 11:57	03/24/21 15:24	87-68-3	
2-Hexanone	ND	ug/kg	70.5	6.8	1	03/24/21 11:57	03/24/21 15:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 15:24	98-82-8	
p-Isopropyltoluene	ND	ug/kg	7.1	3.5	1	03/24/21 11:57	03/24/21 15:24	99-87-6	
Methylene Chloride	ND	ug/kg	28.2	19.3	1	03/24/21 11:57	03/24/21 15:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	70.5	6.8	1	03/24/21 11:57	03/24/21 15:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	7.1	2.6	1	03/24/21 11:57	03/24/21 15:24	1634-04-4	
Naphthalene	7.7	ug/kg	7.1	3.7	1	03/24/21 11:57	03/24/21 15:24	91-20-3	
n-Propylbenzene	ND	ug/kg	7.1	2.5	1	03/24/21 11:57	03/24/21 15:24	103-65-1	
Styrene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 15:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	7.1	2.7	1	03/24/21 11:57	03/24/21 15:24	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 15:24	79-34-5	
Tetrachloroethene	ND	ug/kg	7.1	2.2	1	03/24/21 11:57	03/24/21 15:24	127-18-4	
Toluene	4.6J	ug/kg	7.1	2.0	1	03/24/21 11:57	03/24/21 15:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	7.1	5.7	1	03/24/21 11:57	03/24/21 15:24	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	7.1	5.9	1	03/24/21 11:57	03/24/21 15:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	7.1	3.7	1	03/24/21 11:57	03/24/21 15:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	7.1	2.3	1	03/24/21 11:57	03/24/21 15:24	79-00-5	
Trichloroethene	ND	ug/kg	7.1	1.8	1	03/24/21 11:57	03/24/21 15:24	79-01-6	
Trichlorofluoromethane	ND	ug/kg	7.1	3.9	1	03/24/21 11:57	03/24/21 15:24	75-69-4	

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-24 (0.5-1.0) **Lab ID: 92528011019** Collected: 03/15/21 15:55 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,2,3-Trichloropropane	ND	ug/kg	7.1	3.6	1	03/24/21 11:57	03/24/21 15:24	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	7.1	1.9	1	03/24/21 11:57	03/24/21 15:24	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	7.1	2.4	1	03/24/21 11:57	03/24/21 15:24	108-67-8	
Vinyl acetate	ND	ug/kg	70.5	5.1	1	03/24/21 11:57	03/24/21 15:24	108-05-4	
Vinyl chloride	ND	ug/kg	14.1	3.6	1	03/24/21 11:57	03/24/21 15:24	75-01-4	
Xylene (Total)	ND	ug/kg	14.1	4.0	1	03/24/21 11:57	03/24/21 15:24	1330-20-7	
m&p-Xylene	ND	ug/kg	14.1	4.8	1	03/24/21 11:57	03/24/21 15:24	179601-23-1	
o-Xylene	ND	ug/kg	7.1	3.1	1	03/24/21 11:57	03/24/21 15:24	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/24/21 11:57	03/24/21 15:24	2037-26-5	
4-Bromofluorobenzene (S)	96	%	69-134		1	03/24/21 11:57	03/24/21 15:24	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1	03/24/21 11:57	03/24/21 15:24	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	14.7	%	0.10	0.10	1		03/17/21 14:13		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Sample: RI-SB-24 (5.5-6.0) Lab ID: 92528011020 Collected: 03/15/21 16:00 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	492	173	1	03/24/21 11:18	03/24/21 18:22	83-32-9	
Acenaphthylene	194J	ug/kg	492	173	1	03/24/21 11:18	03/24/21 18:22	208-96-8	
Aniline	ND	ug/kg	492	192	1	03/24/21 11:18	03/24/21 18:22	62-53-3	
Anthracene	ND	ug/kg	492	161	1	03/24/21 11:18	03/24/21 18:22	120-12-7	
Benzo(a)anthracene	172J	ug/kg	492	164	1	03/24/21 11:18	03/24/21 18:22	56-55-3	
Benzo(a)pyrene	184J	ug/kg	492	170	1	03/24/21 11:18	03/24/21 18:22	50-32-8	
Benzo(b)fluoranthene	306J	ug/kg	492	164	1	03/24/21 11:18	03/24/21 18:22	205-99-2	
Benzo(g,h,i)perylene	224J	ug/kg	492	191	1	03/24/21 11:18	03/24/21 18:22	191-24-2	v1
Benzo(k)fluoranthene	ND	ug/kg	492	173	1	03/24/21 11:18	03/24/21 18:22	207-08-9	
Benzoic Acid	ND	ug/kg	2460	1060	1	03/24/21 11:18	03/24/21 18:22	65-85-0	
Benzyl alcohol	ND	ug/kg	984	373	1	03/24/21 11:18	03/24/21 18:22	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	492	189	1	03/24/21 11:18	03/24/21 18:22	101-55-3	
Butylbenzylphthalate	ND	ug/kg	492	207	1	03/24/21 11:18	03/24/21 18:22	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	984	346	1	03/24/21 11:18	03/24/21 18:22	59-50-7	
4-Chloroaniline	ND	ug/kg	984	386	1	03/24/21 11:18	03/24/21 18:22	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	492	204	1	03/24/21 11:18	03/24/21 18:22	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	492	185	1	03/24/21 11:18	03/24/21 18:22	111-44-4	
2-Chloronaphthalene	ND	ug/kg	492	195	1	03/24/21 11:18	03/24/21 18:22	91-58-7	
2-Chlorophenol	ND	ug/kg	492	185	1	03/24/21 11:18	03/24/21 18:22	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	492	183	1	03/24/21 11:18	03/24/21 18:22	7005-72-3	
Chrysene	199J	ug/kg	492	179	1	03/24/21 11:18	03/24/21 18:22	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	492	189	1	03/24/21 11:18	03/24/21 18:22	53-70-3	
Dibenzofuran	ND	ug/kg	492	177	1	03/24/21 11:18	03/24/21 18:22	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	984	332	1	03/24/21 11:18	03/24/21 18:22	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	492	192	1	03/24/21 11:18	03/24/21 18:22	120-83-2	
Diethylphthalate	ND	ug/kg	492	180	1	03/24/21 11:18	03/24/21 18:22	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	492	204	1	03/24/21 11:18	03/24/21 18:22	105-67-9	
Dimethylphthalate	ND	ug/kg	492	179	1	03/24/21 11:18	03/24/21 18:22	131-11-3	
Di-n-butylphthalate	ND	ug/kg	492	165	1	03/24/21 11:18	03/24/21 18:22	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	984	459	1	03/24/21 11:18	03/24/21 18:22	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2460	1520	1	03/24/21 11:18	03/24/21 18:22	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	492	189	1	03/24/21 11:18	03/24/21 18:22	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	492	180	1	03/24/21 11:18	03/24/21 18:22	606-20-2	
Di-n-octylphthalate	ND	ug/kg	492	194	1	03/24/21 11:18	03/24/21 18:22	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	492	191	1	03/24/21 11:18	03/24/21 18:22	117-81-7	
Fluoranthene	267J	ug/kg	492	168	1	03/24/21 11:18	03/24/21 18:22	206-44-0	
Fluorene	ND	ug/kg	492	173	1	03/24/21 11:18	03/24/21 18:22	86-73-7	
Hexachlorobenzene	ND	ug/kg	492	192	1	03/24/21 11:18	03/24/21 18:22	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	492	282	1	03/24/21 11:18	03/24/21 18:22	77-47-4	
Hexachloroethane	ND	ug/kg	492	188	1	03/24/21 11:18	03/24/21 18:22	67-72-1	
Indeno(1,2,3-cd)pyrene	209J	ug/kg	492	194	1	03/24/21 11:18	03/24/21 18:22	193-39-5	
Isophorone	ND	ug/kg	492	219	1	03/24/21 11:18	03/24/21 18:22	78-59-1	
1-Methylnaphthalene	ND	ug/kg	492	173	1	03/24/21 11:18	03/24/21 18:22	90-12-0	
2-Methylnaphthalene	ND	ug/kg	492	197	1	03/24/21 11:18	03/24/21 18:22	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (5.5-6.0) Lab ID: 92528011020 Collected: 03/15/21 16:00 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	492	201	1	03/24/21 11:18	03/24/21 18:22	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	492	198	1	03/24/21 11:18	03/24/21 18:22	15831-10-4	
2-Nitroaniline	ND	ug/kg	2460	402	1	03/24/21 11:18	03/24/21 18:22	88-74-4	
3-Nitroaniline	ND	ug/kg	2460	386	1	03/24/21 11:18	03/24/21 18:22	99-09-2	
4-Nitroaniline	ND	ug/kg	984	374	1	03/24/21 11:18	03/24/21 18:22	100-01-6	
Nitrobenzene	ND	ug/kg	492	228	1	03/24/21 11:18	03/24/21 18:22	98-95-3	
2-Nitrophenol	ND	ug/kg	492	213	1	03/24/21 11:18	03/24/21 18:22	88-75-5	
4-Nitrophenol	ND	ug/kg	2460	951	1	03/24/21 11:18	03/24/21 18:22	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	492	165	1	03/24/21 11:18	03/24/21 18:22	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	492	185	1	03/24/21 11:18	03/24/21 18:22	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	492	174	1	03/24/21 11:18	03/24/21 18:22	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	492	234	1	03/24/21 11:18	03/24/21 18:22	108-60-1	
Pentachlorophenol	ND	ug/kg	984	481	1	03/24/21 11:18	03/24/21 18:22	87-86-5	
Phenanthrene	ND	ug/kg	492	161	1	03/24/21 11:18	03/24/21 18:22	85-01-8	
Phenol	ND	ug/kg	492	219	1	03/24/21 11:18	03/24/21 18:22	108-95-2	
Pyrene	261J	ug/kg	492	200	1	03/24/21 11:18	03/24/21 18:22	129-00-0	
Pyridine	ND	ug/kg	492	155	1	03/24/21 11:18	03/24/21 18:22	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	492	225	1	03/24/21 11:18	03/24/21 18:22	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	492	203	1	03/24/21 11:18	03/24/21 18:22	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	56	%	21-130		1	03/24/21 11:18	03/24/21 18:22	4165-60-0	
2-Fluorobiphenyl (S)	44	%	19-130		1	03/24/21 11:18	03/24/21 18:22	321-60-8	
Terphenyl-d14 (S)	75	%	15-130		1	03/24/21 11:18	03/24/21 18:22	1718-51-0	
Phenol-d6 (S)	53	%	18-130		1	03/24/21 11:18	03/24/21 18:22	13127-88-3	
2-Fluorophenol (S)	55	%	18-130		1	03/24/21 11:18	03/24/21 18:22	367-12-4	
2,4,6-Tribromophenol (S)	65	%	18-130		1	03/24/21 11:18	03/24/21 18:22	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	273	ug/kg	222	71.2	1	03/24/21 11:57	03/24/21 15:42	67-64-1	
Benzene	5.7J	ug/kg	11.1	4.4	1	03/24/21 11:57	03/24/21 15:42	71-43-2	
Bromobenzene	ND	ug/kg	11.1	3.6	1	03/24/21 11:57	03/24/21 15:42	108-86-1	
Bromochloromethane	ND	ug/kg	11.1	3.3	1	03/24/21 11:57	03/24/21 15:42	74-97-5	
Bromodichloromethane	ND	ug/kg	11.1	4.3	1	03/24/21 11:57	03/24/21 15:42	75-27-4	
Bromoform	ND	ug/kg	11.1	3.9	1	03/24/21 11:57	03/24/21 15:42	75-25-2	
Bromomethane	ND	ug/kg	22.2	17.5	1	03/24/21 11:57	03/24/21 15:42	74-83-9	
2-Butanone (MEK)	117J	ug/kg	222	53.2	1	03/24/21 11:57	03/24/21 15:42	78-93-3	
n-Butylbenzene	ND	ug/kg	11.1	5.2	1	03/24/21 11:57	03/24/21 15:42	104-51-8	
sec-Butylbenzene	ND	ug/kg	11.1	4.9	1	03/24/21 11:57	03/24/21 15:42	135-98-8	
tert-Butylbenzene	ND	ug/kg	11.1	3.9	1	03/24/21 11:57	03/24/21 15:42	98-06-6	
Carbon tetrachloride	ND	ug/kg	11.1	4.1	1	03/24/21 11:57	03/24/21 15:42	56-23-5	
Chlorobenzene	17.2	ug/kg	11.1	2.1	1	03/24/21 11:57	03/24/21 15:42	108-90-7	
Chloroethane	ND	ug/kg	22.2	8.6	1	03/24/21 11:57	03/24/21 15:42	75-00-3	
Chloroform	ND	ug/kg	11.1	6.7	1	03/24/21 11:57	03/24/21 15:42	67-66-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (5.5-6.0) **Lab ID: 92528011020** Collected: 03/15/21 16:00 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Chloromethane	ND	ug/kg	22.2	9.3	1	03/24/21 11:57	03/24/21 15:42	74-87-3	
2-Chlorotoluene	ND	ug/kg	11.1	3.9	1	03/24/21 11:57	03/24/21 15:42	95-49-8	
4-Chlorotoluene	ND	ug/kg	11.1	2.0	1	03/24/21 11:57	03/24/21 15:42	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	11.1	4.3	1	03/24/21 11:57	03/24/21 15:42	96-12-8	
Dibromochloromethane	ND	ug/kg	11.1	6.2	1	03/24/21 11:57	03/24/21 15:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	11.1	4.9	1	03/24/21 11:57	03/24/21 15:42	106-93-4	
Dibromomethane	ND	ug/kg	11.1	2.4	1	03/24/21 11:57	03/24/21 15:42	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	11.1	4.0	1	03/24/21 11:57	03/24/21 15:42	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	11.1	3.4	1	03/24/21 11:57	03/24/21 15:42	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	11.1	2.9	1	03/24/21 11:57	03/24/21 15:42	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	22.2	4.8	1	03/24/21 11:57	03/24/21 15:42	75-71-8	
1,1-Dichloroethane	ND	ug/kg	11.1	4.6	1	03/24/21 11:57	03/24/21 15:42	75-34-3	
1,2-Dichloroethane	ND	ug/kg	11.1	7.3	1	03/24/21 11:57	03/24/21 15:42	107-06-2	
1,1-Dichloroethene	ND	ug/kg	11.1	4.6	1	03/24/21 11:57	03/24/21 15:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	11.1	3.8	1	03/24/21 11:57	03/24/21 15:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	11.1	3.9	1	03/24/21 11:57	03/24/21 15:42	156-60-5	
1,2-Dichloropropane	ND	ug/kg	11.1	3.3	1	03/24/21 11:57	03/24/21 15:42	78-87-5	
1,3-Dichloropropane	ND	ug/kg	11.1	3.5	1	03/24/21 11:57	03/24/21 15:42	142-28-9	
2,2-Dichloropropane	ND	ug/kg	11.1	3.6	1	03/24/21 11:57	03/24/21 15:42	594-20-7	
1,1-Dichloropropene	ND	ug/kg	11.1	5.3	1	03/24/21 11:57	03/24/21 15:42	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	11.1	3.0	1	03/24/21 11:57	03/24/21 15:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	11.1	3.8	1	03/24/21 11:57	03/24/21 15:42	10061-02-6	
Diisopropyl ether	ND	ug/kg	11.1	3.0	1	03/24/21 11:57	03/24/21 15:42	108-20-3	
Ethylbenzene	19.0	ug/kg	11.1	5.2	1	03/24/21 11:57	03/24/21 15:42	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	22.2	18.1	1	03/24/21 11:57	03/24/21 15:42	87-68-3	
2-Hexanone	ND	ug/kg	111	10.7	1	03/24/21 11:57	03/24/21 15:42	591-78-6	
Isopropylbenzene (Cumene)	254	ug/kg	11.1	3.8	1	03/24/21 11:57	03/24/21 15:42	98-82-8	
p-Isopropyltoluene	ND	ug/kg	11.1	5.5	1	03/24/21 11:57	03/24/21 15:42	99-87-6	
Methylene Chloride	ND	ug/kg	44.4	30.4	1	03/24/21 11:57	03/24/21 15:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	111	10.7	1	03/24/21 11:57	03/24/21 15:42	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	11.1	4.1	1	03/24/21 11:57	03/24/21 15:42	1634-04-4	
Naphthalene	1320	ug/kg	11.1	5.8	1	03/24/21 11:57	03/24/21 15:42	91-20-3	
n-Propylbenzene	16.1	ug/kg	11.1	3.9	1	03/24/21 11:57	03/24/21 15:42	103-65-1	
Styrene	ND	ug/kg	11.1	2.9	1	03/24/21 11:57	03/24/21 15:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	11.1	4.3	1	03/24/21 11:57	03/24/21 15:42	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	11.1	2.9	1	03/24/21 11:57	03/24/21 15:42	79-34-5	
Tetrachloroethene	ND	ug/kg	11.1	3.5	1	03/24/21 11:57	03/24/21 15:42	127-18-4	
Toluene	24.1	ug/kg	11.1	3.2	1	03/24/21 11:57	03/24/21 15:42	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	11.1	9.0	1	03/24/21 11:57	03/24/21 15:42	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	11.1	9.3	1	03/24/21 11:57	03/24/21 15:42	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	11.1	5.8	1	03/24/21 11:57	03/24/21 15:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	11.1	3.7	1	03/24/21 11:57	03/24/21 15:42	79-00-5	
Trichloroethene	ND	ug/kg	11.1	2.9	1	03/24/21 11:57	03/24/21 15:42	79-01-6	
Trichlorofluoromethane	ND	ug/kg	11.1	6.1	1	03/24/21 11:57	03/24/21 15:42	75-69-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: RI-SB-24 (5.5-6.0) **Lab ID: 92528011020** Collected: 03/15/21 16:00 Received: 03/16/21 11:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,2,3-Trichloropropane	ND	ug/kg	11.1	5.6	1	03/24/21 11:57	03/24/21 15:42	96-18-4	
1,2,4-Trimethylbenzene	69.3	ug/kg	11.1	3.0	1	03/24/21 11:57	03/24/21 15:42	95-63-6	
1,3,5-Trimethylbenzene	29.9	ug/kg	11.1	3.7	1	03/24/21 11:57	03/24/21 15:42	108-67-8	
Vinyl acetate	ND	ug/kg	111	8.1	1	03/24/21 11:57	03/24/21 15:42	108-05-4	
Vinyl chloride	ND	ug/kg	22.2	5.6	1	03/24/21 11:57	03/24/21 15:42	75-01-4	
Xylene (Total)	174	ug/kg	22.2	6.3	1	03/24/21 11:57	03/24/21 15:42	1330-20-7	
m&p-Xylene	94.2	ug/kg	22.2	7.6	1	03/24/21 11:57	03/24/21 15:42	179601-23-1	
o-Xylene	80.1	ug/kg	11.1	4.9	1	03/24/21 11:57	03/24/21 15:42	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/24/21 11:57	03/24/21 15:42	2037-26-5	
4-Bromofluorobenzene (S)	97	%	69-134		1	03/24/21 11:57	03/24/21 15:42	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1	03/24/21 11:57	03/24/21 15:42	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	33.1	%	0.10	0.10	1		03/17/21 14:13		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: TRIP BLANK **Lab ID: 92528011021** Collected: 03/15/21 00:00 Received: 03/16/21 11:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260 MSV Low Level SC									
Analytical Method: EPA 8260D									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/L	25.0	5.1	1		03/18/21 15:44	67-64-1	
Benzene	ND	ug/L	1.0	0.34	1		03/18/21 15:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.29	1		03/18/21 15:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.47	1		03/18/21 15:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.31	1		03/18/21 15:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.34	1		03/18/21 15:44	75-25-2	
Bromomethane	ND	ug/L	2.0	1.7	1		03/18/21 15:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	4.0	1		03/18/21 15:44	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	0.33	1		03/18/21 15:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.28	1		03/18/21 15:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.65	1		03/18/21 15:44	75-00-3	
Chloroform	ND	ug/L	5.0	1.6	1		03/18/21 15:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.54	1		03/18/21 15:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.32	1		03/18/21 15:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.32	1		03/18/21 15:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	0.34	1		03/18/21 15:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.36	1		03/18/21 15:44	124-48-1	
Dibromomethane	ND	ug/L	1.0	0.39	1		03/18/21 15:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.34	1		03/18/21 15:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.34	1		03/18/21 15:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/18/21 15:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.35	1		03/18/21 15:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.37	1		03/18/21 15:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.32	1		03/18/21 15:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.35	1		03/18/21 15:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.38	1		03/18/21 15:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.40	1		03/18/21 15:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.36	1		03/18/21 15:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/18/21 15:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.39	1		03/18/21 15:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.43	1		03/18/21 15:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		03/18/21 15:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		03/18/21 15:44	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	0.31	1		03/18/21 15:44	108-20-3	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/18/21 15:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1.5	1		03/18/21 15:44	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.48	1		03/18/21 15:44	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	0.41	1		03/18/21 15:44	99-87-6	
Methylene Chloride	ND	ug/L	5.0	2.0	1		03/18/21 15:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	2.7	1		03/18/21 15:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.42	1		03/18/21 15:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.64	1		03/18/21 15:44	91-20-3	
Styrene	ND	ug/L	1.0	0.29	1		03/18/21 15:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		03/18/21 15:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		03/18/21 15:44	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Sample: TRIP BLANK		Lab ID: 92528011021		Collected: 03/15/21 00:00		Received: 03/16/21 11:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte							
Tetrachloroethene	ND	ug/L	1.0	0.29	1		03/18/21 15:44	127-18-4	
Toluene	ND	ug/L	1.0	0.48	1		03/18/21 15:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.81	1		03/18/21 15:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.64	1		03/18/21 15:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.33	1		03/18/21 15:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.32	1		03/18/21 15:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.38	1		03/18/21 15:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.30	1		03/18/21 15:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.26	1		03/18/21 15:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1.3	1		03/18/21 15:44	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.39	1		03/18/21 15:44	75-01-4	
Xylene (Total)	ND	ug/L	1.0	0.34	1		03/18/21 15:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.71	1		03/18/21 15:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.34	1		03/18/21 15:44	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		03/18/21 15:44	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		03/18/21 15:44	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		03/18/21 15:44	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 607594 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260 MSV Low Level SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011021

METHOD BLANK: 3200736 Matrix: Water

Associated Lab Samples: 92528011021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	0.31	03/18/21 15:08	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.33	03/18/21 15:08	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.22	03/18/21 15:08	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.32	03/18/21 15:08	
1,1-Dichloroethane	ug/L	ND	1.0	0.37	03/18/21 15:08	
1,1-Dichloroethene	ug/L	ND	1.0	0.35	03/18/21 15:08	
1,1-Dichloropropene	ug/L	ND	1.0	0.43	03/18/21 15:08	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	0.81	03/18/21 15:08	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.26	03/18/21 15:08	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	0.64	03/18/21 15:08	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	0.34	03/18/21 15:08	
1,2-Dichlorobenzene	ug/L	ND	1.0	0.34	03/18/21 15:08	
1,2-Dichloroethane	ug/L	ND	1.0	0.32	03/18/21 15:08	
1,2-Dichloropropane	ug/L	ND	1.0	0.36	03/18/21 15:08	
1,3-Dichlorobenzene	ug/L	ND	1.0	0.34	03/18/21 15:08	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	03/18/21 15:08	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	03/18/21 15:08	
2,2-Dichloropropane	ug/L	ND	1.0	0.39	03/18/21 15:08	
2-Butanone (MEK)	ug/L	ND	5.0	4.0	03/18/21 15:08	
2-Chlorotoluene	ug/L	ND	1.0	0.32	03/18/21 15:08	
2-Hexanone	ug/L	ND	5.0	0.48	03/18/21 15:08	
4-Chlorotoluene	ug/L	ND	1.0	0.32	03/18/21 15:08	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	2.7	03/18/21 15:08	
Acetone	ug/L	ND	25.0	5.1	03/18/21 15:08	
Benzene	ug/L	ND	1.0	0.34	03/18/21 15:08	
Bromobenzene	ug/L	ND	1.0	0.29	03/18/21 15:08	
Bromochloromethane	ug/L	ND	1.0	0.47	03/18/21 15:08	
Bromodichloromethane	ug/L	ND	1.0	0.31	03/18/21 15:08	
Bromoform	ug/L	ND	1.0	0.34	03/18/21 15:08	
Bromomethane	ug/L	ND	2.0	1.7	03/18/21 15:08	
Carbon tetrachloride	ug/L	ND	1.0	0.33	03/18/21 15:08	
Chlorobenzene	ug/L	ND	1.0	0.28	03/18/21 15:08	
Chloroethane	ug/L	ND	1.0	0.65	03/18/21 15:08	
Chloroform	ug/L	ND	5.0	1.6	03/18/21 15:08	
Chloromethane	ug/L	ND	1.0	0.54	03/18/21 15:08	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.38	03/18/21 15:08	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.36	03/18/21 15:08	
Dibromochloromethane	ug/L	ND	1.0	0.36	03/18/21 15:08	
Dibromomethane	ug/L	ND	1.0	0.39	03/18/21 15:08	
Dichlorodifluoromethane	ug/L	ND	1.0	0.35	03/18/21 15:08	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

METHOD BLANK: 3200736 Matrix: Water
Associated Lab Samples: 92528011021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	0.31	03/18/21 15:08	
Ethylbenzene	ug/L	ND	1.0	0.30	03/18/21 15:08	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	1.5	03/18/21 15:08	
m&p-Xylene	ug/L	ND	2.0	0.71	03/18/21 15:08	
Methyl-tert-butyl ether	ug/L	ND	1.0	0.42	03/18/21 15:08	
Methylene Chloride	ug/L	ND	5.0	2.0	03/18/21 15:08	
Naphthalene	ug/L	ND	1.0	0.64	03/18/21 15:08	
o-Xylene	ug/L	ND	1.0	0.34	03/18/21 15:08	
p-Isopropyltoluene	ug/L	ND	1.0	0.41	03/18/21 15:08	
Styrene	ug/L	ND	1.0	0.29	03/18/21 15:08	
Tetrachloroethene	ug/L	ND	1.0	0.29	03/18/21 15:08	
Toluene	ug/L	ND	1.0	0.48	03/18/21 15:08	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.40	03/18/21 15:08	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.36	03/18/21 15:08	
Trichloroethene	ug/L	ND	1.0	0.38	03/18/21 15:08	
Trichlorofluoromethane	ug/L	ND	1.0	0.30	03/18/21 15:08	
Vinyl acetate	ug/L	ND	2.0	1.3	03/18/21 15:08	
Vinyl chloride	ug/L	ND	1.0	0.39	03/18/21 15:08	
Xylene (Total)	ug/L	ND	1.0	0.34	03/18/21 15:08	
1,2-Dichloroethane-d4 (S)	%	99	70-130		03/18/21 15:08	
4-Bromofluorobenzene (S)	%	98	70-130		03/18/21 15:08	
Toluene-d8 (S)	%	100	70-130		03/18/21 15:08	

LABORATORY CONTROL SAMPLE: 3200737

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.6	101	70-130	
1,1,1-Trichloroethane	ug/L	50	50.8	102	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	48.7	97	70-130	
1,1,2-Trichloroethane	ug/L	50	50.2	100	70-130	
1,1-Dichloroethane	ug/L	50	50.2	100	70-130	
1,1-Dichloroethene	ug/L	50	50.4	101	70-130	
1,1-Dichloropropene	ug/L	50	50.8	102	70-130	
1,2,3-Trichlorobenzene	ug/L	50	51.7	103	70-130	
1,2,3-Trichloropropane	ug/L	50	48.7	97	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.6	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.5	103	70-130	
1,2-Dichlorobenzene	ug/L	50	49.9	100	70-130	
1,2-Dichloroethane	ug/L	50	49.5	99	70-130	
1,2-Dichloropropane	ug/L	50	50.9	102	70-130	
1,3-Dichlorobenzene	ug/L	50	51.8	104	70-130	
1,3-Dichloropropane	ug/L	50	49.9	100	70-130	
1,4-Dichlorobenzene	ug/L	50	49.0	98	70-130	
2,2-Dichloropropane	ug/L	50	50.9	102	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3200737

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	100	97.1	97	70-130	
2-Chlorotoluene	ug/L	50	50.2	100	70-130	
2-Hexanone	ug/L	100	97.0	97	70-130	
4-Chlorotoluene	ug/L	50	50.2	100	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.1	97	70-130	
Acetone	ug/L	100	101	101	70-130	
Benzene	ug/L	50	49.7	99	70-130	
Bromobenzene	ug/L	50	49.8	100	70-130	
Bromochloromethane	ug/L	50	51.5	103	70-130	
Bromodichloromethane	ug/L	50	45.8	92	70-130	
Bromoform	ug/L	50	51.3	103	70-130	
Bromomethane	ug/L	50	50.5	101	70-130	
Carbon tetrachloride	ug/L	50	49.7	99	70-130	
Chlorobenzene	ug/L	50	50.7	101	70-130	
Chloroethane	ug/L	50	46.5	93	70-130	
Chloroform	ug/L	50	50.7	101	70-130	
Chloromethane	ug/L	50	43.9	88	70-130	
cis-1,2-Dichloroethene	ug/L	50	49.6	99	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.3	101	70-130	
Dibromochloromethane	ug/L	50	51.2	102	70-130	
Dibromomethane	ug/L	50	51.3	103	70-130	
Dichlorodifluoromethane	ug/L	50	41.5	83	70-130	
Diisopropyl ether	ug/L	50	48.0	96	70-130	
Ethylbenzene	ug/L	50	49.8	100	70-130	
Hexachloro-1,3-butadiene	ug/L	50	51.6	103	70-130	
m&p-Xylene	ug/L	100	98.9	99	70-130	
Methyl-tert-butyl ether	ug/L	50	49.7	99	70-130	
Methylene Chloride	ug/L	50	49.1	98	70-130	
Naphthalene	ug/L	50	50.1	100	70-130	
o-Xylene	ug/L	50	50.0	100	70-130	
p-Isopropyltoluene	ug/L	50	50.5	101	70-130	
Styrene	ug/L	50	51.1	102	70-130	
Tetrachloroethene	ug/L	50	49.8	100	70-130	
Toluene	ug/L	50	49.7	99	70-130	
trans-1,2-Dichloroethene	ug/L	50	51.2	102	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.9	100	70-130	
Trichloroethene	ug/L	50	50.4	101	70-130	
Trichlorofluoromethane	ug/L	50	47.0	94	70-130	
Vinyl acetate	ug/L	100	109	109	70-130	
Vinyl chloride	ug/L	50	47.5	95	70-130	
Xylene (Total)	ug/L	150	149	99	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3200738 3200739												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92527568014 Result	Spike Conc.	Spike Conc.	MS Conc.							
1,1,1,2-Tetrachloroethane	ug/L	ND	10000	10000	10300	9810	103	98	73-134	5	30	
1,1,1-Trichloroethane	ug/L	ND	10000	10000	10500	10300	105	103	82-143	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	10000	10000	9890	9880	99	99	70-136	0	30	
1,1,2-Trichloroethane	ug/L	ND	10000	10000	10400	10300	104	103	70-135	1	30	
1,1-Dichloroethane	ug/L	ND	10000	10000	10200	9930	102	99	70-139	3	30	
1,1-Dichloroethene	ug/L	ND	10000	10000	10600	10300	106	103	70-154	3	30	
1,1-Dichloropropene	ug/L	ND	10000	10000	10500	10200	105	102	70-149	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	10000	10000	10800	10300	108	103	70-135	5	30	
1,2,3-Trichloropropane	ug/L	ND	10000	10000	10400	10300	104	103	71-137	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	10000	10000	10900	10500	109	105	73-140	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	10000	10000	10500	10600	105	106	65-134	2	30	
1,2-Dichlorobenzene	ug/L	ND	10000	10000	10500	10100	105	101	70-133	4	30	
1,2-Dichloroethane	ug/L	ND	10000	10000	10200	9840	102	98	70-137	4	30	
1,2-Dichloropropane	ug/L	ND	10000	10000	10700	10400	107	104	70-140	3	30	
1,3-Dichlorobenzene	ug/L	ND	10000	10000	10700	10500	107	105	70-135	2	30	
1,3-Dichloropropane	ug/L	ND	10000	10000	10200	10200	102	102	70-143	1	30	
1,4-Dichlorobenzene	ug/L	ND	10000	10000	10200	9780	102	98	70-133	4	30	
2,2-Dichloropropane	ug/L	ND	10000	10000	9050	9080	91	91	61-148	0	30	
2-Butanone (MEK)	ug/L	ND	20000	20000	19800	20700	99	103	60-139	4	30	
2-Chlorotoluene	ug/L	ND	10000	10000	10700	10500	107	105	70-144	1	30	
2-Hexanone	ug/L	ND	20000	20000	20600	20100	103	101	65-138	2	30	
4-Chlorotoluene	ug/L	ND	10000	10000	10400	10100	104	101	70-137	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20000	20000	20300	20100	101	100	65-135	1	30	
Acetone	ug/L	ND	20000	20000	20800	20500	104	102	60-148	2	30	
Benzene	ug/L	ND	10000	10000	10500	10100	105	101	70-151	4	30	
Bromobenzene	ug/L	ND	10000	10000	10400	10100	104	101	70-136	4	30	
Bromochloromethane	ug/L	ND	10000	10000	9990	10000	100	100	70-141	1	30	
Bromodichloromethane	ug/L	ND	10000	10000	9490	9180	95	92	70-138	3	30	
Bromoform	ug/L	ND	10000	10000	10000	9650	100	96	63-130	4	30	
Bromomethane	ug/L	ND	10000	10000	11100	10000	111	100	15-152	10	30	
Carbon tetrachloride	ug/L	ND	10000	10000	10600	10300	106	103	70-143	4	30	
Chlorobenzene	ug/L	ND	10000	10000	10600	10100	106	101	70-138	4	30	
Chloroethane	ug/L	ND	10000	10000	10200	9970	102	100	52-163	3	30	
Chloroform	ug/L	ND	10000	10000	10100	9940	101	99	70-139	2	30	
Chloromethane	ug/L	ND	10000	10000	8160	8450	82	85	41-139	4	30	
cis-1,2-Dichloroethene	ug/L	4170	10000	10000	13900	14000	97	98	70-141	1	30	
cis-1,3-Dichloropropene	ug/L	ND	10000	10000	9790	9850	98	98	70-137	1	30	
Dibromochloromethane	ug/L	ND	10000	10000	10300	9930	103	99	70-134	3	30	
Dibromomethane	ug/L	ND	10000	10000	10900	10700	109	107	70-138	2	30	
Dichlorodifluoromethane	ug/L	ND	10000	10000	8730	8550	87	86	47-155	2	30	
Diisopropyl ether	ug/L	ND	10000	10000	9670	9640	97	96	63-144	0	30	
Ethylbenzene	ug/L	ND	10000	10000	10400	10200	104	102	66-153	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	10000	10000	10500	10400	105	104	65-149	1	30	
m&p-Xylene	ug/L	ND	20000	20000	20800	20300	104	102	69-152	2	30	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

Parameter	Units	92527568014		3200738		3200739		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Methyl-tert-butyl ether	ug/L	ND	10000	10000	10000	9840	100	98	54-156	2	30			
Methylene Chloride	ug/L	ND	10000	10000	9700	9800	97	98	42-159	1	30			
Naphthalene	ug/L	ND	10000	10000	10900	10600	109	106	61-148	2	30			
o-Xylene	ug/L	ND	10000	10000	10300	9960	103	100	70-148	3	30			
p-Isopropyltoluene	ug/L	ND	10000	10000	10500	10100	105	101	70-146	4	30			
Styrene	ug/L	ND	10000	10000	10500	10000	105	100	70-135	4	30			
Tetrachloroethene	ug/L	ND	10000	10000	10600	10600	106	106	59-143	0	30			
Toluene	ug/L	ND	10000	10000	10500	10300	105	103	59-148	2	30			
trans-1,2-Dichloroethene	ug/L	ND	10000	10000	10500	10300	105	103	70-146	1	30			
trans-1,3-Dichloropropene	ug/L	ND	10000	10000	9890	9620	99	96	70-135	3	30			
Trichloroethene	ug/L	64700	10000	10000	74900	73300	101	86	70-147	2	30			
Trichlorofluoromethane	ug/L	ND	10000	10000	10000	9940	100	99	70-148	1	30			
Vinyl acetate	ug/L	ND	20000	20000	21700	21300	108	106	49-151	2	30			
Vinyl chloride	ug/L	ND	10000	10000	9450	9560	94	96	70-156	1	30			
Xylene (Total)	ug/L	ND	30000	30000	31100	30300	104	101	63-158	3	30			
1,2-Dichloroethane-d4 (S)	%						96	99	70-130					
4-Bromofluorobenzene (S)	%						99	98	70-130					
Toluene-d8 (S)	%						99	98	70-130					

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 607356 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

METHOD BLANK: 3199767 Matrix: Solid
Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	03/17/21 17:01	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	03/17/21 17:01	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	03/17/21 17:01	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	03/17/21 17:01	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	03/17/21 17:01	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	03/17/21 17:01	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	03/17/21 17:01	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	03/17/21 17:01	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	03/17/21 17:01	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	03/17/21 17:01	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	03/17/21 17:01	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	03/17/21 17:01	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	03/17/21 17:01	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	03/17/21 17:01	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	03/17/21 17:01	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	03/17/21 17:01	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	03/17/21 17:01	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	03/17/21 17:01	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	03/17/21 17:01	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	03/17/21 17:01	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	03/17/21 17:01	
2-Butanone (MEK)	ug/kg	ND	100	24.0	03/17/21 17:01	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	03/17/21 17:01	
2-Hexanone	ug/kg	ND	50.0	4.8	03/17/21 17:01	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	03/17/21 17:01	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	03/17/21 17:01	
Acetone	ug/kg	ND	100	32.1	03/17/21 17:01	
Benzene	ug/kg	ND	5.0	2.0	03/17/21 17:01	
Bromobenzene	ug/kg	ND	5.0	1.6	03/17/21 17:01	
Bromochloromethane	ug/kg	ND	5.0	1.5	03/17/21 17:01	
Bromodichloromethane	ug/kg	ND	5.0	1.9	03/17/21 17:01	
Bromoform	ug/kg	ND	5.0	1.8	03/17/21 17:01	
Bromomethane	ug/kg	ND	10.0	7.9	03/17/21 17:01	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	5.0	1.9	03/17/21 17:01	
Chlorobenzene	ug/kg	ND	5.0	0.96	03/17/21 17:01	
Chloroethane	ug/kg	ND	10.0	3.9	03/17/21 17:01	
Chloroform	ug/kg	ND	5.0	3.0	03/17/21 17:01	
Chloromethane	ug/kg	ND	10.0	4.2	03/17/21 17:01	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	03/17/21 17:01	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

METHOD BLANK: 3199767

Matrix: Solid

Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	03/17/21 17:01	
Dibromochloromethane	ug/kg	ND	5.0	2.8	03/17/21 17:01	
Dibromomethane	ug/kg	ND	5.0	1.1	03/17/21 17:01	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	03/17/21 17:01	
Diisopropyl ether	ug/kg	ND	5.0	1.4	03/17/21 17:01	
Ethylbenzene	ug/kg	ND	5.0	2.3	03/17/21 17:01	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	03/17/21 17:01	IK
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	03/17/21 17:01	
m&p-Xylene	ug/kg	ND	10.0	3.4	03/17/21 17:01	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	03/17/21 17:01	
Methylene Chloride	ug/kg	ND	20.0	13.7	03/17/21 17:01	
n-Butylbenzene	ug/kg	ND	5.0	2.4	03/17/21 17:01	
n-Propylbenzene	ug/kg	ND	5.0	1.8	03/17/21 17:01	
Naphthalene	ug/kg	ND	5.0	2.6	03/17/21 17:01	
o-Xylene	ug/kg	ND	5.0	2.2	03/17/21 17:01	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	03/17/21 17:01	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	03/17/21 17:01	
Styrene	ug/kg	ND	5.0	1.3	03/17/21 17:01	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	03/17/21 17:01	v2
Tetrachloroethene	ug/kg	ND	5.0	1.6	03/17/21 17:01	
Toluene	ug/kg	ND	5.0	1.4	03/17/21 17:01	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	03/17/21 17:01	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	03/17/21 17:01	
Trichloroethene	ug/kg	ND	5.0	1.3	03/17/21 17:01	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	03/17/21 17:01	
Vinyl acetate	ug/kg	ND	50.0	3.6	03/17/21 17:01	
Vinyl chloride	ug/kg	ND	10.0	2.5	03/17/21 17:01	
Xylene (Total)	ug/kg	ND	10.0	2.8	03/17/21 17:01	
1,2-Dichloroethane-d4 (S)	%	112	70-130		03/17/21 17:01	
4-Bromofluorobenzene (S)	%	93	69-134		03/17/21 17:01	
Toluene-d8 (S)	%	101	70-130		03/17/21 17:01	

LABORATORY CONTROL SAMPLE: 3199768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1320	106	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1210	97	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1300	104	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1360	108	70-130	
1,1-Dichloroethane	ug/kg	1250	1220	97	70-130	
1,1-Dichloroethene	ug/kg	1250	1270	101	70-130	
1,1-Dichloropropene	ug/kg	1250	1240	99	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1310	105	65-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3199768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,3-Trichloropropane	ug/kg	1250	1310	105	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1340	107	68-130	
1,2,4-Trimethylbenzene	ug/kg	1250	1330	106	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1230	98	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1340	107	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1380	110	70-130	
1,2-Dichloroethane	ug/kg	1250	1160	93	63-130	
1,2-Dichloropropane	ug/kg	1250	1340	107	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1340	107	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1350	108	70-130	
1,3-Dichloropropane	ug/kg	1250	1360	109	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1310	105	70-130	
2,2-Dichloropropane	ug/kg	1250	1330	106	66-130	
2-Butanone (MEK)	ug/kg	2500	2260	90	70-130	
2-Chlorotoluene	ug/kg	1250	1340	107	70-130	
2-Hexanone	ug/kg	2500	2520	101	70-130	
4-Chlorotoluene	ug/kg	1250	1390	111	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2490	99	70-130	
Acetone	ug/kg	2500	2360	95	69-130	
Benzene	ug/kg	1250	1310	105	70-130	
Bromobenzene	ug/kg	1250	1300	104	70-130	
Bromochloromethane	ug/kg	1250	1340	107	70-130	
Bromodichloromethane	ug/kg	1250	1200	96	69-130	
Bromoform	ug/kg	1250	1390	111	70-130	
Bromomethane	ug/kg	1250	1810	145	52-130	IH,IK,L1,v1
Carbon tetrachloride	ug/kg	1250	1270	101	70-130	
Chlorobenzene	ug/kg	1250	1340	107	70-130	
Chloroethane	ug/kg	1250	1270	102	65-130	
Chloroform	ug/kg	1250	1240	99	70-130	
Chloromethane	ug/kg	1250	1350	108	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1210	97	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1340	108	70-130	
Dibromochloromethane	ug/kg	1250	1390	111	70-130	
Dibromomethane	ug/kg	1250	1350	108	70-130	
Dichlorodifluoromethane	ug/kg	1250	1350	108	45-156	
Diisopropyl ether	ug/kg	1250	1200	96	70-130	
Ethylbenzene	ug/kg	1250	1410	113	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1450	116	66-130	IK
Isopropylbenzene (Cumene)	ug/kg	1250	1370	110	70-130	
m&p-Xylene	ug/kg	2500	2690	107	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1190	95	70-130	
Methylene Chloride	ug/kg	1250	1260	101	65-130	
n-Butylbenzene	ug/kg	1250	1390	111	67-130	
n-Propylbenzene	ug/kg	1250	1420	113	70-130	
Naphthalene	ug/kg	1250	1250	100	70-130	
o-Xylene	ug/kg	1250	1380	111	70-130	
p-Isopropyltoluene	ug/kg	1250	1370	110	67-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3199768

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
sec-Butylbenzene	ug/kg	1250	1340	107	69-130	
Styrene	ug/kg	1250	1410	112	70-130	
tert-Butylbenzene	ug/kg	1250	982	79	67-130 v3	
Tetrachloroethene	ug/kg	1250	1360	109	70-130	
Toluene	ug/kg	1250	1250	100	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1280	103	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1320	105	68-130	
Trichloroethene	ug/kg	1250	1330	106	70-130	
Trichlorofluoromethane	ug/kg	1250	1260	101	70-130	
Vinyl acetate	ug/kg	2500	2950	118	70-130	
Vinyl chloride	ug/kg	1250	1280	103	61-130	
Xylene (Total)	ug/kg	3750	4070	109	70-130	
1,2-Dichloroethane-d4 (S)	%			89	70-130	
4-Bromofluorobenzene (S)	%			97	69-134	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 3200136

Parameter	Units	92528011003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	696	637	92	70-131	
1,1,1-Trichloroethane	ug/kg	ND	696	635	91	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	696	602	86	66-130	
1,1,2-Trichloroethane	ug/kg	ND	696	671	96	66-133	
1,1-Dichloroethane	ug/kg	ND	696	641	92	65-130	
1,1-Dichloroethene	ug/kg	ND	696	638	92	10-158	
1,1-Dichloropropene	ug/kg	ND	696	643	92	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	696	563	81	27-138	
1,2,3-Trichloropropane	ug/kg	ND	696	599	86	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	696	570	82	51-134	
1,2,4-Trimethylbenzene	ug/kg	11.0	696	637	90	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	696	502	72	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	696	648	93	70-130	
1,2-Dichlorobenzene	ug/kg	ND	696	652	94	69-130	
1,2-Dichloroethane	ug/kg	ND	696	624	90	59-130	
1,2-Dichloropropane	ug/kg	ND	696	685	98	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	696	632	91	65-137	
1,3-Dichlorobenzene	ug/kg	ND	696	628	90	70-130	
1,3-Dichloropropane	ug/kg	ND	696	669	96	70-130	
1,4-Dichlorobenzene	ug/kg	ND	696	626	90	68-130	
2,2-Dichloropropane	ug/kg	ND	696	622	89	32-130	
2-Butanone (MEK)	ug/kg	ND	1390	1010	73	10-136	
2-Chlorotoluene	ug/kg	ND	696	630	90	69-141	
2-Hexanone	ug/kg	ND	1390	759	55	10-144	
4-Chlorotoluene	ug/kg	ND	696	632	91	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1390	1180	85	25-143	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

MATRIX SPIKE SAMPLE: 3200136		92528011003	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Acetone	ug/kg	ND	1390	826	59	10-130	
Benzene	ug/kg	ND	696	683	98	67-130	
Bromobenzene	ug/kg	ND	696	616	88	70-130	
Bromochloromethane	ug/kg	ND	696	658	95	69-134	
Bromodichloromethane	ug/kg	ND	696	589	85	64-130	
Bromoform	ug/kg	ND	696	611	88	62-130	
Bromomethane	ug/kg	ND	696	617	89	20-176	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	696	625	90	65-140	
Chlorobenzene	ug/kg	ND	696	644	92	70-130	
Chloroethane	ug/kg	ND	696	203	29	10-130	
Chloroform	ug/kg	ND	696	663	95	63-130	
Chloromethane	ug/kg	ND	696	833	120	58-130	
cis-1,2-Dichloroethene	ug/kg	ND	696	651	94	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	696	629	90	67-130	
Dibromochloromethane	ug/kg	ND	696	618	89	67-130	
Dibromomethane	ug/kg	ND	696	666	96	63-131	
Dichlorodifluoromethane	ug/kg	ND	696	683	98	44-180	
Diisopropyl ether	ug/kg	ND	696	624	90	63-130	
Ethylbenzene	ug/kg	ND	696	658	94	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	696	629	90	64-150	IK
Isopropylbenzene (Cumene)	ug/kg	ND	696	645	93	69-135	
m&p-Xylene	ug/kg	20.5	1390	1250	88	60-133	
Methyl-tert-butyl ether	ug/kg	ND	696	631	91	65-130	
Methylene Chloride	ug/kg	ND	696	703	101	61-130	
n-Butylbenzene	ug/kg	ND	696	590	85	65-140	
n-Propylbenzene	ug/kg	ND	696	639	92	67-140	
Naphthalene	ug/kg	29.7	696	577	79	15-145	
o-Xylene	ug/kg	12.0	696	648	91	66-133	
p-Isopropyltoluene	ug/kg	ND	696	621	89	56-147	
sec-Butylbenzene	ug/kg	ND	696	623	89	65-139	
Styrene	ug/kg	ND	696	643	92	70-132	
tert-Butylbenzene	ug/kg	ND	696	490	70	62-135	v3
Tetrachloroethene	ug/kg	ND	696	587	84	70-135	
Toluene	ug/kg	12.8	696	634	89	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	696	672	96	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	696	611	88	62-130	
Trichloroethene	ug/kg	ND	696	682	98	70-135	
Trichlorofluoromethane	ug/kg	ND	696	240	34	10-130	
Vinyl acetate	ug/kg	ND	1390	1380	99	53-130	
Vinyl chloride	ug/kg	ND	696	684	98	61-148	
Xylene (Total)	ug/kg	32.5	2090	1890	89	63-132	
1,2-Dichloroethane-d4 (S)	%				123	70-130	
4-Bromofluorobenzene (S)	%				94	69-134	
Toluene-d8 (S)	%				99	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3199769

Parameter	Units	92528011001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	IK
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3199769

Parameter	Units	92528011001 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	ND		30	
o-Xylene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30 v2	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	108	108			
4-Bromofluorobenzene (S)	%	96	94			
Toluene-d8 (S)	%	102	99			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 607623 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011007

METHOD BLANK: 3200879 Matrix: Solid

Associated Lab Samples: 92528011007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	03/18/21 17:44	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	03/18/21 17:44	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	03/18/21 17:44	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	03/18/21 17:44	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	03/18/21 17:44	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	03/18/21 17:44	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	03/18/21 17:44	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	03/18/21 17:44	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	03/18/21 17:44	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	03/18/21 17:44	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	03/18/21 17:44	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	03/18/21 17:44	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	03/18/21 17:44	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	03/18/21 17:44	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	03/18/21 17:44	
2-Butanone (MEK)	ug/kg	ND	100	24.0	03/18/21 17:44	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
2-Hexanone	ug/kg	ND	50.0	4.8	03/18/21 17:44	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	03/18/21 17:44	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	03/18/21 17:44	
Acetone	ug/kg	ND	100	32.1	03/18/21 17:44	
Benzene	ug/kg	ND	5.0	2.0	03/18/21 17:44	
Bromobenzene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
Bromochloromethane	ug/kg	ND	5.0	1.5	03/18/21 17:44	
Bromodichloromethane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Bromoform	ug/kg	ND	5.0	1.8	03/18/21 17:44	
Bromomethane	ug/kg	ND	10.0	7.9	03/18/21 17:44	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Chlorobenzene	ug/kg	ND	5.0	0.96	03/18/21 17:44	
Chloroethane	ug/kg	ND	10.0	3.9	03/18/21 17:44	
Chloroform	ug/kg	ND	5.0	3.0	03/18/21 17:44	
Chloromethane	ug/kg	ND	10.0	4.2	03/18/21 17:44	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	03/18/21 17:44	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

METHOD BLANK: 3200879 Matrix: Solid
Associated Lab Samples: 92528011007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	03/18/21 17:44	
Dibromomethane	ug/kg	ND	5.0	1.1	03/18/21 17:44	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	03/18/21 17:44	
Diisopropyl ether	ug/kg	ND	5.0	1.4	03/18/21 17:44	
Ethylbenzene	ug/kg	ND	5.0	2.3	03/18/21 17:44	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	03/18/21 17:44	IK
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	03/18/21 17:44	
m&p-Xylene	ug/kg	ND	10.0	3.4	03/18/21 17:44	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Methylene Chloride	ug/kg	ND	20.0	13.7	03/18/21 17:44	
n-Butylbenzene	ug/kg	ND	5.0	2.4	03/18/21 17:44	
n-Propylbenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
Naphthalene	ug/kg	ND	5.0	2.6	03/18/21 17:44	
o-Xylene	ug/kg	ND	5.0	2.2	03/18/21 17:44	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	03/18/21 17:44	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	03/18/21 17:44	
Styrene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	v2
Tetrachloroethene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
Toluene	ug/kg	ND	5.0	1.4	03/18/21 17:44	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
Trichloroethene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	03/18/21 17:44	
Vinyl acetate	ug/kg	ND	50.0	3.6	03/18/21 17:44	
Vinyl chloride	ug/kg	ND	10.0	2.5	03/18/21 17:44	
Xylene (Total)	ug/kg	ND	10.0	2.8	03/18/21 17:44	
1,2-Dichloroethane-d4 (S)	%	112	70-130		03/18/21 17:44	
4-Bromofluorobenzene (S)	%	92	69-134		03/18/21 17:44	
Toluene-d8 (S)	%	101	70-130		03/18/21 17:44	

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1280	102	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1180	95	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1280	102	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1310	105	70-130	
1,1-Dichloroethane	ug/kg	1250	1200	96	70-130	
1,1-Dichloroethene	ug/kg	1250	1240	99	70-130	
1,1-Dichloropropene	ug/kg	1250	1200	96	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1240	99	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1280	102	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1290	103	68-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1290	103	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1170	94	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1320	105	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1330	106	70-130	
1,2-Dichloroethane	ug/kg	1250	1150	92	63-130	
1,2-Dichloropropane	ug/kg	1250	1290	103	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1270	102	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1300	104	70-130	
1,3-Dichloropropane	ug/kg	1250	1300	104	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1280	103	70-130	
2,2-Dichloropropane	ug/kg	1250	1270	101	66-130	
2-Butanone (MEK)	ug/kg	2500	2270	91	70-130	
2-Chlorotoluene	ug/kg	1250	1290	103	70-130	
2-Hexanone	ug/kg	2500	2490	99	70-130	
4-Chlorotoluene	ug/kg	1250	1340	107	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2420	97	70-130	
Acetone	ug/kg	2500	2310	93	69-130	
Benzene	ug/kg	1250	1260	101	70-130	
Bromobenzene	ug/kg	1250	1240	99	70-130	
Bromochloromethane	ug/kg	1250	1320	106	70-130	
Bromodichloromethane	ug/kg	1250	1160	93	69-130	
Bromoform	ug/kg	1250	1360	109	70-130	
Bromomethane	ug/kg	1250	1820	146	52-130	IH,IK,L1,v1
Carbon tetrachloride	ug/kg	1250	1220	98	70-130	
Chlorobenzene	ug/kg	1250	1290	103	70-130	
Chloroethane	ug/kg	1250	1270	102	65-130	
Chloroform	ug/kg	1250	1190	95	70-130	
Chloromethane	ug/kg	1250	1330	107	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1190	95	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1260	101	70-130	
Dibromochloromethane	ug/kg	1250	1360	109	70-130	
Dibromomethane	ug/kg	1250	1270	102	70-130	
Dichlorodifluoromethane	ug/kg	1250	1340	108	45-156	
Diisopropyl ether	ug/kg	1250	1200	96	70-130	
Ethylbenzene	ug/kg	1250	1340	107	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1370	109	66-130	IK
Isopropylbenzene (Cumene)	ug/kg	1250	1310	105	70-130	
m&p-Xylene	ug/kg	2500	2600	104	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1180	95	70-130	
Methylene Chloride	ug/kg	1250	1240	99	65-130	
n-Butylbenzene	ug/kg	1250	1330	107	67-130	
n-Propylbenzene	ug/kg	1250	1330	107	70-130	
Naphthalene	ug/kg	1250	1200	96	70-130	
o-Xylene	ug/kg	1250	1330	107	70-130	
p-Isopropyltoluene	ug/kg	1250	1300	104	67-130	
sec-Butylbenzene	ug/kg	1250	1280	102	69-130	
Styrene	ug/kg	1250	1350	108	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	923	74	67-130	v2
Tetrachloroethene	ug/kg	1250	1290	103	70-130	
Toluene	ug/kg	1250	1190	95	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1260	101	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1260	101	68-130	
Trichloroethene	ug/kg	1250	1280	102	70-130	
Trichlorofluoromethane	ug/kg	1250	1230	98	70-130	
Vinyl acetate	ug/kg	2500	2920	117	70-130	
Vinyl chloride	ug/kg	1250	1250	100	61-130	
Xylene (Total)	ug/kg	3750	3940	105	70-130	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			97	69-134	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE SAMPLE: 3200882

Parameter	Units	92528353002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	1690	1890	112	70-131	
1,1,1-Trichloroethane	ug/kg	ND	1690	1860	110	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1690	1820	108	66-130	
1,1,2-Trichloroethane	ug/kg	ND	1690	1970	117	66-133	
1,1-Dichloroethane	ug/kg	ND	1690	1910	113	65-130	
1,1-Dichloroethene	ug/kg	ND	1690	1950	115	10-158	
1,1-Dichloropropene	ug/kg	ND	1690	1860	110	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	1690	1610	95	27-138	
1,2,3-Trichloropropane	ug/kg	ND	1690	1770	105	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	1690	1710	101	51-134	
1,2,4-Trimethylbenzene	ug/kg	ND	1690	1890	112	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	1690	1430	85	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	1690	1890	112	70-130	
1,2-Dichlorobenzene	ug/kg	ND	1690	2020	120	69-130	
1,2-Dichloroethane	ug/kg	ND	1690	1820	108	59-130	
1,2-Dichloropropane	ug/kg	ND	1690	1990	118	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	1690	1880	111	65-137	
1,3-Dichlorobenzene	ug/kg	ND	1690	1890	112	70-130	
1,3-Dichloropropane	ug/kg	ND	1690	1980	118	70-130	
1,4-Dichlorobenzene	ug/kg	ND	1690	1880	111	68-130	
2,2-Dichloropropane	ug/kg	ND	1690	1810	107	32-130	
2-Butanone (MEK)	ug/kg	ND	3370	2940	87	10-136	
2-Chlorotoluene	ug/kg	ND	1690	1930	115	69-141	
2-Hexanone	ug/kg	ND	3370	3140	93	10-144	
4-Chlorotoluene	ug/kg	ND	1690	1970	117	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	3370	3340	99	25-143	
Acetone	ug/kg	ND	3370	2430	72	10-130	
Benzene	ug/kg	ND	1690	1960	116	67-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

MATRIX SPIKE SAMPLE: 3200882		92528353002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromobenzene	ug/kg	ND	1690	1900	112	70-130	
Bromochloromethane	ug/kg	ND	1690	2100	125	69-134	
Bromodichloromethane	ug/kg	ND	1690	1710	101	64-130	
Bromoform	ug/kg	ND	1690	1780	106	62-130	
Bromomethane	ug/kg	ND	1690	1990	118	20-176	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	1690	1790	106	65-140	
Chlorobenzene	ug/kg	ND	1690	1950	116	70-130	
Chloroethane	ug/kg	ND	1690	713	42	10-130	
Chloroform	ug/kg	ND	1690	1940	115	63-130	
Chloromethane	ug/kg	ND	1690	2290	136	58-130	M1
cis-1,2-Dichloroethene	ug/kg	ND	1690	1880	112	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	1690	1860	110	67-130	
Dibromochloromethane	ug/kg	ND	1690	1860	110	67-130	
Dibromomethane	ug/kg	ND	1690	1890	112	63-131	
Dichlorodifluoromethane	ug/kg	ND	1690	2000	118	44-180	
Diisopropyl ether	ug/kg	ND	1690	1850	110	63-130	
Ethylbenzene	ug/kg	9.2J	1690	2030	120	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	1690	1920	114	64-150	IK
Isopropylbenzene (Cumene)	ug/kg	ND	1690	1920	114	69-135	
m&p-Xylene	ug/kg	65.9	3370	3890	113	60-133	
Methyl-tert-butyl ether	ug/kg	ND	1690	1800	106	65-130	
Methylene Chloride	ug/kg	ND	1690	1990	118	61-130	
n-Butylbenzene	ug/kg	ND	1690	1880	111	65-140	
n-Propylbenzene	ug/kg	ND	1690	1960	116	67-140	
Naphthalene	ug/kg	ND	1690	1460	86	15-145	
o-Xylene	ug/kg	24.0	1690	1950	114	66-133	
p-Isopropyltoluene	ug/kg	ND	1690	1870	111	56-147	
sec-Butylbenzene	ug/kg	ND	1690	1900	113	65-139	
Styrene	ug/kg	ND	1690	1990	118	70-132	
tert-Butylbenzene	ug/kg	ND	1690	1400	83	62-135	v2
Tetrachloroethene	ug/kg	ND	1690	1840	109	70-135	
Toluene	ug/kg	ND	1690	1810	107	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	1690	2000	119	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	1690	1750	104	62-130	
Trichloroethene	ug/kg	ND	1690	1990	118	70-135	
Trichlorofluoromethane	ug/kg	ND	1690	800	47	10-130	
Vinyl acetate	ug/kg	ND	3370	4030	120	53-130	
Vinyl chloride	ug/kg	ND	1690	1930	115	61-148	
Xylene (Total)	ug/kg	89.9	5060	5840	114	63-132	
1,2-Dichloroethane-d4 (S)	%				126	70-130	
4-Bromofluorobenzene (S)	%				97	69-134	
Toluene-d8 (S)	%				99	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3200881

Parameter	Units	92528011007 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	3.4J	2.5J		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	IK
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3200881

Parameter	Units	92528011007 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	10.5J	8.5J		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	7.8	7.7	1	30	
o-Xylene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30 v2	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	9.7	8.8	9	30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	10.5J	ND		30	
1,2-Dichloroethane-d4 (S)	%	108	108			
4-Bromofluorobenzene (S)	%	91	93			
Toluene-d8 (S)	%	102	102			

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 608883 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

METHOD BLANK: 3206984 Matrix: Solid
Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	03/24/21 11:29	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	03/24/21 11:29	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	03/24/21 11:29	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	03/24/21 11:29	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	03/24/21 11:29	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	03/24/21 11:29	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	03/24/21 11:29	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	03/24/21 11:29	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	03/24/21 11:29	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	03/24/21 11:29	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	03/24/21 11:29	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	03/24/21 11:29	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	03/24/21 11:29	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	03/24/21 11:29	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	03/24/21 11:29	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	03/24/21 11:29	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	03/24/21 11:29	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	03/24/21 11:29	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	03/24/21 11:29	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	03/24/21 11:29	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	03/24/21 11:29	
2-Butanone (MEK)	ug/kg	ND	100	24.0	03/24/21 11:29	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	03/24/21 11:29	
2-Hexanone	ug/kg	ND	50.0	4.8	03/24/21 11:29	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	03/24/21 11:29	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	03/24/21 11:29	
Acetone	ug/kg	ND	100	32.1	03/24/21 11:29	
Benzene	ug/kg	ND	5.0	2.0	03/24/21 11:29	
Bromobenzene	ug/kg	ND	5.0	1.6	03/24/21 11:29	
Bromochloromethane	ug/kg	ND	5.0	1.5	03/24/21 11:29	
Bromodichloromethane	ug/kg	ND	5.0	1.9	03/24/21 11:29	
Bromoform	ug/kg	ND	5.0	1.8	03/24/21 11:29	
Bromomethane	ug/kg	ND	10.0	7.9	03/24/21 11:29	
Carbon tetrachloride	ug/kg	ND	5.0	1.9	03/24/21 11:29	
Chlorobenzene	ug/kg	ND	5.0	0.96	03/24/21 11:29	
Chloroethane	ug/kg	ND	10.0	3.9	03/24/21 11:29	
Chloroform	ug/kg	ND	5.0	3.0	03/24/21 11:29	
Chloromethane	ug/kg	ND	10.0	4.2	03/24/21 11:29	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	03/24/21 11:29	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	03/24/21 11:29	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

METHOD BLANK: 3206984 Matrix: Solid
Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	03/24/21 11:29	
Dibromomethane	ug/kg	ND	5.0	1.1	03/24/21 11:29	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	03/24/21 11:29	
Diisopropyl ether	ug/kg	ND	5.0	1.4	03/24/21 11:29	
Ethylbenzene	ug/kg	ND	5.0	2.3	03/24/21 11:29	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	03/24/21 11:29	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	03/24/21 11:29	
m&p-Xylene	ug/kg	ND	10.0	3.4	03/24/21 11:29	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	03/24/21 11:29	
Methylene Chloride	ug/kg	ND	20.0	13.7	03/24/21 11:29	
n-Butylbenzene	ug/kg	ND	5.0	2.4	03/24/21 11:29	
n-Propylbenzene	ug/kg	ND	5.0	1.8	03/24/21 11:29	
Naphthalene	ug/kg	ND	5.0	2.6	03/24/21 11:29	
o-Xylene	ug/kg	ND	5.0	2.2	03/24/21 11:29	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	03/24/21 11:29	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	03/24/21 11:29	
Styrene	ug/kg	ND	5.0	1.3	03/24/21 11:29	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	03/24/21 11:29	
Tetrachloroethene	ug/kg	ND	5.0	1.6	03/24/21 11:29	
Toluene	ug/kg	ND	5.0	1.4	03/24/21 11:29	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	03/24/21 11:29	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	03/24/21 11:29	
Trichloroethene	ug/kg	ND	5.0	1.3	03/24/21 11:29	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	03/24/21 11:29	
Vinyl acetate	ug/kg	ND	50.0	3.6	03/24/21 11:29	
Vinyl chloride	ug/kg	ND	10.0	2.5	03/24/21 11:29	
Xylene (Total)	ug/kg	ND	10.0	2.8	03/24/21 11:29	
1,2-Dichloroethane-d4 (S)	%	94	70-130		03/24/21 11:29	
4-Bromofluorobenzene (S)	%	97	69-134		03/24/21 11:29	
Toluene-d8 (S)	%	98	70-130		03/24/21 11:29	

LABORATORY CONTROL SAMPLE: 3206985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1220	98	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1100	88	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1150	92	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1200	96	70-130	
1,1-Dichloroethane	ug/kg	1250	1070	85	70-130	
1,1-Dichloroethene	ug/kg	1250	1100	88	70-130	
1,1-Dichloropropene	ug/kg	1250	1100	88	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1240	100	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1140	91	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1220	98	68-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3206985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1200	96	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1260	100	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1230	98	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1210	97	70-130	
1,2-Dichloroethane	ug/kg	1250	1060	85	63-130	
1,2-Dichloropropane	ug/kg	1250	1160	93	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1160	93	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1170	93	70-130	
1,3-Dichloropropane	ug/kg	1250	1200	96	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1210	97	70-130	
2,2-Dichloropropane	ug/kg	1250	1040	83	66-130	
2-Butanone (MEK)	ug/kg	2500	2100	84	70-130	
2-Chlorotoluene	ug/kg	1250	1180	94	70-130	
2-Hexanone	ug/kg	2500	2300	92	70-130	
4-Chlorotoluene	ug/kg	1250	1140	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2230	89	70-130	
Acetone	ug/kg	2500	2120	85	69-130	
Benzene	ug/kg	1250	1180	95	70-130	
Bromobenzene	ug/kg	1250	1220	98	70-130	
Bromochloromethane	ug/kg	1250	1190	95	70-130	
Bromodichloromethane	ug/kg	1250	1080	87	69-130	
Bromoform	ug/kg	1250	1280	102	70-130	
Bromomethane	ug/kg	1250	1300	104	52-130	
Carbon tetrachloride	ug/kg	1250	1210	97	70-130	
Chlorobenzene	ug/kg	1250	1190	95	70-130	
Chloroethane	ug/kg	1250	1150	92	65-130	
Chloroform	ug/kg	1250	1020	81	70-130	
Chloromethane	ug/kg	1250	953	76	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1040	83	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1170	94	70-130	
Dibromochloromethane	ug/kg	1250	1290	104	70-130	
Dibromomethane	ug/kg	1250	1270	102	70-130	
Dichlorodifluoromethane	ug/kg	1250	1190	95	45-156	
Diisopropyl ether	ug/kg	1250	971	78	70-130	
Ethylbenzene	ug/kg	1250	1130	90	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1270	101	66-130	
Isopropylbenzene (Cumene)	ug/kg	1250	1170	94	70-130	
m&p-Xylene	ug/kg	2500	2340	93	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1040	83	70-130	
Methylene Chloride	ug/kg	1250	1040	83	65-130	
n-Butylbenzene	ug/kg	1250	1150	92	67-130	
n-Propylbenzene	ug/kg	1250	1160	93	70-130	
Naphthalene	ug/kg	1250	1230	98	70-130	
o-Xylene	ug/kg	1250	1180	94	70-130	
p-Isopropyltoluene	ug/kg	1250	1180	94	67-130	
sec-Butylbenzene	ug/kg	1250	1130	90	69-130	
Styrene	ug/kg	1250	1240	99	70-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3206985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	1120	90	67-130	
Tetrachloroethene	ug/kg	1250	1210	97	70-130	
Toluene	ug/kg	1250	1180	94	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1050	84	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1170	93	68-130	
Trichloroethene	ug/kg	1250	1210	97	70-130	
Trichlorofluoromethane	ug/kg	1250	1170	94	70-130	
Vinyl acetate	ug/kg	2500	2390	96	70-130	
Vinyl chloride	ug/kg	1250	1080	86	61-130	
Xylene (Total)	ug/kg	3750	3510	94	70-130	
1,2-Dichloroethane-d4 (S)	%			82	70-130	
4-Bromofluorobenzene (S)	%			95	69-134	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE SAMPLE: 3206987

Parameter	Units	92528011018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	881	1080	122	70-131	
1,1,1-Trichloroethane	ug/kg	ND	881	910	103	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	881	856	97	66-130	
1,1,2-Trichloroethane	ug/kg	ND	881	929	105	66-133	
1,1-Dichloroethane	ug/kg	ND	881	765	87	65-130	
1,1-Dichloroethene	ug/kg	ND	881	988	112	10-158	
1,1-Dichloropropene	ug/kg	ND	881	897	102	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	881	1030	117	27-138	
1,2,3-Trichloropropane	ug/kg	ND	881	819	93	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	881	989	112	51-134	
1,2,4-Trimethylbenzene	ug/kg	ND	881	937	106	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	881	879	100	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	881	1150	131	70-130	M1
1,2-Dichlorobenzene	ug/kg	ND	881	964	109	69-130	
1,2-Dichloroethane	ug/kg	ND	881	889	101	59-130	
1,2-Dichloropropane	ug/kg	ND	881	952	108	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	881	948	108	65-137	
1,3-Dichlorobenzene	ug/kg	ND	881	915	104	70-130	
1,3-Dichloropropane	ug/kg	ND	881	938	106	70-130	
1,4-Dichlorobenzene	ug/kg	ND	881	935	106	68-130	
2,2-Dichloropropane	ug/kg	ND	881	800	91	32-130	
2-Butanone (MEK)	ug/kg	ND	1760	1560	88	10-136	
2-Chlorotoluene	ug/kg	ND	881	947	107	69-141	
2-Hexanone	ug/kg	ND	1760	1560	88	10-144	
4-Chlorotoluene	ug/kg	ND	881	895	102	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1760	1640	93	25-143	
Acetone	ug/kg	ND	1760	1310	74	10-130	
Benzene	ug/kg	ND	881	961	109	67-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

MATRIX SPIKE SAMPLE: 3206987		92528011018	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromobenzene	ug/kg	ND	881	962	109	70-130	
Bromochloromethane	ug/kg	ND	881	930	106	69-134	
Bromodichloromethane	ug/kg	ND	881	826	94	64-130	
Bromoform	ug/kg	ND	881	837	95	62-130	
Bromomethane	ug/kg	ND	881	1110	126	20-176	
Carbon tetrachloride	ug/kg	ND	881	894	101	65-140	
Chlorobenzene	ug/kg	ND	881	915	104	70-130	
Chloroethane	ug/kg	ND	881	386	44	10-130	
Chloroform	ug/kg	ND	881	778	88	63-130	
Chloromethane	ug/kg	ND	881	876	99	58-130	
cis-1,2-Dichloroethene	ug/kg	ND	881	806	91	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	881	909	103	67-130	
Dibromochloromethane	ug/kg	ND	881	905	103	67-130	
Dibromomethane	ug/kg	ND	881	985	112	63-131	
Dichlorodifluoromethane	ug/kg	ND	881	951	108	44-180	
Diisopropyl ether	ug/kg	ND	881	785	89	63-130	
Ethylbenzene	ug/kg	5.4J	881	897	101	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	881	1130	128	64-150	
Isopropylbenzene (Cumene)	ug/kg	ND	881	968	110	69-135	
m&p-Xylene	ug/kg	ND	1760	2120	120	60-133	
Methyl-tert-butyl ether	ug/kg	ND	881	810	92	65-130	
Methylene Chloride	ug/kg	ND	881	872	99	61-130	
n-Butylbenzene	ug/kg	ND	881	939	107	65-140	
n-Propylbenzene	ug/kg	ND	881	957	109	67-140	
Naphthalene	ug/kg	21.0	881	956	106	15-145	
o-Xylene	ug/kg	ND	881	937	106	66-133	
p-Isopropyltoluene	ug/kg	ND	881	1050	119	56-147	
sec-Butylbenzene	ug/kg	ND	881	1230	139	65-139	
Styrene	ug/kg	ND	881	960	109	70-132	
tert-Butylbenzene	ug/kg	ND	881	963	109	62-135	
Tetrachloroethene	ug/kg	ND	881	900	102	70-135	
Toluene	ug/kg	8.1J	881	970	109	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	881	854	97	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	881	886	101	62-130	
Trichloroethene	ug/kg	ND	881	965	110	70-135	
Trichlorofluoromethane	ug/kg	ND	881	393	45	10-130	
Vinyl acetate	ug/kg	ND	1760	1760	100	53-130	
Vinyl chloride	ug/kg	ND	881	868	99	61-148	
Xylene (Total)	ug/kg	ND	2640	3060	116	63-132	
1,2-Dichloroethane-d4 (S)	%				110	70-130	
4-Bromofluorobenzene (S)	%				93	69-134	
Toluene-d8 (S)	%				99	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3206986

Parameter	Units	92528011017 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3206986

Parameter	Units	92528011017 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	ND		30	
o-Xylene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	91	93			
4-Bromofluorobenzene (S)	%	97	96			
Toluene-d8 (S)	%	99	98			

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 607315 Analysis Method: EPA 8270E
QC Batch Method: EPA 3546 Analysis Description: 8270E Solid MSSV Microwave
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011007, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

METHOD BLANK: 3199476 Matrix: Solid
Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011007, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	331	116	03/18/21 07:40	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	331	158	03/18/21 07:40	
2,4,5-Trichlorophenol	ug/kg	ND	331	152	03/18/21 07:40	
2,4,6-Trichlorophenol	ug/kg	ND	331	136	03/18/21 07:40	
2,4-Dichlorophenol	ug/kg	ND	331	129	03/18/21 07:40	
2,4-Dimethylphenol	ug/kg	ND	331	137	03/18/21 07:40	
2,4-Dinitrophenol	ug/kg	ND	1660	1020	03/18/21 07:40	
2,4-Dinitrotoluene	ug/kg	ND	331	127	03/18/21 07:40	
2,6-Dinitrotoluene	ug/kg	ND	331	121	03/18/21 07:40	
2-Chloronaphthalene	ug/kg	ND	331	131	03/18/21 07:40	
2-Chlorophenol	ug/kg	ND	331	124	03/18/21 07:40	
2-Methylnaphthalene	ug/kg	ND	331	132	03/18/21 07:40	
2-Methylphenol(o-Cresol)	ug/kg	ND	331	135	03/18/21 07:40	
2-Nitroaniline	ug/kg	ND	1660	271	03/18/21 07:40	
2-Nitrophenol	ug/kg	ND	331	143	03/18/21 07:40	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	331	133	03/18/21 07:40	
3,3'-Dichlorobenzidine	ug/kg	ND	662	224	03/18/21 07:40	IL
3-Nitroaniline	ug/kg	ND	1660	260	03/18/21 07:40	
4,6-Dinitro-2-methylphenol	ug/kg	ND	662	309	03/18/21 07:40	
4-Bromophenylphenyl ether	ug/kg	ND	331	127	03/18/21 07:40	
4-Chloro-3-methylphenol	ug/kg	ND	662	233	03/18/21 07:40	
4-Chloroaniline	ug/kg	ND	662	260	03/18/21 07:40	
4-Chlorophenylphenyl ether	ug/kg	ND	331	123	03/18/21 07:40	
4-Nitroaniline	ug/kg	ND	662	252	03/18/21 07:40	
4-Nitrophenol	ug/kg	ND	1660	640	03/18/21 07:40	
Acenaphthene	ug/kg	ND	331	116	03/18/21 07:40	
Acenaphthylene	ug/kg	ND	331	116	03/18/21 07:40	
Aniline	ug/kg	ND	331	129	03/18/21 07:40	
Anthracene	ug/kg	ND	331	108	03/18/21 07:40	
Benzo(a)anthracene	ug/kg	ND	331	110	03/18/21 07:40	
Benzo(a)pyrene	ug/kg	ND	331	114	03/18/21 07:40	
Benzo(b)fluoranthene	ug/kg	ND	331	110	03/18/21 07:40	
Benzo(g,h,i)perylene	ug/kg	ND	331	128	03/18/21 07:40	
Benzo(k)fluoranthene	ug/kg	ND	331	116	03/18/21 07:40	
Benzoic Acid	ug/kg	ND	1660	711	03/18/21 07:40	
Benzyl alcohol	ug/kg	ND	662	251	03/18/21 07:40	
bis(2-Chloroethoxy)methane	ug/kg	ND	331	137	03/18/21 07:40	
bis(2-Chloroethyl) ether	ug/kg	ND	331	124	03/18/21 07:40	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	331	128	03/18/21 07:40	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

METHOD BLANK: 3199476

Matrix: Solid

Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011007, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Butylbenzylphthalate	ug/kg	ND	331	139	03/18/21 07:40	
Chrysene	ug/kg	ND	331	120	03/18/21 07:40	
Di-n-butylphthalate	ug/kg	ND	331	111	03/18/21 07:40	
Di-n-octylphthalate	ug/kg	ND	331	130	03/18/21 07:40	
Dibenz(a,h)anthracene	ug/kg	ND	331	127	03/18/21 07:40	
Dibenzofuran	ug/kg	ND	331	119	03/18/21 07:40	
Diethylphthalate	ug/kg	ND	331	121	03/18/21 07:40	
Dimethylphthalate	ug/kg	ND	331	120	03/18/21 07:40	
Fluoranthene	ug/kg	ND	331	113	03/18/21 07:40	
Fluorene	ug/kg	ND	331	116	03/18/21 07:40	
Hexachlorobenzene	ug/kg	ND	331	129	03/18/21 07:40	
Hexachlorocyclopentadiene	ug/kg	ND	331	190	03/18/21 07:40	
Hexachloroethane	ug/kg	ND	331	126	03/18/21 07:40	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	331	130	03/18/21 07:40	
Isophorone	ug/kg	ND	331	147	03/18/21 07:40	
N-Nitroso-di-n-propylamine	ug/kg	ND	331	124	03/18/21 07:40	
N-Nitrosodimethylamine	ug/kg	ND	331	111	03/18/21 07:40	
N-Nitrosodiphenylamine	ug/kg	ND	331	117	03/18/21 07:40	
Nitrobenzene	ug/kg	ND	331	154	03/18/21 07:40	
Pentachlorophenol	ug/kg	ND	662	324	03/18/21 07:40	
Phenanthrene	ug/kg	ND	331	108	03/18/21 07:40	
Phenol	ug/kg	ND	331	147	03/18/21 07:40	
Pyrene	ug/kg	ND	331	134	03/18/21 07:40	
Pyridine	ug/kg	ND	331	104	03/18/21 07:40	
2,4,6-Tribromophenol (S)	%	85	18-130		03/18/21 07:40	
2-Fluorobiphenyl (S)	%	75	19-130		03/18/21 07:40	
2-Fluorophenol (S)	%	77	18-130		03/18/21 07:40	
Nitrobenzene-d5 (S)	%	81	21-130		03/18/21 07:40	
Phenol-d6 (S)	%	83	18-130		03/18/21 07:40	
Terphenyl-d14 (S)	%	118	15-130		03/18/21 07:40	

LABORATORY CONTROL SAMPLE: 3199477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1670	1400	83	54-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	1670	1310	78	38-130	
2,4,5-Trichlorophenol	ug/kg	1670	1390	83	49-130	
2,4,6-Trichlorophenol	ug/kg	1670	1360	81	50-130	
2,4-Dichlorophenol	ug/kg	1670	1520	91	51-130	
2,4-Dimethylphenol	ug/kg	1670	1520	91	53-130	
2,4-Dinitrophenol	ug/kg	8360	6280	75	39-130	
2,4-Dinitrotoluene	ug/kg	1670	1450	87	53-130	
2,6-Dinitrotoluene	ug/kg	1670	1410	85	55-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3199477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chloronaphthalene	ug/kg	1670	1350	81	48-130	
2-Chlorophenol	ug/kg	1670	1350	81	54-130	
2-Methylnaphthalene	ug/kg	1670	1410	84	57-130	
2-Methylphenol(o-Cresol)	ug/kg	1670	1440	86	50-130	
2-Nitroaniline	ug/kg	3340	2870	86	49-130	
2-Nitrophenol	ug/kg	1670	1510	90	50-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1460	87	50-130	
3,3'-Dichlorobenzidine	ug/kg	3340	2510	75	47-130	IL
3-Nitroaniline	ug/kg	3340	2430	73	45-130	
4,6-Dinitro-2-methylphenol	ug/kg	3340	2740	82	50-142	
4-Bromophenylphenyl ether	ug/kg	1670	1400	84	55-130	
4-Chloro-3-methylphenol	ug/kg	3340	3020	90	52-130	
4-Chloroaniline	ug/kg	3340	2640	79	49-130	
4-Chlorophenylphenyl ether	ug/kg	1670	1480	88	53-130	
4-Nitroaniline	ug/kg	3340	2740	82	51-130	
4-Nitrophenol	ug/kg	8360	7360	88	40-130	
Acenaphthene	ug/kg	1670	1400	84	56-130	
Acenaphthylene	ug/kg	1670	1390	83	58-130	
Aniline	ug/kg	1670	1250	74	44-130	
Anthracene	ug/kg	1670	1450	86	60-130	
Benzo(a)anthracene	ug/kg	1670	1500	90	59-130	
Benzo(a)pyrene	ug/kg	1670	1500	89	57-130	
Benzo(b)fluoranthene	ug/kg	1670	1470	88	54-130	
Benzo(g,h,i)perylene	ug/kg	1670	1300	78	59-130	
Benzo(k)fluoranthene	ug/kg	1670	1530	91	54-130	
Benzoic Acid	ug/kg	8360	4550	54	19-130	
Benzyl alcohol	ug/kg	3340	2800	84	50-130	
bis(2-Chloroethoxy)methane	ug/kg	1670	1480	89	55-130	
bis(2-Chloroethyl) ether	ug/kg	1670	1460	87	53-130	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1480	89	58-130	
Butylbenzylphthalate	ug/kg	1670	1430	86	46-138	
Chrysene	ug/kg	1670	1480	88	57-130	
Di-n-butylphthalate	ug/kg	1670	1430	85	57-130	
Di-n-octylphthalate	ug/kg	1670	1450	87	57-130	
Dibenz(a,h)anthracene	ug/kg	1670	1380	82	60-130	
Dibenzofuran	ug/kg	1670	1450	87	54-130	
Diethylphthalate	ug/kg	1670	1390	83	55-130	
Dimethylphthalate	ug/kg	1670	1370	82	57-130	
Fluoranthene	ug/kg	1670	1540	92	57-130	
Fluorene	ug/kg	1670	1450	87	56-130	
Hexachlorobenzene	ug/kg	1670	1430	85	53-130	
Hexachlorocyclopentadiene	ug/kg	1670	1060	63	23-130	
Hexachloroethane	ug/kg	1670	1380	83	48-130	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1390	83	61-130	
Isophorone	ug/kg	1670	1410	84	49-130	
N-Nitroso-di-n-propylamine	ug/kg	1670	1470	88	52-130	
N-Nitrosodimethylamine	ug/kg	1670	1320	79	45-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3199477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
N-Nitrosodiphenylamine	ug/kg	1670	1390	83	56-130	
Nitrobenzene	ug/kg	1670	1430	86	50-130	
Pentachlorophenol	ug/kg	3340	2780	83	33-130	
Phenanthrene	ug/kg	1670	1480	88	60-130	
Phenol	ug/kg	1670	1480	89	54-130	
Pyrene	ug/kg	1670	1510	90	61-130	
Pyridine	ug/kg	1670	1080	65	35-130	
2,4,6-Tribromophenol (S)	%			92	18-130	
2-Fluorobiphenyl (S)	%			81	19-130	
2-Fluorophenol (S)	%			83	18-130	
Nitrobenzene-d5 (S)	%			87	21-130	
Phenol-d6 (S)	%			84	18-130	
Terphenyl-d14 (S)	%			105	15-130	

MATRIX SPIKE SAMPLE: 3199478

Parameter	Units	92528011001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	ND	1940	1510	78	30-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	1940	1430	74	30-130	
2,4,5-Trichlorophenol	ug/kg	ND	1940	1610	83	26-130	
2,4,6-Trichlorophenol	ug/kg	ND	1940	1540	80	23-130	
2,4-Dichlorophenol	ug/kg	ND	1940	1600	83	29-130	
2,4-Dimethylphenol	ug/kg	ND	1940	1650	86	13-130	
2,4-Dinitrophenol	ug/kg	ND	9660	6480	67	10-131	
2,4-Dinitrotoluene	ug/kg	ND	1940	1690	87	28-130	
2,6-Dinitrotoluene	ug/kg	ND	1940	1640	85	36-130	
2-Chloronaphthalene	ug/kg	ND	1940	1480	77	27-130	
2-Chlorophenol	ug/kg	ND	1940	1480	77	29-130	
2-Methylnaphthalene	ug/kg	ND	1940	1560	81	29-130	
2-Methylphenol(o-Cresol)	ug/kg	ND	1940	1560	81	20-130	
2-Nitroaniline	ug/kg	ND	3860	3400	88	29-130	
2-Nitrophenol	ug/kg	ND	1940	1600	83	26-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	1940	1540	80	10-176	
3,3'-Dichlorobenzidine	ug/kg	ND	3860	3120	81	15-130 IL	
3-Nitroaniline	ug/kg	ND	3860	3090	80	28-130	
4,6-Dinitro-2-methylphenol	ug/kg	ND	3860	2980	77	15-132	
4-Bromophenylphenyl ether	ug/kg	ND	1940	1590	82	35-130	
4-Chloro-3-methylphenol	ug/kg	ND	3860	3280	85	30-130	
4-Chloroaniline	ug/kg	ND	3860	2900	75	28-130	
4-Chlorophenylphenyl ether	ug/kg	ND	1940	1690	88	32-130	
4-Nitroaniline	ug/kg	ND	3860	3300	85	30-130	
4-Nitrophenol	ug/kg	ND	9660	8610	89	17-130	
Acenaphthene	ug/kg	ND	1940	1600	83	29-130	
Acenaphthylene	ug/kg	ND	1940	1580	82	31-130	
Aniline	ug/kg	ND	1940	1250	65	10-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

MATRIX SPIKE SAMPLE:	3199478	92528011001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Anthracene	ug/kg	ND	1940	1660	86	33-130	
Benzo(a)anthracene	ug/kg	ND	1940	1710	89	32-130	
Benzo(a)pyrene	ug/kg	ND	1940	1710	88	32-130	
Benzo(b)fluoranthene	ug/kg	ND	1940	1710	89	33-130	
Benzo(g,h,i)perylene	ug/kg	ND	1940	1580	82	28-130	
Benzo(k)fluoranthene	ug/kg	ND	1940	1720	89	31-130	
Benzoic Acid	ug/kg	ND	9660	4200	44	10-130	
Benzyl alcohol	ug/kg	ND	3860	3020	78	31-130	
bis(2-Chloroethoxy)methane	ug/kg	ND	1940	1520	79	30-130	
bis(2-Chloroethyl) ether	ug/kg	ND	1940	1510	78	68-130	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	1940	1650	85	40-130	
Butylbenzylphthalate	ug/kg	ND	1940	1630	84	40-130	
Chrysene	ug/kg	ND	1940	1660	86	30-130	
Di-n-butylphthalate	ug/kg	ND	1940	1550	80	41-130	
Di-n-octylphthalate	ug/kg	ND	1940	1610	83	42-130	
Dibenz(a,h)anthracene	ug/kg	ND	1940	1660	86	27-130	
Dibenzofuran	ug/kg	ND	1940	1660	86	32-130	
Diethylphthalate	ug/kg	ND	1940	1640	85	40-130	
Dimethylphthalate	ug/kg	ND	1940	1600	83	37-130	
Fluoranthene	ug/kg	ND	1940	1680	87	26-130	
Fluorene	ug/kg	ND	1940	1680	87	31-130	
Hexachlorobenzene	ug/kg	ND	1940	1630	84	29-130	
Hexachlorocyclopentadiene	ug/kg	ND	1940	1020	53	10-130	
Hexachloroethane	ug/kg	ND	1940	1490	77	21-130	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	1940	1610	84	28-130	
Isophorone	ug/kg	ND	1940	1510	78	32-130	
N-Nitroso-di-n-propylamine	ug/kg	ND	1940	1590	82	31-130	
N-Nitrosodimethylamine	ug/kg	ND	1940	1390	72	20-130	
N-Nitrosodiphenylamine	ug/kg	ND	1940	1610	83	32-130	
Nitrobenzene	ug/kg	ND	1940	1500	78	25-130	
Pentachlorophenol	ug/kg	ND	3860	3150	81	10-130	
Phenanthrene	ug/kg	ND	1940	1660	86	34-130	
Phenol	ug/kg	ND	1940	1630	84	14-130	
Pyrene	ug/kg	ND	1940	1730	89	31-130	
Pyridine	ug/kg	ND	1940	759	39	10-130	
2,4,6-Tribromophenol (S)	%				92	18-130	
2-Fluorobiphenyl (S)	%				78	19-130	
2-Fluorophenol (S)	%				75	18-130	
Nitrobenzene-d5 (S)	%				80	21-130	
Phenol-d6 (S)	%				79	18-130	
Terphenyl-d14 (S)	%				104	15-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3199513

Parameter	Units	92528011003 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/kg	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	ND		30	
2,4,5-Trichlorophenol	ug/kg	ND	ND		30	
2,4,6-Trichlorophenol	ug/kg	ND	ND		30	
2,4-Dichlorophenol	ug/kg	ND	ND		30	
2,4-Dimethylphenol	ug/kg	ND	ND		30	
2,4-Dinitrophenol	ug/kg	ND	ND		30	
2,4-Dinitrotoluene	ug/kg	ND	ND		30	
2,6-Dinitrotoluene	ug/kg	ND	ND		30	
2-Chloronaphthalene	ug/kg	ND	ND		30	
2-Chlorophenol	ug/kg	ND	ND		30	
2-Methylnaphthalene	ug/kg	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/kg	ND	ND		30	
2-Nitroaniline	ug/kg	ND	ND		30	
2-Nitrophenol	ug/kg	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	ND		30	
3,3'-Dichlorobenzidine	ug/kg	ND	ND		30	IL
3-Nitroaniline	ug/kg	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/kg	ND	ND		30	
4-Bromophenylphenyl ether	ug/kg	ND	ND		30	
4-Chloro-3-methylphenol	ug/kg	ND	ND		30	
4-Chloroaniline	ug/kg	ND	ND		30	
4-Chlorophenylphenyl ether	ug/kg	ND	ND		30	
4-Nitroaniline	ug/kg	ND	ND		30	
4-Nitrophenol	ug/kg	ND	ND		30	
Acenaphthene	ug/kg	ND	ND		30	
Acenaphthylene	ug/kg	ND	ND		30	
Aniline	ug/kg	ND	ND		30	
Anthracene	ug/kg	ND	ND		30	
Benzo(a)anthracene	ug/kg	ND	ND		30	
Benzo(a)pyrene	ug/kg	ND	ND		30	
Benzo(b)fluoranthene	ug/kg	ND	ND		30	
Benzo(g,h,i)perylene	ug/kg	ND	ND		30	
Benzo(k)fluoranthene	ug/kg	ND	ND		30	
Benzoic Acid	ug/kg	ND	ND		30	
Benzyl alcohol	ug/kg	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/kg	ND	ND		30	
bis(2-Chloroethyl) ether	ug/kg	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	ND		30	
Butylbenzylphthalate	ug/kg	ND	ND		30	
Chrysene	ug/kg	ND	ND		30	
Di-n-butylphthalate	ug/kg	ND	ND		30	
Di-n-octylphthalate	ug/kg	ND	ND		30	
Dibenz(a,h)anthracene	ug/kg	ND	ND		30	
Dibenzofuran	ug/kg	ND	ND		30	
Diethylphthalate	ug/kg	ND	ND		30	
Dimethylphthalate	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3199513

Parameter	Units	92528011003 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoranthene	ug/kg	ND	ND		30	
Fluorene	ug/kg	ND	ND		30	
Hexachlorobenzene	ug/kg	ND	ND		30	
Hexachlorocyclopentadiene	ug/kg	ND	ND		30	
Hexachloroethane	ug/kg	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	ND		30	
Isophorone	ug/kg	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/kg	ND	ND		30	
N-Nitrosodimethylamine	ug/kg	ND	ND		30	
N-Nitrosodiphenylamine	ug/kg	ND	ND		30	
Nitrobenzene	ug/kg	ND	ND		30	
Pentachlorophenol	ug/kg	ND	ND		30	
Phenanthrene	ug/kg	ND	ND		30	
Phenol	ug/kg	ND	ND		30	
Pyrene	ug/kg	ND	ND		30	
Pyridine	ug/kg	ND	ND		30	
2,4,6-Tribromophenol (S)	%	57	67			
2-Fluorobiphenyl (S)	%	71	71			
2-Fluorophenol (S)	%	57	62			
Nitrobenzene-d5 (S)	%	71	72			
Phenol-d6 (S)	%	68	68			
Terphenyl-d14 (S)	%	101	101			

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

QC Batch: 608843 Analysis Method: EPA 8270E
QC Batch Method: EPA 3546 Analysis Description: 8270E Solid MSSV Microwave
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

METHOD BLANK: 3206787 Matrix: Solid
Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	328	115	03/24/21 15:07	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	328	156	03/24/21 15:07	
2,4,5-Trichlorophenol	ug/kg	ND	328	150	03/24/21 15:07	
2,4,6-Trichlorophenol	ug/kg	ND	328	135	03/24/21 15:07	
2,4-Dichlorophenol	ug/kg	ND	328	128	03/24/21 15:07	
2,4-Dimethylphenol	ug/kg	ND	328	136	03/24/21 15:07	
2,4-Dinitrophenol	ug/kg	ND	1640	1010	03/24/21 15:07	
2,4-Dinitrotoluene	ug/kg	ND	328	126	03/24/21 15:07	
2,6-Dinitrotoluene	ug/kg	ND	328	120	03/24/21 15:07	
2-Chloronaphthalene	ug/kg	ND	328	130	03/24/21 15:07	
2-Chlorophenol	ug/kg	ND	328	123	03/24/21 15:07	
2-Methylnaphthalene	ug/kg	ND	328	131	03/24/21 15:07	
2-Methylphenol(o-Cresol)	ug/kg	ND	328	134	03/24/21 15:07	
2-Nitroaniline	ug/kg	ND	1640	268	03/24/21 15:07	
2-Nitrophenol	ug/kg	ND	328	142	03/24/21 15:07	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	328	132	03/24/21 15:07	
3,3'-Dichlorobenzidine	ug/kg	ND	656	222	03/24/21 15:07	IL
3-Nitroaniline	ug/kg	ND	1640	257	03/24/21 15:07	
4,6-Dinitro-2-methylphenol	ug/kg	ND	656	306	03/24/21 15:07	
4-Bromophenylphenyl ether	ug/kg	ND	328	126	03/24/21 15:07	
4-Chloro-3-methylphenol	ug/kg	ND	656	230	03/24/21 15:07	
4-Chloroaniline	ug/kg	ND	656	257	03/24/21 15:07	
4-Chlorophenylphenyl ether	ug/kg	ND	328	122	03/24/21 15:07	
4-Nitroaniline	ug/kg	ND	656	249	03/24/21 15:07	
4-Nitrophenol	ug/kg	ND	1640	634	03/24/21 15:07	
Acenaphthene	ug/kg	ND	328	115	03/24/21 15:07	
Acenaphthylene	ug/kg	ND	328	115	03/24/21 15:07	
Aniline	ug/kg	ND	328	128	03/24/21 15:07	
Anthracene	ug/kg	ND	328	107	03/24/21 15:07	
Benzo(a)anthracene	ug/kg	ND	328	109	03/24/21 15:07	
Benzo(a)pyrene	ug/kg	ND	328	113	03/24/21 15:07	
Benzo(b)fluoranthene	ug/kg	ND	328	109	03/24/21 15:07	
Benzo(g,h,i)perylene	ug/kg	ND	328	127	03/24/21 15:07	v1
Benzo(k)fluoranthene	ug/kg	ND	328	115	03/24/21 15:07	
Benzoic Acid	ug/kg	ND	1640	704	03/24/21 15:07	
Benzyl alcohol	ug/kg	ND	656	248	03/24/21 15:07	
bis(2-Chloroethoxy)methane	ug/kg	ND	328	136	03/24/21 15:07	
bis(2-Chloroethyl) ether	ug/kg	ND	328	123	03/24/21 15:07	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	328	127	03/24/21 15:07	
Butylbenzylphthalate	ug/kg	ND	328	138	03/24/21 15:07	v1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

METHOD BLANK: 3206787

Matrix: Solid

Associated Lab Samples: 92528011017, 92528011018, 92528011019, 92528011020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chrysene	ug/kg	ND	328	119	03/24/21 15:07	
Di-n-butylphthalate	ug/kg	ND	328	110	03/24/21 15:07	
Di-n-octylphthalate	ug/kg	ND	328	129	03/24/21 15:07	v1
Dibenz(a,h)anthracene	ug/kg	ND	328	126	03/24/21 15:07	
Dibenzofuran	ug/kg	ND	328	118	03/24/21 15:07	
Diethylphthalate	ug/kg	ND	328	120	03/24/21 15:07	
Dimethylphthalate	ug/kg	ND	328	119	03/24/21 15:07	
Fluoranthene	ug/kg	ND	328	112	03/24/21 15:07	
Fluorene	ug/kg	ND	328	115	03/24/21 15:07	
Hexachlorobenzene	ug/kg	ND	328	128	03/24/21 15:07	
Hexachlorocyclopentadiene	ug/kg	ND	328	188	03/24/21 15:07	
Hexachloroethane	ug/kg	ND	328	125	03/24/21 15:07	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	328	129	03/24/21 15:07	
Isophorone	ug/kg	ND	328	146	03/24/21 15:07	
N-Nitroso-di-n-propylamine	ug/kg	ND	328	123	03/24/21 15:07	
N-Nitrosodimethylamine	ug/kg	ND	328	110	03/24/21 15:07	
N-Nitrosodiphenylamine	ug/kg	ND	328	116	03/24/21 15:07	
Nitrobenzene	ug/kg	ND	328	152	03/24/21 15:07	
Pentachlorophenol	ug/kg	ND	656	321	03/24/21 15:07	
Phenanthrene	ug/kg	ND	328	107	03/24/21 15:07	
Phenol	ug/kg	ND	328	146	03/24/21 15:07	
Pyrene	ug/kg	ND	328	133	03/24/21 15:07	
Pyridine	ug/kg	ND	328	103	03/24/21 15:07	
2,4,6-Tribromophenol (S)	%	73	18-130		03/24/21 15:07	
2-Fluorobiphenyl (S)	%	79	19-130		03/24/21 15:07	
2-Fluorophenol (S)	%	79	18-130		03/24/21 15:07	
Nitrobenzene-d5 (S)	%	82	21-130		03/24/21 15:07	
Phenol-d6 (S)	%	74	18-130		03/24/21 15:07	
Terphenyl-d14 (S)	%	115	15-130		03/24/21 15:07	

LABORATORY CONTROL SAMPLE: 3206788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1660	1340	81	54-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	1660	1290	78	38-130	
2,4,5-Trichlorophenol	ug/kg	1660	1550	94	49-130	
2,4,6-Trichlorophenol	ug/kg	1660	1470	89	50-130	
2,4-Dichlorophenol	ug/kg	1660	1390	84	51-130	
2,4-Dimethylphenol	ug/kg	1660	1440	87	53-130	
2,4-Dinitrophenol	ug/kg	8280	6880	83	39-130	
2,4-Dinitrotoluene	ug/kg	1660	1510	91	53-130	
2,6-Dinitrotoluene	ug/kg	1660	1570	95	55-130	
2-Chloronaphthalene	ug/kg	1660	1520	92	48-130	
2-Chlorophenol	ug/kg	1660	1390	84	54-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3206788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	1660	1360	82	57-130	
2-Methylphenol(o-Cresol)	ug/kg	1660	1400	84	50-130	
2-Nitroaniline	ug/kg	3310	3090	93	49-130	
2-Nitrophenol	ug/kg	1660	1480	90	50-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	1660	1310	79	50-130	
3,3'-Dichlorobenzidine	ug/kg	3310	2970	90	47-130	IL
3-Nitroaniline	ug/kg	3310	3160	95	45-130	
4,6-Dinitro-2-methylphenol	ug/kg	3310	3040	92	50-142	
4-Bromophenylphenyl ether	ug/kg	1660	1540	93	55-130	
4-Chloro-3-methylphenol	ug/kg	3310	2750	83	52-130	
4-Chloroaniline	ug/kg	3310	2550	77	49-130	
4-Chlorophenylphenyl ether	ug/kg	1660	1430	86	53-130	
4-Nitroaniline	ug/kg	3310	2750	83	51-130	
4-Nitrophenol	ug/kg	8280	7050	85	40-130	
Acenaphthene	ug/kg	1660	1490	90	56-130	
Acenaphthylene	ug/kg	1660	1550	94	58-130	
Aniline	ug/kg	1660	1180	71	44-130	
Anthracene	ug/kg	1660	1520	92	60-130	
Benzo(a)anthracene	ug/kg	1660	1740	105	59-130	
Benzo(a)pyrene	ug/kg	1660	1610	97	57-130	
Benzo(b)fluoranthene	ug/kg	1660	1590	96	54-130	
Benzo(g,h,i)perylene	ug/kg	1660	1580	95	59-130	v1
Benzo(k)fluoranthene	ug/kg	1660	1590	96	54-130	
Benzoic Acid	ug/kg	8280	5680	69	19-130	
Benzyl alcohol	ug/kg	3310	2570	78	50-130	
bis(2-Chloroethoxy)methane	ug/kg	1660	1370	83	55-130	
bis(2-Chloroethyl) ether	ug/kg	1660	1410	85	53-130	
bis(2-Ethylhexyl)phthalate	ug/kg	1660	1810	109	58-130	
Butylbenzylphthalate	ug/kg	1660	1860	112	46-138	v1
Chrysene	ug/kg	1660	1740	105	57-130	
Di-n-butylphthalate	ug/kg	1660	1590	96	57-130	
Di-n-octylphthalate	ug/kg	1660	1920	116	57-130	v1
Dibenz(a,h)anthracene	ug/kg	1660	1520	92	60-130	
Dibenzofuran	ug/kg	1660	1490	90	54-130	
Diethylphthalate	ug/kg	1660	1540	93	55-130	
Dimethylphthalate	ug/kg	1660	1520	92	57-130	
Fluoranthene	ug/kg	1660	1520	92	57-130	
Fluorene	ug/kg	1660	1490	90	56-130	
Hexachlorobenzene	ug/kg	1660	1550	93	53-130	
Hexachlorocyclopentadiene	ug/kg	1660	1030	62	23-130	
Hexachloroethane	ug/kg	1660	1410	85	48-130	
Indeno(1,2,3-cd)pyrene	ug/kg	1660	1590	96	61-130	
Isophorone	ug/kg	1660	1340	81	49-130	
N-Nitroso-di-n-propylamine	ug/kg	1660	1280	77	52-130	
N-Nitrosodimethylamine	ug/kg	1660	1490	90	45-130	
N-Nitrosodiphenylamine	ug/kg	1660	1560	94	56-130	
Nitrobenzene	ug/kg	1660	1500	91	50-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

LABORATORY CONTROL SAMPLE: 3206788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Pentachlorophenol	ug/kg	3310	2690	81	33-130	
Phenanthrene	ug/kg	1660	1580	96	60-130	
Phenol	ug/kg	1660	1480	90	54-130	
Pyrene	ug/kg	1660	1800	109	61-130	
Pyridine	ug/kg	1660	1250	76	35-130	
2,4,6-Tribromophenol (S)	%			83	18-130	
2-Fluorobiphenyl (S)	%			83	19-130	
2-Fluorophenol (S)	%			84	18-130	
Nitrobenzene-d5 (S)	%			81	21-130	
Phenol-d6 (S)	%			77	18-130	
Terphenyl-d14 (S)	%			115	15-130	

MATRIX SPIKE SAMPLE: 3206789

Parameter	Units	92528011017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	ND	1960	1210	62	30-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	1960	1110	57	30-130	
2,4,5-Trichlorophenol	ug/kg	ND	1960	1620	83	26-130	
2,4,6-Trichlorophenol	ug/kg	ND	1960	1450	74	23-130	
2,4-Dichlorophenol	ug/kg	ND	1960	1220	62	29-130	
2,4-Dimethylphenol	ug/kg	ND	1960	1070	55	13-130	
2,4-Dinitrophenol	ug/kg	ND	9800	7440	76	10-131	
2,4-Dinitrotoluene	ug/kg	ND	1960	1660	85	28-130	
2,6-Dinitrotoluene	ug/kg	ND	1960	1690	86	36-130	
2-Chloronaphthalene	ug/kg	ND	1960	1400	71	27-130	
2-Chlorophenol	ug/kg	ND	1960	1190	61	29-130	
2-Methylnaphthalene	ug/kg	ND	1960	1230	63	29-130	
2-Methylphenol(o-Cresol)	ug/kg	ND	1960	1090	56	20-130	
2-Nitroaniline	ug/kg	ND	3910	3340	85	29-130	
2-Nitrophenol	ug/kg	ND	1960	1340	68	26-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	1960	1060	54	10-176	
3,3'-Dichlorobenzidine	ug/kg	ND	3910	3260	83	15-130 IL	
3-Nitroaniline	ug/kg	ND	3910	3410	87	28-130	
4,6-Dinitro-2-methylphenol	ug/kg	ND	3910	3410	87	15-132	
4-Bromophenylphenyl ether	ug/kg	ND	1960	1640	83	35-130	
4-Chloro-3-methylphenol	ug/kg	ND	3910	2770	71	30-130	
4-Chloroaniline	ug/kg	ND	3910	2340	60	28-130	
4-Chlorophenylphenyl ether	ug/kg	ND	1960	1460	75	32-130	
4-Nitroaniline	ug/kg	ND	3910	3150	80	30-130	
4-Nitrophenol	ug/kg	ND	9800	7760	79	17-130	
Acenaphthene	ug/kg	ND	1960	1490	76	29-130	
Acenaphthylene	ug/kg	ND	1960	1550	79	31-130	
Aniline	ug/kg	ND	1960	848	43	10-130	
Anthracene	ug/kg	ND	1960	1630	83	33-130	
Benzo(a)anthracene	ug/kg	ND	1960	1870	96	32-130	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497
Pace Project No.: 92528011

MATRIX SPIKE SAMPLE: 3206789		92528011017	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Benzo(a)pyrene	ug/kg	ND	1960	1800	92	32-130	
Benzo(b)fluoranthene	ug/kg	ND	1960	1620	83	33-130	
Benzo(g,h,i)perylene	ug/kg	ND	1960	2020	103	28-130	v1
Benzo(k)fluoranthene	ug/kg	ND	1960	1720	88	31-130	
Benzoic Acid	ug/kg	ND	9800	3310	34	10-130	
Benzyl alcohol	ug/kg	ND	3910	2230	57	31-130	
bis(2-Chloroethoxy)methane	ug/kg	ND	1960	1220	62	30-130	
bis(2-Chloroethyl) ether	ug/kg	ND	1960	1230	63	68-130	M1
bis(2-Ethylhexyl)phthalate	ug/kg	ND	1960	1910	98	40-130	
Butylbenzylphthalate	ug/kg	ND	1960	2000	102	40-130	v1
Chrysene	ug/kg	ND	1960	1870	95	30-130	
Di-n-butylphthalate	ug/kg	ND	1960	1700	87	41-130	
Di-n-octylphthalate	ug/kg	ND	1960	2010	102	42-130	v1
Dibenz(a,h)anthracene	ug/kg	ND	1960	2020	103	27-130	
Dibenzofuran	ug/kg	ND	1960	1540	78	32-130	
Diethylphthalate	ug/kg	ND	1960	1690	86	40-130	
Dimethylphthalate	ug/kg	ND	1960	1670	85	37-130	
Fluoranthene	ug/kg	ND	1960	1660	85	26-130	
Fluorene	ug/kg	ND	1960	1560	79	31-130	
Hexachlorobenzene	ug/kg	ND	1960	1670	85	29-130	
Hexachlorocyclopentadiene	ug/kg	ND	1960	814	42	10-130	
Hexachloroethane	ug/kg	ND	1960	1200	61	21-130	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	1960	2020	103	28-130	
Isophorone	ug/kg	ND	1960	1260	64	32-130	
N-Nitroso-di-n-propylamine	ug/kg	ND	1960	1130	57	31-130	
N-Nitrosodimethylamine	ug/kg	ND	1960	1210	62	20-130	
N-Nitrosodiphenylamine	ug/kg	ND	1960	1680	86	32-130	
Nitrobenzene	ug/kg	ND	1960	1300	66	25-130	
Pentachlorophenol	ug/kg	ND	3910	2790	71	10-130	
Phenanthrene	ug/kg	ND	1960	1730	88	34-130	
Phenol	ug/kg	ND	1960	1200	61	14-130	
Pyrene	ug/kg	ND	1960	2110	108	31-130	
Pyridine	ug/kg	ND	1960	936	48	10-130	
2,4,6-Tribromophenol (S)	%				64	18-130	
2-Fluorobiphenyl (S)	%				57	19-130	
2-Fluorophenol (S)	%				50	18-130	
Nitrobenzene-d5 (S)	%				55	21-130	
Phenol-d6 (S)	%				48	18-130	
Terphenyl-d14 (S)	%				99	15-130	

SAMPLE DUPLICATE: 3206790

Parameter	Units	92528011017 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/kg	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3206790

Parameter	Units	92528011017 Result	Dup Result	RPD	Max RPD	Qualifiers
2,4,5-Trichlorophenol	ug/kg	ND	ND		30	
2,4,6-Trichlorophenol	ug/kg	ND	ND		30	
2,4-Dichlorophenol	ug/kg	ND	ND		30	
2,4-Dimethylphenol	ug/kg	ND	ND		30	
2,4-Dinitrophenol	ug/kg	ND	ND		30	
2,4-Dinitrotoluene	ug/kg	ND	ND		30	
2,6-Dinitrotoluene	ug/kg	ND	ND		30	
2-Chloronaphthalene	ug/kg	ND	ND		30	
2-Chlorophenol	ug/kg	ND	ND		30	
2-Methylnaphthalene	ug/kg	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/kg	ND	ND		30	
2-Nitroaniline	ug/kg	ND	ND		30	
2-Nitrophenol	ug/kg	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	ND		30	
3,3'-Dichlorobenzidine	ug/kg	ND	ND		30	IL
3-Nitroaniline	ug/kg	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/kg	ND	ND		30	
4-Bromophenylphenyl ether	ug/kg	ND	ND		30	
4-Chloro-3-methylphenol	ug/kg	ND	ND		30	
4-Chloroaniline	ug/kg	ND	ND		30	
4-Chlorophenylphenyl ether	ug/kg	ND	ND		30	
4-Nitroaniline	ug/kg	ND	ND		30	
4-Nitrophenol	ug/kg	ND	ND		30	
Acenaphthene	ug/kg	ND	ND		30	
Acenaphthylene	ug/kg	ND	ND		30	
Aniline	ug/kg	ND	ND		30	
Anthracene	ug/kg	ND	ND		30	
Benzo(a)anthracene	ug/kg	ND	136J		30	
Benzo(a)pyrene	ug/kg	ND	ND		30	
Benzo(b)fluoranthene	ug/kg	ND	ND		30	
Benzo(g,h,i)perylene	ug/kg	ND	ND		30	v1
Benzo(k)fluoranthene	ug/kg	ND	ND		30	
Benzoic Acid	ug/kg	ND	ND		30	
Benzyl alcohol	ug/kg	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/kg	ND	ND		30	
bis(2-Chloroethyl) ether	ug/kg	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	ND		30	
Butylbenzylphthalate	ug/kg	ND	ND		30	v1
Chrysene	ug/kg	ND	ND		30	
Di-n-butylphthalate	ug/kg	ND	ND		30	
Di-n-octylphthalate	ug/kg	ND	ND		30	v1
Dibenz(a,h)anthracene	ug/kg	ND	ND		30	
Dibenzofuran	ug/kg	ND	ND		30	
Diethylphthalate	ug/kg	ND	ND		30	
Dimethylphthalate	ug/kg	ND	ND		30	
Fluoranthene	ug/kg	ND	327J		30	
Fluorene	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

SAMPLE DUPLICATE: 3206790

Parameter	Units	92528011017 Result	Dup Result	RPD	Max RPD	Qualifiers
Hexachlorobenzene	ug/kg	ND	ND		30	
Hexachlorocyclopentadiene	ug/kg	ND	ND		30	
Hexachloroethane	ug/kg	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	ND		30	
Isophorone	ug/kg	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/kg	ND	ND		30	
N-Nitrosodimethylamine	ug/kg	ND	ND		30	
N-Nitrosodiphenylamine	ug/kg	ND	ND		30	
Nitrobenzene	ug/kg	ND	ND		30	
Pentachlorophenol	ug/kg	ND	ND		30	
Phenanthrene	ug/kg	ND	329J		30	
Phenol	ug/kg	ND	ND		30	
Pyrene	ug/kg	ND	311J		30	
Pyridine	ug/kg	ND	ND		30	
2,4,6-Tribromophenol (S)	%	60	62			
2-Fluorobiphenyl (S)	%	62	38			
2-Fluorophenol (S)	%	57	64			
Nitrobenzene-d5 (S)	%	63	64			
Phenol-d6 (S)	%	55	62			
Terphenyl-d14 (S)	%	90	50			

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QUALITY CONTROL DATA

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

QC Batch:	607298	Analysis Method:	SW-846
QC Batch Method:	SW-846	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92528011001, 92528011002, 92528011003, 92528011004, 92528011005, 92528011006, 92528011007, 92528011008, 92528011009, 92528011010, 92528011011, 92528011012, 92528011013, 92528011014, 92528011015, 92528011016, 92528011017, 92528011018, 92528011019, 92528011020

SAMPLE DUPLICATE: 3199386

Parameter	Units	92528011001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.3	14.0	2	25	N2

SAMPLE DUPLICATE: 3199387

Parameter	Units	92528011020 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	33.1	37.1	11	25	N2

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C8	Result may be biased high due to carryover from previously analyzed sample.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
IL	This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92528011001	RI-SB-13 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011002	RI-SB-13 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011003	RI-SB-14 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011004	RI-SB-14 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011005	RI-SB-15 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011006	RI-SB-15 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011007	RI-SB-16 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011008	RI-SB-16 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011009	RI-SB-17 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011010	RI-SB-17 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011011	RI-SB-18 (0.5-1.0)	EPA 3546	607315	EPA 8270E	607499
92528011012	RI-SB-18 (5.5-6.0)	EPA 3546	607315	EPA 8270E	607499
92528011017	RI-SB-23 (0.5-1.0)	EPA 3546	608843	EPA 8270E	609141
92528011018	RI-SB-23 (5.5-6.0)	EPA 3546	608843	EPA 8270E	609141
92528011019	RI-SB-24 (0.5-1.0)	EPA 3546	608843	EPA 8270E	609141
92528011020	RI-SB-24 (5.5-6.0)	EPA 3546	608843	EPA 8270E	609141
92528011021	TRIP BLANK	EPA 8260D	607594		
92528011001	RI-SB-13 (0.5-1.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011002	RI-SB-13 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011003	RI-SB-14 (0.5-1.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011004	RI-SB-14 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011005	RI-SB-15 (0.5-1.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011006	RI-SB-15 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011007	RI-SB-16 (0.5-1.0)	EPA 5035A/5030B	607623	EPA 8260D	607658
92528011008	RI-SB-16 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011009	RI-SB-17 (0.5-1.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011010	RI-SB-17 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011011	RI-SB-18 (0.5-1.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011012	RI-SB-18 (5.5-6.0)	EPA 5035A/5030B	607356	EPA 8260D	607409
92528011017	RI-SB-23 (0.5-1.0)	EPA 5035A/5030B	608883	EPA 8260D	608896
92528011018	RI-SB-23 (5.5-6.0)	EPA 5035A/5030B	608883	EPA 8260D	608896
92528011019	RI-SB-24 (0.5-1.0)	EPA 5035A/5030B	608883	EPA 8260D	608896
92528011020	RI-SB-24 (5.5-6.0)	EPA 5035A/5030B	608883	EPA 8260D	608896
92528011001	RI-SB-13 (0.5-1.0)	SW-846	607298		
92528011002	RI-SB-13 (5.5-6.0)	SW-846	607298		
92528011003	RI-SB-14 (0.5-1.0)	SW-846	607298		
92528011004	RI-SB-14 (5.5-6.0)	SW-846	607298		
92528011005	RI-SB-15 (0.5-1.0)	SW-846	607298		
92528011006	RI-SB-15 (5.5-6.0)	SW-846	607298		
92528011007	RI-SB-16 (0.5-1.0)	SW-846	607298		
92528011008	RI-SB-16 (5.5-6.0)	SW-846	607298		
92528011009	RI-SB-17 (0.5-1.0)	SW-846	607298		
92528011010	RI-SB-17 (5.5-6.0)	SW-846	607298		
92528011011	RI-SB-18 (0.5-1.0)	SW-846	607298		
92528011012	RI-SB-18 (5.5-6.0)	SW-846	607298		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BRAMLETTE J21030497

Pace Project No.: 92528011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92528011013	RI-SB-21 (0.5-1.0)	SW-846	607298		
92528011014	RI-SB-21 (5.5-6.0)	SW-846	607298		
92528011015	RI-SB-22 (0.5-1.0)	SW-846	607298		
92528011016	RI-SB-22 (5.5-6.0)	SW-846	607298		
92528011017	RI-SB-23 (0.5-1.0)	SW-846	607298		
92528011018	RI-SB-23 (5.5-6.0)	SW-846	607298		
92528011019	RI-SB-24 (0.5-1.0)	SW-846	607298		
92528011020	RI-SB-24 (5.5-6.0)	SW-846	607298		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Systera

Project #: **WO# : 92528011**

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____



Date/Initials Person Examining Contents: 9/26/11

Custody Seal Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: A3T071 Type of Ice: Wet Blue None

Cooler Temp: 2.1/3.8/5.8 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 2.1/3.8/5.8/5.1

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>3 Day TAT</u>
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9. <u>Additional samples not listed on COC</u>
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO# : 92528011

PM: KLH1 Due Date: 03/19/21

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: 92-Duke Ener

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples						
Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Sample Receiving Non-Conformance Form (NCF)

Date: <u>3/16/21</u>	Evaluated by: <u>Chris Deroc...</u>
Client: <u>Synterra</u>	

A **WO# : 92528011**

PM: KLH1 Due Date: 03/19/21

CLIENT: 92-Duke Ener

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

Collection date/time missing or incorrect	Analyses or analytes: missing or clarification needed	<input checked="" type="checkbox"/> Samples listed on COC do not match samples received (missing, additional, etc.)
Sample IDs on COC do not match sample labels	Required trip blanks were not received	Required signatures are missing

Comments/Details/Other Issues not listed above: *Did not receive samples listed on COC 2062.*

Rec'd the Following Samples not listed on COC

<i>RI-SB-21-50-0.5 @ 15:05 3/15</i>	<i>RI-SB-22-50-5.5 @ 15:30 3/15</i>	<i>RI-SB-24-50-0.5 @ 15:55 3/15</i>
<i>RI-SB-21-50-5.5 @ 15:10 3/15</i>	<i>RI-SB-23-50-0.5 @ 15:35 3/15</i>	<i>RI-SB-29-50-5.5 @ 16:00 3/15</i>
<i>RI-SB-22-50-0.5 @ 15:25 3/15</i>	<i>RI-SB-23-50-5.5 @ 15:40 3/15</i>	

3. Sample integrity issues: check applicable issues below and add details where appropriate:

Samples: Past holding time	Samples: Condition needs to be brought to lab personnel's attention (details below)	Preservation: Improper
Samples: Not field filtered	Containers: Broken or compromised	Temperature: not within acceptance criteria (typically 0-6C)
Samples: Insufficient volume received	Containers: Incorrect	Temperature: Samples arrived frozen
Samples: Cooler damaged or compromised	Custody Seals: Missing or compromised on samples, trip blanks or coolers	Vials received with improper headspace
Samples: contain chlorine or sulfides	Packing Material: Insufficient/Improper	Other:

Comments/Details:

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:
PM Initials:	Date/Time:

Client Comments/Instructions:



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: Synterra
 Address: 148 River Street
 Suite 220, Greenville, SC 29601
 Phone: (803) 429-3668 Fax: [blank]
 Requested Due Date: 3 Day TAT

Section B
 Report Project Information:
 Report To: Heather Smith
 Copy To: [blank]
 Purchase Order #: [blank]
 Project Name: Barnette Soil Sampling
 Project #: 50,2731,00,032

Section C
 Invoice Information:
 Attention: [blank]
 Company Name: [blank]
 Address: [blank]
 Pace Project Manager: kevin.herring@paceabls.com
 Pace Profile #: 7754

Regulatory Agency: [blank]
 State / Location: SC

Page: 1 of 3

ITEM #	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
					START DATE TIME	END DATE TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3					Methanol	Other
1	RI-SB-13-50-0.5-1.0-20210315	6L	6	3/15/21	1035	---	4	X	X	X	X	X	X	X	X	X	X			
2	RI-SR-13-50-5.5-6.0-20210315	6L	6	3/15/21	1035	---	4	X	X	X	X	X	X	X	X	X	X			
3	RI-SB-14-50-0.5-1.0-20210315	6L	6	3/15/21	1040	---	4	X	X	X	X	X	X	X	X	X	X			
4	RI-SB-14-50-5.5-6.0-20210315	6L	6	3/15/21	1040	---	4	X	X	X	X	X	X	X	X	X	X			
5	RI-SB-15-50-0.5-1.0-20210315	6L	6	3/15/21	1130	---	4	X	X	X	X	X	X	X	X	X	X			
6	RI-SB-15-50-5.5-6.0-20210315	6L	6	3/15/21	1135	---	4	X	X	X	X	X	X	X	X	X	X			
7	RI-SB-16-50-0.5-1.0-20210315	6L	6	3/15/21	1145	---	4	X	X	X	X	X	X	X	X	X	X			
8	RI-SB-16-50-5.5-6.0-20210315	6L	6	3/15/21	1150	---	4	X	X	X	X	X	X	X	X	X	X			
9	RI-SB-17-50-0.5-1.0-20210315	6L	6	3/15/21	1330	---	4	X	X	X	X	X	X	X	X	X	X			
10	RI-SB-17-50-5.5-6.0-20210315	6L	6	3/15/21	1335	---	4	X	X	X	X	X	X	X	X	X	X			
11	RI-SB-18-50-0.5-1.0-20210315	6L	6	3/15/21	1345	---	4	X	X	X	X	X	X	X	X	X	X			
12	RI-SB-18-50-5.5-6.0-20210315	6L	6	3/15/21	1350	---	4	X	X	X	X	X	X	X	X	X	X			

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		Tom King / 12-AP	3/15/21	1700	Synterra Cold Storage	3/15/21	1700	
		Synterra Cold Storage	3/16/21	0930	Tom King / 12-AP	3/16/21	0930	
		Tom King / 12-AP	3/16/21	1000	Tom King / 12-AP	3/16/21	1000	
		Tyler Wooten / 12-AP	3/16/21	1145	OC / 12-AP	3/16/21	1145	

SAMPLER NAME AND SIGNATURE: [blank]

PRINT Name of SAMPLER: Tom King

SIGNATURE of SAMPLER: [Signature]

DATE Signed: 3/16/21

TEMP in C: [blank]

Received on Ice (Y/N): [blank]

Custody Sealed Cooler (Y/N): [blank]

Samples Intact (Y/N): [blank]

March 22, 2021

Program Manager
Duke Energy
13339 Hagers Ferry Road
Bldg. 7405 MG30A2
Huntersville, NC 28078

RE: Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Dear Program Manager:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Tom King
Amber Lipsky
Program Manager, Duke Energy
Mike Mastbaum
Todd Plating, Synterra
Rick Powell
B. Russo
Heather Smith



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92528353001	RI-SB-19_SO_0.5-1.0_20210315	Solid	03/15/21 14:15	03/17/21 10:45
92528353002	RI-SB-19_SO_5.5-6.0_20210315	Solid	03/15/21 14:20	03/17/21 10:45
92528353003	RI-SB-20_SO_0.5-1.0_20210315	Solid	03/15/21 14:30	03/17/21 10:45
92528353004	RI-SB-20_SO_5.5-6.0_20210315	Solid	03/15/21 14:35	03/17/21 10:45
92528353005	TRIP BLANK	Water	03/17/21 00:00	03/17/21 10:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92528353001	RI-SB-19_SO_0.5-1.0_20210315	EPA 8270E	BPJ	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528353002	RI-SB-19_SO_5.5-6.0_20210315	EPA 8270E	BPJ	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528353003	RI-SB-20_SO_0.5-1.0_20210315	EPA 8270E	BPJ	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528353004	RI-SB-20_SO_5.5-6.0_20210315	EPA 8270E	BPJ	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92528353005	TRIP BLANK	EPA 8260D	PM1	62	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92528353001	RI-SB-19_SO_0.5-1.0_20210315					
EPA 8260D	Acetone	97.3J	ug/kg	146	03/19/21 23:03	
EPA 8260D	2-Butanone (MEK)	47.6J	ug/kg	146	03/19/21 23:03	
EPA 8260D	Naphthalene	6.4J	ug/kg	7.3	03/19/21 23:03	
EPA 8260D	Toluene	5.7J	ug/kg	7.3	03/19/21 23:03	
SW-846	Percent Moisture	22.0	%	0.10	03/18/21 15:17	N2
92528353002	RI-SB-19_SO_5.5-6.0_20210315					
EPA 8260D	Ethylbenzene	9.2J	ug/kg	16.9	03/19/21 01:02	
EPA 8260D	Xylene (Total)	89.9	ug/kg	33.7	03/19/21 01:02	
EPA 8260D	m&p-Xylene	65.9	ug/kg	33.7	03/19/21 01:02	
EPA 8260D	o-Xylene	24.0	ug/kg	16.9	03/19/21 01:02	
SW-846	Percent Moisture	22.3	%	0.10	03/18/21 15:17	N2
92528353003	RI-SB-20_SO_0.5-1.0_20210315					
EPA 8260D	Toluene	14.1	ug/kg	6.6	03/19/21 01:55	
SW-846	Percent Moisture	13.2	%	0.10	03/18/21 15:17	N2
92528353004	RI-SB-20_SO_5.5-6.0_20210315					
EPA 8260D	Toluene	5.0J	ug/kg	6.3	03/19/21 01:20	
SW-846	Percent Moisture	18.9	%	0.10	03/18/21 15:17	N2

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Method: EPA 8270E
Description: 8270E MSSV Microwave
Client: Duke Energy
Date: March 22, 2021

General Information:

4 samples were analyzed for EPA 8270E by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607492

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3200335)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- DUP (Lab ID: 3200338)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- LCS (Lab ID: 3200336)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- MS (Lab ID: 3200337)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- RI-SB-19_SO_0.5-1.0_20210315 (Lab ID: 92528353001)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- RI-SB-19_SO_5.5-6.0_20210315 (Lab ID: 92528353002)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate
- RI-SB-20_SO_0.5-1.0_20210315 (Lab ID: 92528353003)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Method: EPA 8270E

Description: 8270E MSSV Microwave

Client: Duke Energy

Date: March 22, 2021

QC Batch: 607492

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- Butylbenzylphthalate
- Di-n-octylphthalate
- bis(2-Ethylhexyl)phthalate
- RI-SB-20_SO_5.5-6.0_20210315 (Lab ID: 92528353004)
 - Butylbenzylphthalate
 - Di-n-octylphthalate
 - bis(2-Ethylhexyl)phthalate

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607492

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92527967001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3200337)
 - Benzoic Acid

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Method: EPA 8260D
Description: 8260 MSV Low Level SC
Client: Duke Energy
Date: March 22, 2021

General Information:

1 sample was analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

QC Batch: 608197

IK: The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.

- BLANK (Lab ID: 3204047)
 - Bromoform
- LCS (Lab ID: 3204048)
 - Bromoform
- MS (Lab ID: 3204049)
 - Bromoform
- MSD (Lab ID: 3204050)
 - Bromoform
- TRIP BLANK (Lab ID: 92528353005)
 - Bromoform

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Method: EPA 8260D
Description: 8260D/5035A/5030B SC Volatiles
Client: Duke Energy
Date: March 22, 2021

General Information:

4 samples were analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607623

IK: The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.

- BLANK (Lab ID: 3200879)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- DUP (Lab ID: 3200881)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- LCS (Lab ID: 3200880)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- MS (Lab ID: 3200882)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-19_SO_5.5-6.0_20210315 (Lab ID: 92528353002)
 - Bromomethane
 - Hexachloro-1,3-butadiene
- RI-SB-20_SO_5.5-6.0_20210315 (Lab ID: 92528353004)
 - Hexachloro-1,3-butadiene

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607623

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3200879)
 - Bromomethane
- DUP (Lab ID: 3200881)
 - Bromomethane
- LCS (Lab ID: 3200880)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: March 22, 2021

QC Batch: 607623

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- Bromomethane
- MS (Lab ID: 3200882)
 - Bromomethane
- RI-SB-19_SO_5.5-6.0_20210315 (Lab ID: 92528353002)
 - Bromomethane

v2: The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.

- BLANK (Lab ID: 3200879)
 - tert-Butylbenzene
- DUP (Lab ID: 3200881)
 - tert-Butylbenzene
- LCS (Lab ID: 3200880)
 - tert-Butylbenzene
- MS (Lab ID: 3200882)
 - tert-Butylbenzene
- RI-SB-19_SO_5.5-6.0_20210315 (Lab ID: 92528353002)
 - tert-Butylbenzene
- RI-SB-20_SO_5.5-6.0_20210315 (Lab ID: 92528353004)
 - tert-Butylbenzene

QC Batch: 608035

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3203111)
 - Bromomethane
- DUP (Lab ID: 3203113)
 - Bromomethane
- LCS (Lab ID: 3203112)
 - Bromomethane
- MS (Lab ID: 3203114)
 - Bromomethane
- RI-SB-19_SO_0.5-1.0_20210315 (Lab ID: 92528353001)
 - Bromomethane

v3: The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

- MS (Lab ID: 3203114)
 - tert-Butylbenzene

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: March 22, 2021

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 607623

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3200880)
- Bromomethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607623

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92528353002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3200882)
- Chloromethane

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_0.5-1.0_20210315 **Lab ID:** 92528353001 **Collected:** 03/15/21 14:15 **Received:** 03/17/21 10:45 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	429	151	1	03/18/21 10:18	03/18/21 20:49	83-32-9	
Acenaphthylene	ND	ug/kg	429	151	1	03/18/21 10:18	03/18/21 20:49	208-96-8	
Aniline	ND	ug/kg	429	168	1	03/18/21 10:18	03/18/21 20:49	62-53-3	
Anthracene	ND	ug/kg	429	140	1	03/18/21 10:18	03/18/21 20:49	120-12-7	
Benzo(a)anthracene	ND	ug/kg	429	143	1	03/18/21 10:18	03/18/21 20:49	56-55-3	
Benzo(b)fluoranthene	ND	ug/kg	429	143	1	03/18/21 10:18	03/18/21 20:49	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	429	166	1	03/18/21 10:18	03/18/21 20:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	429	151	1	03/18/21 10:18	03/18/21 20:49	207-08-9	
Benzoic Acid	ND	ug/kg	2140	921	1	03/18/21 10:18	03/18/21 20:49	65-85-0	
Benzyl alcohol	ND	ug/kg	857	325	1	03/18/21 10:18	03/18/21 20:49	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	429	165	1	03/18/21 10:18	03/18/21 20:49	101-55-3	
Butylbenzylphthalate	ND	ug/kg	429	181	1	03/18/21 10:18	03/18/21 20:49	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	857	301	1	03/18/21 10:18	03/18/21 20:49	59-50-7	
4-Chloroaniline	ND	ug/kg	857	336	1	03/18/21 10:18	03/18/21 20:49	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	429	178	1	03/18/21 10:18	03/18/21 20:49	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	429	161	1	03/18/21 10:18	03/18/21 20:49	111-44-4	
2-Chloronaphthalene	ND	ug/kg	429	170	1	03/18/21 10:18	03/18/21 20:49	91-58-7	
2-Chlorophenol	ND	ug/kg	429	161	1	03/18/21 10:18	03/18/21 20:49	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	429	160	1	03/18/21 10:18	03/18/21 20:49	7005-72-3	
Chrysene	ND	ug/kg	429	156	1	03/18/21 10:18	03/18/21 20:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	429	165	1	03/18/21 10:18	03/18/21 20:49	53-70-3	
Dibenzofuran	ND	ug/kg	429	155	1	03/18/21 10:18	03/18/21 20:49	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	857	290	1	03/18/21 10:18	03/18/21 20:49	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	429	168	1	03/18/21 10:18	03/18/21 20:49	120-83-2	
Diethylphthalate	ND	ug/kg	429	157	1	03/18/21 10:18	03/18/21 20:49	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	429	178	1	03/18/21 10:18	03/18/21 20:49	105-67-9	
Dimethylphthalate	ND	ug/kg	429	156	1	03/18/21 10:18	03/18/21 20:49	131-11-3	
Di-n-butylphthalate	ND	ug/kg	429	144	1	03/18/21 10:18	03/18/21 20:49	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	857	400	1	03/18/21 10:18	03/18/21 20:49	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2140	1320	1	03/18/21 10:18	03/18/21 20:49	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	429	165	1	03/18/21 10:18	03/18/21 20:49	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	429	157	1	03/18/21 10:18	03/18/21 20:49	606-20-2	
Di-n-octylphthalate	ND	ug/kg	429	169	1	03/18/21 10:18	03/18/21 20:49	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	429	166	1	03/18/21 10:18	03/18/21 20:49	117-81-7	v1
Fluoranthene	ND	ug/kg	429	147	1	03/18/21 10:18	03/18/21 20:49	206-44-0	
Fluorene	ND	ug/kg	429	151	1	03/18/21 10:18	03/18/21 20:49	86-73-7	
Hexachlorobenzene	ND	ug/kg	429	168	1	03/18/21 10:18	03/18/21 20:49	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	429	245	1	03/18/21 10:18	03/18/21 20:49	77-47-4	
Hexachloroethane	ND	ug/kg	429	164	1	03/18/21 10:18	03/18/21 20:49	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	429	169	1	03/18/21 10:18	03/18/21 20:49	193-39-5	
Isophorone	ND	ug/kg	429	191	1	03/18/21 10:18	03/18/21 20:49	78-59-1	
1-Methylnaphthalene	ND	ug/kg	429	151	1	03/18/21 10:18	03/18/21 20:49	90-12-0	
2-Methylnaphthalene	ND	ug/kg	429	171	1	03/18/21 10:18	03/18/21 20:49	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_0.5-1.0_20210315 **Lab ID:** 92528353001 Collected: 03/15/21 14:15 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	429	175	1	03/18/21 10:18	03/18/21 20:49	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	429	173	1	03/18/21 10:18	03/18/21 20:49	15831-10-4	
2-Nitroaniline	ND	ug/kg	2140	351	1	03/18/21 10:18	03/18/21 20:49	88-74-4	
3-Nitroaniline	ND	ug/kg	2140	336	1	03/18/21 10:18	03/18/21 20:49	99-09-2	
4-Nitroaniline	ND	ug/kg	857	326	1	03/18/21 10:18	03/18/21 20:49	100-01-6	
Nitrobenzene	ND	ug/kg	429	199	1	03/18/21 10:18	03/18/21 20:49	98-95-3	
2-Nitrophenol	ND	ug/kg	429	186	1	03/18/21 10:18	03/18/21 20:49	88-75-5	
4-Nitrophenol	ND	ug/kg	2140	829	1	03/18/21 10:18	03/18/21 20:49	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	429	144	1	03/18/21 10:18	03/18/21 20:49	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	429	161	1	03/18/21 10:18	03/18/21 20:49	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	429	152	1	03/18/21 10:18	03/18/21 20:49	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	429	204	1	03/18/21 10:18	03/18/21 20:49	108-60-1	
Pentachlorophenol	ND	ug/kg	857	420	1	03/18/21 10:18	03/18/21 20:49	87-86-5	
Phenanthrene	ND	ug/kg	429	140	1	03/18/21 10:18	03/18/21 20:49	85-01-8	
Phenol	ND	ug/kg	429	191	1	03/18/21 10:18	03/18/21 20:49	108-95-2	
Pyrene	ND	ug/kg	429	174	1	03/18/21 10:18	03/18/21 20:49	129-00-0	
Pyridine	ND	ug/kg	429	135	1	03/18/21 10:18	03/18/21 20:49	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	429	196	1	03/18/21 10:18	03/18/21 20:49	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	429	177	1	03/18/21 10:18	03/18/21 20:49	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	66	%	21-130		1	03/18/21 10:18	03/18/21 20:49	4165-60-0	
2-Fluorobiphenyl (S)	39	%	19-130		1	03/18/21 10:18	03/18/21 20:49	321-60-8	
Terphenyl-d14 (S)	65	%	15-130		1	03/18/21 10:18	03/18/21 20:49	1718-51-0	
Phenol-d6 (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 20:49	13127-88-3	
2-Fluorophenol (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 20:49	367-12-4	
2,4,6-Tribromophenol (S)	63	%	18-130		1	03/18/21 10:18	03/18/21 20:49	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	97.3J	ug/kg	146	46.8	1	03/19/21 12:09	03/19/21 23:03	67-64-1	
Benzene	ND	ug/kg	7.3	2.9	1	03/19/21 12:09	03/19/21 23:03	71-43-2	
Bromobenzene	ND	ug/kg	7.3	2.4	1	03/19/21 12:09	03/19/21 23:03	108-86-1	
Bromochloromethane	ND	ug/kg	7.3	2.2	1	03/19/21 12:09	03/19/21 23:03	74-97-5	
Bromodichloromethane	ND	ug/kg	7.3	2.8	1	03/19/21 12:09	03/19/21 23:03	75-27-4	
Bromoform	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	75-25-2	
Bromomethane	ND	ug/kg	14.6	11.5	1	03/19/21 12:09	03/19/21 23:03	74-83-9	v1
2-Butanone (MEK)	47.6J	ug/kg	146	35.0	1	03/19/21 12:09	03/19/21 23:03	78-93-3	
n-Butylbenzene	ND	ug/kg	7.3	3.4	1	03/19/21 12:09	03/19/21 23:03	104-51-8	
sec-Butylbenzene	ND	ug/kg	7.3	3.2	1	03/19/21 12:09	03/19/21 23:03	135-98-8	
tert-Butylbenzene	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	98-06-6	
Carbon tetrachloride	ND	ug/kg	7.3	2.7	1	03/19/21 12:09	03/19/21 23:03	56-23-5	
Chlorobenzene	ND	ug/kg	7.3	1.4	1	03/19/21 12:09	03/19/21 23:03	108-90-7	
Chloroethane	ND	ug/kg	14.6	5.6	1	03/19/21 12:09	03/19/21 23:03	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_0.5-1.0_20210315 Lab ID: 92528353001 Collected: 03/15/21 14:15 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	7.3	4.4	1	03/19/21 12:09	03/19/21 23:03	67-66-3	
Chloromethane	ND	ug/kg	14.6	6.1	1	03/19/21 12:09	03/19/21 23:03	74-87-3	
2-Chlorotoluene	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	95-49-8	
4-Chlorotoluene	ND	ug/kg	7.3	1.3	1	03/19/21 12:09	03/19/21 23:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.3	2.8	1	03/19/21 12:09	03/19/21 23:03	96-12-8	
Dibromochloromethane	ND	ug/kg	7.3	4.1	1	03/19/21 12:09	03/19/21 23:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	7.3	3.2	1	03/19/21 12:09	03/19/21 23:03	106-93-4	
Dibromomethane	ND	ug/kg	7.3	1.6	1	03/19/21 12:09	03/19/21 23:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	7.3	2.3	1	03/19/21 12:09	03/19/21 23:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	7.3	1.9	1	03/19/21 12:09	03/19/21 23:03	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	14.6	3.2	1	03/19/21 12:09	03/19/21 23:03	75-71-8	
1,1-Dichloroethane	ND	ug/kg	7.3	3.0	1	03/19/21 12:09	03/19/21 23:03	75-34-3	
1,2-Dichloroethane	ND	ug/kg	7.3	4.8	1	03/19/21 12:09	03/19/21 23:03	107-06-2	
1,1-Dichloroethene	ND	ug/kg	7.3	3.0	1	03/19/21 12:09	03/19/21 23:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	7.3	2.5	1	03/19/21 12:09	03/19/21 23:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	156-60-5	
1,2-Dichloropropane	ND	ug/kg	7.3	2.2	1	03/19/21 12:09	03/19/21 23:03	78-87-5	
1,3-Dichloropropane	ND	ug/kg	7.3	2.3	1	03/19/21 12:09	03/19/21 23:03	142-28-9	
2,2-Dichloropropane	ND	ug/kg	7.3	2.4	1	03/19/21 12:09	03/19/21 23:03	594-20-7	
1,1-Dichloropropene	ND	ug/kg	7.3	3.5	1	03/19/21 12:09	03/19/21 23:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	7.3	2.0	1	03/19/21 12:09	03/19/21 23:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	7.3	2.5	1	03/19/21 12:09	03/19/21 23:03	10061-02-6	
Diisopropyl ether	ND	ug/kg	7.3	2.0	1	03/19/21 12:09	03/19/21 23:03	108-20-3	
Ethylbenzene	ND	ug/kg	7.3	3.4	1	03/19/21 12:09	03/19/21 23:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	14.6	11.9	1	03/19/21 12:09	03/19/21 23:03	87-68-3	
2-Hexanone	ND	ug/kg	72.9	7.0	1	03/19/21 12:09	03/19/21 23:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	7.3	2.5	1	03/19/21 12:09	03/19/21 23:03	98-82-8	
p-Isopropyltoluene	ND	ug/kg	7.3	3.6	1	03/19/21 12:09	03/19/21 23:03	99-87-6	
Methylene Chloride	ND	ug/kg	29.2	20.0	1	03/19/21 12:09	03/19/21 23:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	72.9	7.0	1	03/19/21 12:09	03/19/21 23:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	7.3	2.7	1	03/19/21 12:09	03/19/21 23:03	1634-04-4	
Naphthalene	6.4J	ug/kg	7.3	3.8	1	03/19/21 12:09	03/19/21 23:03	91-20-3	
n-Propylbenzene	ND	ug/kg	7.3	2.6	1	03/19/21 12:09	03/19/21 23:03	103-65-1	
Styrene	ND	ug/kg	7.3	1.9	1	03/19/21 12:09	03/19/21 23:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	7.3	2.8	1	03/19/21 12:09	03/19/21 23:03	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	7.3	1.9	1	03/19/21 12:09	03/19/21 23:03	79-34-5	
Tetrachloroethene	ND	ug/kg	7.3	2.3	1	03/19/21 12:09	03/19/21 23:03	127-18-4	
Toluene	5.7J	ug/kg	7.3	2.1	1	03/19/21 12:09	03/19/21 23:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	7.3	5.9	1	03/19/21 12:09	03/19/21 23:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	7.3	6.1	1	03/19/21 12:09	03/19/21 23:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	7.3	3.8	1	03/19/21 12:09	03/19/21 23:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	7.3	2.4	1	03/19/21 12:09	03/19/21 23:03	79-00-5	

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Sample: RI-SB-19_SO_0.5-1.0_20210315 **Lab ID:** 92528353001 Collected: 03/15/21 14:15 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichloroethene	ND	ug/kg	7.3	1.9	1	03/19/21 12:09	03/19/21 23:03	79-01-6	
Trichlorofluoromethane	ND	ug/kg	7.3	4.0	1	03/19/21 12:09	03/19/21 23:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	7.3	3.7	1	03/19/21 12:09	03/19/21 23:03	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	7.3	2.0	1	03/19/21 12:09	03/19/21 23:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	7.3	2.5	1	03/19/21 12:09	03/19/21 23:03	108-67-8	
Vinyl acetate	ND	ug/kg	72.9	5.3	1	03/19/21 12:09	03/19/21 23:03	108-05-4	
Vinyl chloride	ND	ug/kg	14.6	3.7	1	03/19/21 12:09	03/19/21 23:03	75-01-4	
Xylene (Total)	ND	ug/kg	14.6	4.2	1	03/19/21 12:09	03/19/21 23:03	1330-20-7	
m&p-Xylene	ND	ug/kg	14.6	5.0	1	03/19/21 12:09	03/19/21 23:03	179601-23-1	
o-Xylene	ND	ug/kg	7.3	3.2	1	03/19/21 12:09	03/19/21 23:03	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		1	03/19/21 12:09	03/19/21 23:03	2037-26-5	
4-Bromofluorobenzene (S)	93	%	69-134		1	03/19/21 12:09	03/19/21 23:03	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1	03/19/21 12:09	03/19/21 23:03	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	22.0	%	0.10	0.10	1		03/18/21 15:17		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_5.5-6.0_20210315 **Lab ID:** 92528353002 **Collected:** 03/15/21 14:20 **Received:** 03/17/21 10:45 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	420	148	1	03/18/21 10:18	03/18/21 21:17	83-32-9	
Acenaphthylene	ND	ug/kg	420	148	1	03/18/21 10:18	03/18/21 21:17	208-96-8	
Aniline	ND	ug/kg	420	164	1	03/18/21 10:18	03/18/21 21:17	62-53-3	
Anthracene	ND	ug/kg	420	138	1	03/18/21 10:18	03/18/21 21:17	120-12-7	
Benzo(a)anthracene	ND	ug/kg	420	140	1	03/18/21 10:18	03/18/21 21:17	56-55-3	
Benzo(b)fluoranthene	ND	ug/kg	420	140	1	03/18/21 10:18	03/18/21 21:17	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	420	163	1	03/18/21 10:18	03/18/21 21:17	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	420	148	1	03/18/21 10:18	03/18/21 21:17	207-08-9	
Benzoic Acid	ND	ug/kg	2100	903	1	03/18/21 10:18	03/18/21 21:17	65-85-0	
Benzyl alcohol	ND	ug/kg	841	318	1	03/18/21 10:18	03/18/21 21:17	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	420	162	1	03/18/21 10:18	03/18/21 21:17	101-55-3	
Butylbenzylphthalate	ND	ug/kg	420	177	1	03/18/21 10:18	03/18/21 21:17	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	841	296	1	03/18/21 10:18	03/18/21 21:17	59-50-7	
4-Chloroaniline	ND	ug/kg	841	330	1	03/18/21 10:18	03/18/21 21:17	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	420	175	1	03/18/21 10:18	03/18/21 21:17	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	420	158	1	03/18/21 10:18	03/18/21 21:17	111-44-4	
2-Chloronaphthalene	ND	ug/kg	420	167	1	03/18/21 10:18	03/18/21 21:17	91-58-7	
2-Chlorophenol	ND	ug/kg	420	158	1	03/18/21 10:18	03/18/21 21:17	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	420	157	1	03/18/21 10:18	03/18/21 21:17	7005-72-3	
Chrysene	ND	ug/kg	420	153	1	03/18/21 10:18	03/18/21 21:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	420	162	1	03/18/21 10:18	03/18/21 21:17	53-70-3	
Dibenzofuran	ND	ug/kg	420	152	1	03/18/21 10:18	03/18/21 21:17	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	841	284	1	03/18/21 10:18	03/18/21 21:17	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	420	164	1	03/18/21 10:18	03/18/21 21:17	120-83-2	
Diethylphthalate	ND	ug/kg	420	154	1	03/18/21 10:18	03/18/21 21:17	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	420	175	1	03/18/21 10:18	03/18/21 21:17	105-67-9	
Dimethylphthalate	ND	ug/kg	420	153	1	03/18/21 10:18	03/18/21 21:17	131-11-3	
Di-n-butylphthalate	ND	ug/kg	420	141	1	03/18/21 10:18	03/18/21 21:17	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	841	392	1	03/18/21 10:18	03/18/21 21:17	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2100	1300	1	03/18/21 10:18	03/18/21 21:17	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	420	162	1	03/18/21 10:18	03/18/21 21:17	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	420	154	1	03/18/21 10:18	03/18/21 21:17	606-20-2	
Di-n-octylphthalate	ND	ug/kg	420	166	1	03/18/21 10:18	03/18/21 21:17	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	420	163	1	03/18/21 10:18	03/18/21 21:17	117-81-7	v1
Fluoranthene	ND	ug/kg	420	144	1	03/18/21 10:18	03/18/21 21:17	206-44-0	
Fluorene	ND	ug/kg	420	148	1	03/18/21 10:18	03/18/21 21:17	86-73-7	
Hexachlorobenzene	ND	ug/kg	420	164	1	03/18/21 10:18	03/18/21 21:17	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	420	241	1	03/18/21 10:18	03/18/21 21:17	77-47-4	
Hexachloroethane	ND	ug/kg	420	160	1	03/18/21 10:18	03/18/21 21:17	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	420	166	1	03/18/21 10:18	03/18/21 21:17	193-39-5	
Isophorone	ND	ug/kg	420	187	1	03/18/21 10:18	03/18/21 21:17	78-59-1	
1-Methylnaphthalene	ND	ug/kg	420	148	1	03/18/21 10:18	03/18/21 21:17	90-12-0	
2-Methylnaphthalene	ND	ug/kg	420	168	1	03/18/21 10:18	03/18/21 21:17	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_5.5-6.0_20210315 Lab ID: 92528353002 Collected: 03/15/21 14:20 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	420	172	1	03/18/21 10:18	03/18/21 21:17	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	420	169	1	03/18/21 10:18	03/18/21 21:17	15831-10-4	
2-Nitroaniline	ND	ug/kg	2100	344	1	03/18/21 10:18	03/18/21 21:17	88-74-4	
3-Nitroaniline	ND	ug/kg	2100	330	1	03/18/21 10:18	03/18/21 21:17	99-09-2	
4-Nitroaniline	ND	ug/kg	841	320	1	03/18/21 10:18	03/18/21 21:17	100-01-6	
Nitrobenzene	ND	ug/kg	420	195	1	03/18/21 10:18	03/18/21 21:17	98-95-3	
2-Nitrophenol	ND	ug/kg	420	182	1	03/18/21 10:18	03/18/21 21:17	88-75-5	
4-Nitrophenol	ND	ug/kg	2100	813	1	03/18/21 10:18	03/18/21 21:17	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	420	141	1	03/18/21 10:18	03/18/21 21:17	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	420	158	1	03/18/21 10:18	03/18/21 21:17	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	420	149	1	03/18/21 10:18	03/18/21 21:17	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	420	200	1	03/18/21 10:18	03/18/21 21:17	108-60-1	
Pentachlorophenol	ND	ug/kg	841	411	1	03/18/21 10:18	03/18/21 21:17	87-86-5	
Phenanthrene	ND	ug/kg	420	138	1	03/18/21 10:18	03/18/21 21:17	85-01-8	
Phenol	ND	ug/kg	420	187	1	03/18/21 10:18	03/18/21 21:17	108-95-2	
Pyrene	ND	ug/kg	420	171	1	03/18/21 10:18	03/18/21 21:17	129-00-0	
Pyridine	ND	ug/kg	420	132	1	03/18/21 10:18	03/18/21 21:17	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	420	192	1	03/18/21 10:18	03/18/21 21:17	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	420	173	1	03/18/21 10:18	03/18/21 21:17	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	60	%	21-130		1	03/18/21 10:18	03/18/21 21:17	4165-60-0	
2-Fluorobiphenyl (S)	27	%	19-130		1	03/18/21 10:18	03/18/21 21:17	321-60-8	
Terphenyl-d14 (S)	32	%	15-130		1	03/18/21 10:18	03/18/21 21:17	1718-51-0	
Phenol-d6 (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 21:17	13127-88-3	
2-Fluorophenol (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 21:17	367-12-4	
2,4,6-Tribromophenol (S)	54	%	18-130		1	03/18/21 10:18	03/18/21 21:17	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	337	108	1	03/18/21 12:56	03/19/21 01:02	67-64-1	
Benzene	ND	ug/kg	16.9	6.7	1	03/18/21 12:56	03/19/21 01:02	71-43-2	
Bromobenzene	ND	ug/kg	16.9	5.5	1	03/18/21 12:56	03/19/21 01:02	108-86-1	
Bromochloromethane	ND	ug/kg	16.9	5.0	1	03/18/21 12:56	03/19/21 01:02	74-97-5	
Bromodichloromethane	ND	ug/kg	16.9	6.5	1	03/18/21 12:56	03/19/21 01:02	75-27-4	
Bromoform	ND	ug/kg	16.9	5.9	1	03/18/21 12:56	03/19/21 01:02	75-25-2	
Bromomethane	ND	ug/kg	33.7	26.6	1	03/18/21 12:56	03/19/21 01:02	74-83-9	IH,IK, L1,v1
2-Butanone (MEK)	ND	ug/kg	337	80.9	1	03/18/21 12:56	03/19/21 01:02	78-93-3	
n-Butylbenzene	ND	ug/kg	16.9	8.0	1	03/18/21 12:56	03/19/21 01:02	104-51-8	
sec-Butylbenzene	ND	ug/kg	16.9	7.4	1	03/18/21 12:56	03/19/21 01:02	135-98-8	
tert-Butylbenzene	ND	ug/kg	16.9	6.0	1	03/18/21 12:56	03/19/21 01:02	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	16.9	6.3	1	03/18/21 12:56	03/19/21 01:02	56-23-5	
Chlorobenzene	ND	ug/kg	16.9	3.2	1	03/18/21 12:56	03/19/21 01:02	108-90-7	
Chloroethane	ND	ug/kg	33.7	13.0	1	03/18/21 12:56	03/19/21 01:02	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_5.5-6.0_20210315 **Lab ID:** 92528353002 **Collected:** 03/15/21 14:20 **Received:** 03/17/21 10:45 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	16.9	10.2	1	03/18/21 12:56	03/19/21 01:02	67-66-3	
Chloromethane	ND	ug/kg	33.7	14.2	1	03/18/21 12:56	03/19/21 01:02	74-87-3	M1
2-Chlorotoluene	ND	ug/kg	16.9	6.0	1	03/18/21 12:56	03/19/21 01:02	95-49-8	
4-Chlorotoluene	ND	ug/kg	16.9	3.0	1	03/18/21 12:56	03/19/21 01:02	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	16.9	6.5	1	03/18/21 12:56	03/19/21 01:02	96-12-8	
Dibromochloromethane	ND	ug/kg	16.9	9.5	1	03/18/21 12:56	03/19/21 01:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	16.9	7.4	1	03/18/21 12:56	03/19/21 01:02	106-93-4	
Dibromomethane	ND	ug/kg	16.9	3.6	1	03/18/21 12:56	03/19/21 01:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	16.9	6.1	1	03/18/21 12:56	03/19/21 01:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	16.9	5.2	1	03/18/21 12:56	03/19/21 01:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	16.9	4.4	1	03/18/21 12:56	03/19/21 01:02	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	33.7	7.3	1	03/18/21 12:56	03/19/21 01:02	75-71-8	
1,1-Dichloroethane	ND	ug/kg	16.9	6.9	1	03/18/21 12:56	03/19/21 01:02	75-34-3	
1,2-Dichloroethane	ND	ug/kg	16.9	11.2	1	03/18/21 12:56	03/19/21 01:02	107-06-2	
1,1-Dichloroethene	ND	ug/kg	16.9	6.9	1	03/18/21 12:56	03/19/21 01:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	16.9	5.8	1	03/18/21 12:56	03/19/21 01:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	16.9	5.9	1	03/18/21 12:56	03/19/21 01:02	156-60-5	
1,2-Dichloropropane	ND	ug/kg	16.9	5.1	1	03/18/21 12:56	03/19/21 01:02	78-87-5	
1,3-Dichloropropane	ND	ug/kg	16.9	5.3	1	03/18/21 12:56	03/19/21 01:02	142-28-9	
2,2-Dichloropropane	ND	ug/kg	16.9	5.5	1	03/18/21 12:56	03/19/21 01:02	594-20-7	
1,1-Dichloropropene	ND	ug/kg	16.9	8.1	1	03/18/21 12:56	03/19/21 01:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	16.9	4.6	1	03/18/21 12:56	03/19/21 01:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	16.9	5.8	1	03/18/21 12:56	03/19/21 01:02	10061-02-6	
Diisopropyl ether	ND	ug/kg	16.9	4.6	1	03/18/21 12:56	03/19/21 01:02	108-20-3	
Ethylbenzene	9.2J	ug/kg	16.9	7.9	1	03/18/21 12:56	03/19/21 01:02	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	33.7	27.6	1	03/18/21 12:56	03/19/21 01:02	87-68-3	IK
2-Hexanone	ND	ug/kg	169	16.3	1	03/18/21 12:56	03/19/21 01:02	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	16.9	5.7	1	03/18/21 12:56	03/19/21 01:02	98-82-8	
p-Isopropyltoluene	ND	ug/kg	16.9	8.3	1	03/18/21 12:56	03/19/21 01:02	99-87-6	
Methylene Chloride	ND	ug/kg	67.4	46.2	1	03/18/21 12:56	03/19/21 01:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	169	16.3	1	03/18/21 12:56	03/19/21 01:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	16.9	6.3	1	03/18/21 12:56	03/19/21 01:02	1634-04-4	
Naphthalene	ND	ug/kg	16.9	8.9	1	03/18/21 12:56	03/19/21 01:02	91-20-3	
n-Propylbenzene	ND	ug/kg	16.9	6.0	1	03/18/21 12:56	03/19/21 01:02	103-65-1	
Styrene	ND	ug/kg	16.9	4.5	1	03/18/21 12:56	03/19/21 01:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	16.9	6.5	1	03/18/21 12:56	03/19/21 01:02	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	16.9	4.5	1	03/18/21 12:56	03/19/21 01:02	79-34-5	
Tetrachloroethene	ND	ug/kg	16.9	5.3	1	03/18/21 12:56	03/19/21 01:02	127-18-4	
Toluene	ND	ug/kg	16.9	4.8	1	03/18/21 12:56	03/19/21 01:02	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	16.9	13.6	1	03/18/21 12:56	03/19/21 01:02	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	16.9	14.2	1	03/18/21 12:56	03/19/21 01:02	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	16.9	8.8	1	03/18/21 12:56	03/19/21 01:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	16.9	5.6	1	03/18/21 12:56	03/19/21 01:02	79-00-5	

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-19_SO_5.5-6.0_20210315 **Lab ID:** 92528353002 Collected: 03/15/21 14:20 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichloroethene	ND	ug/kg	16.9	4.3	1	03/18/21 12:56	03/19/21 01:02	79-01-6	
Trichlorofluoromethane	ND	ug/kg	16.9	9.3	1	03/18/21 12:56	03/19/21 01:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	16.9	8.5	1	03/18/21 12:56	03/19/21 01:02	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	16.9	4.6	1	03/18/21 12:56	03/19/21 01:02	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	16.9	5.7	1	03/18/21 12:56	03/19/21 01:02	108-67-8	
Vinyl acetate	ND	ug/kg	169	12.3	1	03/18/21 12:56	03/19/21 01:02	108-05-4	
Vinyl chloride	ND	ug/kg	33.7	8.6	1	03/18/21 12:56	03/19/21 01:02	75-01-4	
Xylene (Total)	89.9	ug/kg	33.7	9.6	1	03/18/21 12:56	03/19/21 01:02	1330-20-7	
m&p-Xylene	65.9	ug/kg	33.7	11.5	1	03/18/21 12:56	03/19/21 01:02	179601-23-1	
o-Xylene	24.0	ug/kg	16.9	7.5	1	03/18/21 12:56	03/19/21 01:02	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	03/18/21 12:56	03/19/21 01:02	2037-26-5	
4-Bromofluorobenzene (S)	94	%	69-134		1	03/18/21 12:56	03/19/21 01:02	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1	03/18/21 12:56	03/19/21 01:02	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	22.3	%	0.10	0.10	1		03/18/21 15:17		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_0.5-1.0_20210315 **Lab ID:** 92528353003 Collected: 03/15/21 14:30 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	383	135	1	03/18/21 10:18	03/18/21 21:45	83-32-9	
Acenaphthylene	ND	ug/kg	383	135	1	03/18/21 10:18	03/18/21 21:45	208-96-8	
Aniline	ND	ug/kg	383	150	1	03/18/21 10:18	03/18/21 21:45	62-53-3	
Anthracene	ND	ug/kg	383	125	1	03/18/21 10:18	03/18/21 21:45	120-12-7	
Benzo(a)anthracene	ND	ug/kg	383	128	1	03/18/21 10:18	03/18/21 21:45	56-55-3	
Benzo(b)fluoranthene	ND	ug/kg	383	128	1	03/18/21 10:18	03/18/21 21:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	383	149	1	03/18/21 10:18	03/18/21 21:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	383	135	1	03/18/21 10:18	03/18/21 21:45	207-08-9	
Benzoic Acid	ND	ug/kg	1910	823	1	03/18/21 10:18	03/18/21 21:45	65-85-0	
Benzyl alcohol	ND	ug/kg	766	290	1	03/18/21 10:18	03/18/21 21:45	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	383	147	1	03/18/21 10:18	03/18/21 21:45	101-55-3	
Butylbenzylphthalate	ND	ug/kg	383	161	1	03/18/21 10:18	03/18/21 21:45	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	766	269	1	03/18/21 10:18	03/18/21 21:45	59-50-7	
4-Chloroaniline	ND	ug/kg	766	300	1	03/18/21 10:18	03/18/21 21:45	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	383	159	1	03/18/21 10:18	03/18/21 21:45	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	383	144	1	03/18/21 10:18	03/18/21 21:45	111-44-4	
2-Chloronaphthalene	ND	ug/kg	383	152	1	03/18/21 10:18	03/18/21 21:45	91-58-7	
2-Chlorophenol	ND	ug/kg	383	144	1	03/18/21 10:18	03/18/21 21:45	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	383	143	1	03/18/21 10:18	03/18/21 21:45	7005-72-3	
Chrysene	ND	ug/kg	383	139	1	03/18/21 10:18	03/18/21 21:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	383	147	1	03/18/21 10:18	03/18/21 21:45	53-70-3	
Dibenzofuran	ND	ug/kg	383	138	1	03/18/21 10:18	03/18/21 21:45	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	766	259	1	03/18/21 10:18	03/18/21 21:45	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	383	150	1	03/18/21 10:18	03/18/21 21:45	120-83-2	
Diethylphthalate	ND	ug/kg	383	140	1	03/18/21 10:18	03/18/21 21:45	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	383	159	1	03/18/21 10:18	03/18/21 21:45	105-67-9	
Dimethylphthalate	ND	ug/kg	383	139	1	03/18/21 10:18	03/18/21 21:45	131-11-3	
Di-n-butylphthalate	ND	ug/kg	383	129	1	03/18/21 10:18	03/18/21 21:45	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	766	357	1	03/18/21 10:18	03/18/21 21:45	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1910	1180	1	03/18/21 10:18	03/18/21 21:45	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	383	147	1	03/18/21 10:18	03/18/21 21:45	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	383	140	1	03/18/21 10:18	03/18/21 21:45	606-20-2	
Di-n-octylphthalate	ND	ug/kg	383	151	1	03/18/21 10:18	03/18/21 21:45	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	383	149	1	03/18/21 10:18	03/18/21 21:45	117-81-7	v1
Fluoranthene	ND	ug/kg	383	131	1	03/18/21 10:18	03/18/21 21:45	206-44-0	
Fluorene	ND	ug/kg	383	135	1	03/18/21 10:18	03/18/21 21:45	86-73-7	
Hexachlorobenzene	ND	ug/kg	383	150	1	03/18/21 10:18	03/18/21 21:45	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	383	219	1	03/18/21 10:18	03/18/21 21:45	77-47-4	
Hexachloroethane	ND	ug/kg	383	146	1	03/18/21 10:18	03/18/21 21:45	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	383	151	1	03/18/21 10:18	03/18/21 21:45	193-39-5	
Isophorone	ND	ug/kg	383	171	1	03/18/21 10:18	03/18/21 21:45	78-59-1	
1-Methylnaphthalene	ND	ug/kg	383	135	1	03/18/21 10:18	03/18/21 21:45	90-12-0	
2-Methylnaphthalene	ND	ug/kg	383	153	1	03/18/21 10:18	03/18/21 21:45	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_0.5-1.0_20210315 **Lab ID:** 92528353003 **Collected:** 03/15/21 14:30 **Received:** 03/17/21 10:45 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	383	157	1	03/18/21 10:18	03/18/21 21:45	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	383	154	1	03/18/21 10:18	03/18/21 21:45	15831-10-4	
2-Nitroaniline	ND	ug/kg	1910	313	1	03/18/21 10:18	03/18/21 21:45	88-74-4	
3-Nitroaniline	ND	ug/kg	1910	300	1	03/18/21 10:18	03/18/21 21:45	99-09-2	
4-Nitroaniline	ND	ug/kg	766	291	1	03/18/21 10:18	03/18/21 21:45	100-01-6	
Nitrobenzene	ND	ug/kg	383	178	1	03/18/21 10:18	03/18/21 21:45	98-95-3	
2-Nitrophenol	ND	ug/kg	383	166	1	03/18/21 10:18	03/18/21 21:45	88-75-5	
4-Nitrophenol	ND	ug/kg	1910	740	1	03/18/21 10:18	03/18/21 21:45	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	383	129	1	03/18/21 10:18	03/18/21 21:45	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	383	144	1	03/18/21 10:18	03/18/21 21:45	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	383	136	1	03/18/21 10:18	03/18/21 21:45	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	383	182	1	03/18/21 10:18	03/18/21 21:45	108-60-1	
Pentachlorophenol	ND	ug/kg	766	375	1	03/18/21 10:18	03/18/21 21:45	87-86-5	
Phenanthrene	ND	ug/kg	383	125	1	03/18/21 10:18	03/18/21 21:45	85-01-8	
Phenol	ND	ug/kg	383	171	1	03/18/21 10:18	03/18/21 21:45	108-95-2	
Pyrene	ND	ug/kg	383	155	1	03/18/21 10:18	03/18/21 21:45	129-00-0	
Pyridine	ND	ug/kg	383	121	1	03/18/21 10:18	03/18/21 21:45	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	383	175	1	03/18/21 10:18	03/18/21 21:45	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	383	158	1	03/18/21 10:18	03/18/21 21:45	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	67	%	21-130		1	03/18/21 10:18	03/18/21 21:45	4165-60-0	
2-Fluorobiphenyl (S)	61	%	19-130		1	03/18/21 10:18	03/18/21 21:45	321-60-8	
Terphenyl-d14 (S)	86	%	15-130		1	03/18/21 10:18	03/18/21 21:45	1718-51-0	
Phenol-d6 (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 21:45	13127-88-3	
2-Fluorophenol (S)	61	%	18-130		1	03/18/21 10:18	03/18/21 21:45	367-12-4	
2,4,6-Tribromophenol (S)	56	%	18-130		1	03/18/21 10:18	03/18/21 21:45	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	131	42.1	1	03/18/21 12:56	03/19/21 01:55	67-64-1	
Benzene	ND	ug/kg	6.6	2.6	1	03/18/21 12:56	03/19/21 01:55	71-43-2	
Bromobenzene	ND	ug/kg	6.6	2.1	1	03/18/21 12:56	03/19/21 01:55	108-86-1	
Bromochloromethane	ND	ug/kg	6.6	1.9	1	03/18/21 12:56	03/19/21 01:55	74-97-5	
Bromodichloromethane	ND	ug/kg	6.6	2.5	1	03/18/21 12:56	03/19/21 01:55	75-27-4	
Bromoform	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	75-25-2	
Bromomethane	ND	ug/kg	13.1	10.4	1	03/18/21 12:56	03/19/21 01:55	74-83-9	L1
2-Butanone (MEK)	ND	ug/kg	131	31.5	1	03/18/21 12:56	03/19/21 01:55	78-93-3	
n-Butylbenzene	ND	ug/kg	6.6	3.1	1	03/18/21 12:56	03/19/21 01:55	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.6	2.9	1	03/18/21 12:56	03/19/21 01:55	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	98-06-6	
Carbon tetrachloride	ND	ug/kg	6.6	2.5	1	03/18/21 12:56	03/19/21 01:55	56-23-5	
Chlorobenzene	ND	ug/kg	6.6	1.3	1	03/18/21 12:56	03/19/21 01:55	108-90-7	
Chloroethane	ND	ug/kg	13.1	5.1	1	03/18/21 12:56	03/19/21 01:55	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_0.5-1.0_20210315 **Lab ID:** 92528353003 Collected: 03/15/21 14:30 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.6	4.0	1	03/18/21 12:56	03/19/21 01:55	67-66-3	
Chloromethane	ND	ug/kg	13.1	5.5	1	03/18/21 12:56	03/19/21 01:55	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.6	1.2	1	03/18/21 12:56	03/19/21 01:55	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.6	2.5	1	03/18/21 12:56	03/19/21 01:55	96-12-8	
Dibromochloromethane	ND	ug/kg	6.6	3.7	1	03/18/21 12:56	03/19/21 01:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.6	2.9	1	03/18/21 12:56	03/19/21 01:55	106-93-4	
Dibromomethane	ND	ug/kg	6.6	1.4	1	03/18/21 12:56	03/19/21 01:55	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.6	2.4	1	03/18/21 12:56	03/19/21 01:55	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.6	2.0	1	03/18/21 12:56	03/19/21 01:55	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.6	1.7	1	03/18/21 12:56	03/19/21 01:55	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	13.1	2.8	1	03/18/21 12:56	03/19/21 01:55	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.6	2.7	1	03/18/21 12:56	03/19/21 01:55	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.6	4.3	1	03/18/21 12:56	03/19/21 01:55	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.6	2.7	1	03/18/21 12:56	03/19/21 01:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.6	2.2	1	03/18/21 12:56	03/19/21 01:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.6	2.0	1	03/18/21 12:56	03/19/21 01:55	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.6	2.0	1	03/18/21 12:56	03/19/21 01:55	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.6	2.1	1	03/18/21 12:56	03/19/21 01:55	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.6	3.2	1	03/18/21 12:56	03/19/21 01:55	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.6	1.8	1	03/18/21 12:56	03/19/21 01:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.6	1.8	1	03/18/21 12:56	03/19/21 01:55	108-20-3	
Ethylbenzene	ND	ug/kg	6.6	3.1	1	03/18/21 12:56	03/19/21 01:55	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	13.1	10.7	1	03/18/21 12:56	03/19/21 01:55	87-68-3	
2-Hexanone	ND	ug/kg	65.6	6.3	1	03/18/21 12:56	03/19/21 01:55	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.6	2.2	1	03/18/21 12:56	03/19/21 01:55	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.6	3.2	1	03/18/21 12:56	03/19/21 01:55	99-87-6	
Methylene Chloride	ND	ug/kg	26.3	18.0	1	03/18/21 12:56	03/19/21 01:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	65.6	6.3	1	03/18/21 12:56	03/19/21 01:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.6	2.5	1	03/18/21 12:56	03/19/21 01:55	1634-04-4	
Naphthalene	ND	ug/kg	6.6	3.5	1	03/18/21 12:56	03/19/21 01:55	91-20-3	
n-Propylbenzene	ND	ug/kg	6.6	2.3	1	03/18/21 12:56	03/19/21 01:55	103-65-1	
Styrene	ND	ug/kg	6.6	1.7	1	03/18/21 12:56	03/19/21 01:55	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.6	2.5	1	03/18/21 12:56	03/19/21 01:55	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/kg	6.6	1.7	1	03/18/21 12:56	03/19/21 01:55	79-34-5	
Tetrachloroethene	ND	ug/kg	6.6	2.1	1	03/18/21 12:56	03/19/21 01:55	127-18-4	
Toluene	14.1	ug/kg	6.6	1.9	1	03/18/21 12:56	03/19/21 01:55	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.6	5.3	1	03/18/21 12:56	03/19/21 01:55	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.6	5.5	1	03/18/21 12:56	03/19/21 01:55	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.6	3.4	1	03/18/21 12:56	03/19/21 01:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.6	2.2	1	03/18/21 12:56	03/19/21 01:55	79-00-5	

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_0.5-1.0_20210315 **Lab ID:** 92528353003 Collected: 03/15/21 14:30 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichloroethene	ND	ug/kg	6.6	1.7	1	03/18/21 12:56	03/19/21 01:55	79-01-6	
Trichlorofluoromethane	ND	ug/kg	6.6	3.6	1	03/18/21 12:56	03/19/21 01:55	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.6	3.3	1	03/18/21 12:56	03/19/21 01:55	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.6	1.8	1	03/18/21 12:56	03/19/21 01:55	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.6	2.2	1	03/18/21 12:56	03/19/21 01:55	108-67-8	
Vinyl acetate	ND	ug/kg	65.6	4.8	1	03/18/21 12:56	03/19/21 01:55	108-05-4	
Vinyl chloride	ND	ug/kg	13.1	3.3	1	03/18/21 12:56	03/19/21 01:55	75-01-4	
Xylene (Total)	ND	ug/kg	13.1	3.7	1	03/18/21 12:56	03/19/21 01:55	1330-20-7	
m&p-Xylene	ND	ug/kg	13.1	4.5	1	03/18/21 12:56	03/19/21 01:55	179601-23-1	
o-Xylene	ND	ug/kg	6.6	2.9	1	03/18/21 12:56	03/19/21 01:55	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	03/18/21 12:56	03/19/21 01:55	2037-26-5	
4-Bromofluorobenzene (S)	94	%	69-134		1	03/18/21 12:56	03/19/21 01:55	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1	03/18/21 12:56	03/19/21 01:55	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	13.2	%	0.10	0.10	1		03/18/21 15:17		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_5.5-6.0_20210315 **Lab ID:** 92528353004 **Collected:** 03/15/21 14:35 **Received:** 03/17/21 10:45 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	408	143	1	03/18/21 10:18	03/18/21 22:13	83-32-9	
Acenaphthylene	ND	ug/kg	408	143	1	03/18/21 10:18	03/18/21 22:13	208-96-8	
Aniline	ND	ug/kg	408	160	1	03/18/21 10:18	03/18/21 22:13	62-53-3	
Anthracene	ND	ug/kg	408	134	1	03/18/21 10:18	03/18/21 22:13	120-12-7	
Benzo(a)anthracene	ND	ug/kg	408	136	1	03/18/21 10:18	03/18/21 22:13	56-55-3	
Benzo(b)fluoranthene	ND	ug/kg	408	136	1	03/18/21 10:18	03/18/21 22:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	408	158	1	03/18/21 10:18	03/18/21 22:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	408	143	1	03/18/21 10:18	03/18/21 22:13	207-08-9	
Benzoic Acid	ND	ug/kg	2040	877	1	03/18/21 10:18	03/18/21 22:13	65-85-0	
Benzyl alcohol	ND	ug/kg	816	309	1	03/18/21 10:18	03/18/21 22:13	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	408	157	1	03/18/21 10:18	03/18/21 22:13	101-55-3	
Butylbenzylphthalate	ND	ug/kg	408	172	1	03/18/21 10:18	03/18/21 22:13	85-68-7	v1
4-Chloro-3-methylphenol	ND	ug/kg	816	287	1	03/18/21 10:18	03/18/21 22:13	59-50-7	
4-Chloroaniline	ND	ug/kg	816	320	1	03/18/21 10:18	03/18/21 22:13	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	408	169	1	03/18/21 10:18	03/18/21 22:13	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	408	153	1	03/18/21 10:18	03/18/21 22:13	111-44-4	
2-Chloronaphthalene	ND	ug/kg	408	162	1	03/18/21 10:18	03/18/21 22:13	91-58-7	
2-Chlorophenol	ND	ug/kg	408	153	1	03/18/21 10:18	03/18/21 22:13	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	408	152	1	03/18/21 10:18	03/18/21 22:13	7005-72-3	
Chrysene	ND	ug/kg	408	148	1	03/18/21 10:18	03/18/21 22:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	408	157	1	03/18/21 10:18	03/18/21 22:13	53-70-3	
Dibenzofuran	ND	ug/kg	408	147	1	03/18/21 10:18	03/18/21 22:13	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/kg	816	276	1	03/18/21 10:18	03/18/21 22:13	91-94-1	IL
2,4-Dichlorophenol	ND	ug/kg	408	160	1	03/18/21 10:18	03/18/21 22:13	120-83-2	
Diethylphthalate	ND	ug/kg	408	150	1	03/18/21 10:18	03/18/21 22:13	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	408	169	1	03/18/21 10:18	03/18/21 22:13	105-67-9	
Dimethylphthalate	ND	ug/kg	408	148	1	03/18/21 10:18	03/18/21 22:13	131-11-3	
Di-n-butylphthalate	ND	ug/kg	408	137	1	03/18/21 10:18	03/18/21 22:13	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	816	381	1	03/18/21 10:18	03/18/21 22:13	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	2040	1260	1	03/18/21 10:18	03/18/21 22:13	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	408	157	1	03/18/21 10:18	03/18/21 22:13	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	408	150	1	03/18/21 10:18	03/18/21 22:13	606-20-2	
Di-n-octylphthalate	ND	ug/kg	408	161	1	03/18/21 10:18	03/18/21 22:13	117-84-0	v1
bis(2-Ethylhexyl)phthalate	ND	ug/kg	408	158	1	03/18/21 10:18	03/18/21 22:13	117-81-7	v1
Fluoranthene	ND	ug/kg	408	140	1	03/18/21 10:18	03/18/21 22:13	206-44-0	
Fluorene	ND	ug/kg	408	143	1	03/18/21 10:18	03/18/21 22:13	86-73-7	
Hexachlorobenzene	ND	ug/kg	408	160	1	03/18/21 10:18	03/18/21 22:13	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	408	234	1	03/18/21 10:18	03/18/21 22:13	77-47-4	
Hexachloroethane	ND	ug/kg	408	156	1	03/18/21 10:18	03/18/21 22:13	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	408	161	1	03/18/21 10:18	03/18/21 22:13	193-39-5	
Isophorone	ND	ug/kg	408	182	1	03/18/21 10:18	03/18/21 22:13	78-59-1	
1-Methylnaphthalene	ND	ug/kg	408	143	1	03/18/21 10:18	03/18/21 22:13	90-12-0	
2-Methylnaphthalene	ND	ug/kg	408	163	1	03/18/21 10:18	03/18/21 22:13	91-57-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_5.5-6.0_20210315 **Lab ID:** 92528353004 Collected: 03/15/21 14:35 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
2-Methylphenol(o-Cresol)	ND	ug/kg	408	167	1	03/18/21 10:18	03/18/21 22:13	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	408	165	1	03/18/21 10:18	03/18/21 22:13	15831-10-4	
2-Nitroaniline	ND	ug/kg	2040	334	1	03/18/21 10:18	03/18/21 22:13	88-74-4	
3-Nitroaniline	ND	ug/kg	2040	320	1	03/18/21 10:18	03/18/21 22:13	99-09-2	
4-Nitroaniline	ND	ug/kg	816	310	1	03/18/21 10:18	03/18/21 22:13	100-01-6	
Nitrobenzene	ND	ug/kg	408	189	1	03/18/21 10:18	03/18/21 22:13	98-95-3	
2-Nitrophenol	ND	ug/kg	408	177	1	03/18/21 10:18	03/18/21 22:13	88-75-5	
4-Nitrophenol	ND	ug/kg	2040	789	1	03/18/21 10:18	03/18/21 22:13	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	408	137	1	03/18/21 10:18	03/18/21 22:13	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	408	153	1	03/18/21 10:18	03/18/21 22:13	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	408	145	1	03/18/21 10:18	03/18/21 22:13	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	408	194	1	03/18/21 10:18	03/18/21 22:13	108-60-1	
Pentachlorophenol	ND	ug/kg	816	400	1	03/18/21 10:18	03/18/21 22:13	87-86-5	
Phenanthrene	ND	ug/kg	408	134	1	03/18/21 10:18	03/18/21 22:13	85-01-8	
Phenol	ND	ug/kg	408	182	1	03/18/21 10:18	03/18/21 22:13	108-95-2	
Pyrene	ND	ug/kg	408	166	1	03/18/21 10:18	03/18/21 22:13	129-00-0	
Pyridine	ND	ug/kg	408	129	1	03/18/21 10:18	03/18/21 22:13	110-86-1	
2,4,5-Trichlorophenol	ND	ug/kg	408	187	1	03/18/21 10:18	03/18/21 22:13	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	408	168	1	03/18/21 10:18	03/18/21 22:13	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	69	%	21-130		1	03/18/21 10:18	03/18/21 22:13	4165-60-0	
2-Fluorobiphenyl (S)	62	%	19-130		1	03/18/21 10:18	03/18/21 22:13	321-60-8	
Terphenyl-d14 (S)	66	%	15-130		1	03/18/21 10:18	03/18/21 22:13	1718-51-0	
Phenol-d6 (S)	64	%	18-130		1	03/18/21 10:18	03/18/21 22:13	13127-88-3	
2-Fluorophenol (S)	64	%	18-130		1	03/18/21 10:18	03/18/21 22:13	367-12-4	
2,4,6-Tribromophenol (S)	64	%	18-130		1	03/18/21 10:18	03/18/21 22:13	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	126	40.6	1	03/18/21 12:56	03/19/21 01:20	67-64-1	
Benzene	ND	ug/kg	6.3	2.5	1	03/18/21 12:56	03/19/21 01:20	71-43-2	
Bromobenzene	ND	ug/kg	6.3	2.1	1	03/18/21 12:56	03/19/21 01:20	108-86-1	
Bromochloromethane	ND	ug/kg	6.3	1.9	1	03/18/21 12:56	03/19/21 01:20	74-97-5	
Bromodichloromethane	ND	ug/kg	6.3	2.4	1	03/18/21 12:56	03/19/21 01:20	75-27-4	
Bromoform	ND	ug/kg	6.3	2.2	1	03/18/21 12:56	03/19/21 01:20	75-25-2	
Bromomethane	ND	ug/kg	12.6	10	1	03/18/21 12:56	03/19/21 01:20	74-83-9	L1
2-Butanone (MEK)	ND	ug/kg	126	30.3	1	03/18/21 12:56	03/19/21 01:20	78-93-3	
n-Butylbenzene	ND	ug/kg	6.3	3.0	1	03/18/21 12:56	03/19/21 01:20	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.3	2.8	1	03/18/21 12:56	03/19/21 01:20	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.3	2.3	1	03/18/21 12:56	03/19/21 01:20	98-06-6	v2
Carbon tetrachloride	ND	ug/kg	6.3	2.4	1	03/18/21 12:56	03/19/21 01:20	56-23-5	
Chlorobenzene	ND	ug/kg	6.3	1.2	1	03/18/21 12:56	03/19/21 01:20	108-90-7	
Chloroethane	ND	ug/kg	12.6	4.9	1	03/18/21 12:56	03/19/21 01:20	75-00-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_5.5-6.0_20210315 Lab ID: 92528353004 Collected: 03/15/21 14:35 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Chloroform	ND	ug/kg	6.3	3.8	1	03/18/21 12:56	03/19/21 01:20	67-66-3	
Chloromethane	ND	ug/kg	12.6	5.3	1	03/18/21 12:56	03/19/21 01:20	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.3	2.2	1	03/18/21 12:56	03/19/21 01:20	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.3	1.1	1	03/18/21 12:56	03/19/21 01:20	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.3	2.5	1	03/18/21 12:56	03/19/21 01:20	96-12-8	
Dibromochloromethane	ND	ug/kg	6.3	3.6	1	03/18/21 12:56	03/19/21 01:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.3	2.8	1	03/18/21 12:56	03/19/21 01:20	106-93-4	
Dibromomethane	ND	ug/kg	6.3	1.4	1	03/18/21 12:56	03/19/21 01:20	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.3	2.3	1	03/18/21 12:56	03/19/21 01:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.3	2.0	1	03/18/21 12:56	03/19/21 01:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.3	1.6	1	03/18/21 12:56	03/19/21 01:20	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.6	2.7	1	03/18/21 12:56	03/19/21 01:20	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.3	2.6	1	03/18/21 12:56	03/19/21 01:20	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.3	4.2	1	03/18/21 12:56	03/19/21 01:20	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.3	2.6	1	03/18/21 12:56	03/19/21 01:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.3	2.2	1	03/18/21 12:56	03/19/21 01:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.3	2.2	1	03/18/21 12:56	03/19/21 01:20	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.3	1.9	1	03/18/21 12:56	03/19/21 01:20	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.3	2.0	1	03/18/21 12:56	03/19/21 01:20	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.3	2.1	1	03/18/21 12:56	03/19/21 01:20	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.3	3.0	1	03/18/21 12:56	03/19/21 01:20	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.3	1.7	1	03/18/21 12:56	03/19/21 01:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.3	2.2	1	03/18/21 12:56	03/19/21 01:20	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.3	1.7	1	03/18/21 12:56	03/19/21 01:20	108-20-3	
Ethylbenzene	ND	ug/kg	6.3	2.9	1	03/18/21 12:56	03/19/21 01:20	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	12.6	10.3	1	03/18/21 12:56	03/19/21 01:20	87-68-3	IK
2-Hexanone	ND	ug/kg	63.2	6.1	1	03/18/21 12:56	03/19/21 01:20	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.3	2.1	1	03/18/21 12:56	03/19/21 01:20	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.3	3.1	1	03/18/21 12:56	03/19/21 01:20	99-87-6	
Methylene Chloride	ND	ug/kg	25.3	17.3	1	03/18/21 12:56	03/19/21 01:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	63.2	6.1	1	03/18/21 12:56	03/19/21 01:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.3	2.4	1	03/18/21 12:56	03/19/21 01:20	1634-04-4	
Naphthalene	ND	ug/kg	6.3	3.3	1	03/18/21 12:56	03/19/21 01:20	91-20-3	
n-Propylbenzene	ND	ug/kg	6.3	2.3	1	03/18/21 12:56	03/19/21 01:20	103-65-1	
Styrene	ND	ug/kg	6.3	1.7	1	03/18/21 12:56	03/19/21 01:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.3	2.4	1	03/18/21 12:56	03/19/21 01:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.3	1.7	1	03/18/21 12:56	03/19/21 01:20	79-34-5	
Tetrachloroethene	ND	ug/kg	6.3	2.0	1	03/18/21 12:56	03/19/21 01:20	127-18-4	
Toluene	5.0J	ug/kg	6.3	1.8	1	03/18/21 12:56	03/19/21 01:20	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.3	5.1	1	03/18/21 12:56	03/19/21 01:20	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.3	5.3	1	03/18/21 12:56	03/19/21 01:20	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.3	3.3	1	03/18/21 12:56	03/19/21 01:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.3	2.1	1	03/18/21 12:56	03/19/21 01:20	79-00-5	

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: RI-SB-20_SO_5.5-6.0_20210315 **Lab ID:** 92528353004 Collected: 03/15/21 14:35 Received: 03/17/21 10:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Trichloroethene	ND	ug/kg	6.3	1.6	1	03/18/21 12:56	03/19/21 01:20	79-01-6	
Trichlorofluoromethane	ND	ug/kg	6.3	3.5	1	03/18/21 12:56	03/19/21 01:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.3	3.2	1	03/18/21 12:56	03/19/21 01:20	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.3	1.7	1	03/18/21 12:56	03/19/21 01:20	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.3	2.1	1	03/18/21 12:56	03/19/21 01:20	108-67-8	
Vinyl acetate	ND	ug/kg	63.2	4.6	1	03/18/21 12:56	03/19/21 01:20	108-05-4	
Vinyl chloride	ND	ug/kg	12.6	3.2	1	03/18/21 12:56	03/19/21 01:20	75-01-4	
Xylene (Total)	ND	ug/kg	12.6	3.6	1	03/18/21 12:56	03/19/21 01:20	1330-20-7	
m&p-Xylene	ND	ug/kg	12.6	4.3	1	03/18/21 12:56	03/19/21 01:20	179601-23-1	
o-Xylene	ND	ug/kg	6.3	2.8	1	03/18/21 12:56	03/19/21 01:20	95-47-6	
Surrogates									
Toluene-d8 (S)	102	%	70-130		1	03/18/21 12:56	03/19/21 01:20	2037-26-5	
4-Bromofluorobenzene (S)	93	%	69-134		1	03/18/21 12:56	03/19/21 01:20	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1	03/18/21 12:56	03/19/21 01:20	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	18.9	%	0.10	0.10	1		03/18/21 15:17		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

Sample: TRIP BLANK **Lab ID: 92528353005** Collected: 03/17/21 00:00 Received: 03/17/21 10:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260 MSV Low Level SC									
Analytical Method: EPA 8260D									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/L	25.0	5.1	1		03/22/21 13:48	67-64-1	
Benzene	ND	ug/L	1.0	0.34	1		03/22/21 13:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.29	1		03/22/21 13:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.47	1		03/22/21 13:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.31	1		03/22/21 13:48	75-27-4	
Bromoform	ND	ug/L	1.0	0.34	1		03/22/21 13:48	75-25-2	IK
Bromomethane	ND	ug/L	2.0	1.7	1		03/22/21 13:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	4.0	1		03/22/21 13:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	0.33	1		03/22/21 13:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.28	1		03/22/21 13:48	108-90-7	
Chloroethane	ND	ug/L	1.0	0.65	1		03/22/21 13:48	75-00-3	
Chloroform	ND	ug/L	5.0	1.6	1		03/22/21 13:48	67-66-3	
Chloromethane	ND	ug/L	1.0	0.54	1		03/22/21 13:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.32	1		03/22/21 13:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.32	1		03/22/21 13:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	0.34	1		03/22/21 13:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.36	1		03/22/21 13:48	124-48-1	
Dibromomethane	ND	ug/L	1.0	0.39	1		03/22/21 13:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.34	1		03/22/21 13:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.34	1		03/22/21 13:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/22/21 13:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.35	1		03/22/21 13:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.37	1		03/22/21 13:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.32	1		03/22/21 13:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.35	1		03/22/21 13:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.38	1		03/22/21 13:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.40	1		03/22/21 13:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.36	1		03/22/21 13:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/22/21 13:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.39	1		03/22/21 13:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.43	1		03/22/21 13:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		03/22/21 13:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		03/22/21 13:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	0.31	1		03/22/21 13:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/22/21 13:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1.5	1		03/22/21 13:48	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.48	1		03/22/21 13:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	0.41	1		03/22/21 13:48	99-87-6	
Methylene Chloride	ND	ug/L	5.0	2.0	1		03/22/21 13:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	2.7	1		03/22/21 13:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.42	1		03/22/21 13:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.64	1		03/22/21 13:48	91-20-3	
Styrene	ND	ug/L	1.0	0.29	1		03/22/21 13:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		03/22/21 13:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		03/22/21 13:48	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Sample: TRIP BLANK Lab ID: 92528353005 Collected: 03/17/21 00:00 Received: 03/17/21 10:45 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC									
Analytical Method: EPA 8260D									
Pace Analytical Services - Charlotte									
Tetrachloroethene	ND	ug/L	1.0	0.29	1		03/22/21 13:48	127-18-4	
Toluene	ND	ug/L	1.0	0.48	1		03/22/21 13:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.81	1		03/22/21 13:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.64	1		03/22/21 13:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.33	1		03/22/21 13:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.32	1		03/22/21 13:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.38	1		03/22/21 13:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.30	1		03/22/21 13:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.26	1		03/22/21 13:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1.3	1		03/22/21 13:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.39	1		03/22/21 13:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	0.34	1		03/22/21 13:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.71	1		03/22/21 13:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.34	1		03/22/21 13:48	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		03/22/21 13:48	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		03/22/21 13:48	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		03/22/21 13:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

QC Batch: 608197

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260 MSV Low Level SC

Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528353005

METHOD BLANK: 3204047

Matrix: Water

Associated Lab Samples: 92528353005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	0.31	03/22/21 12:38	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.33	03/22/21 12:38	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.22	03/22/21 12:38	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.32	03/22/21 12:38	
1,1-Dichloroethane	ug/L	ND	1.0	0.37	03/22/21 12:38	
1,1-Dichloroethene	ug/L	ND	1.0	0.35	03/22/21 12:38	
1,1-Dichloropropene	ug/L	ND	1.0	0.43	03/22/21 12:38	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	0.81	03/22/21 12:38	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.26	03/22/21 12:38	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	0.64	03/22/21 12:38	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	0.34	03/22/21 12:38	
1,2-Dichlorobenzene	ug/L	ND	1.0	0.34	03/22/21 12:38	
1,2-Dichloroethane	ug/L	ND	1.0	0.32	03/22/21 12:38	
1,2-Dichloropropane	ug/L	ND	1.0	0.36	03/22/21 12:38	
1,3-Dichlorobenzene	ug/L	ND	1.0	0.34	03/22/21 12:38	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	03/22/21 12:38	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	03/22/21 12:38	
2,2-Dichloropropane	ug/L	ND	1.0	0.39	03/22/21 12:38	
2-Butanone (MEK)	ug/L	ND	5.0	4.0	03/22/21 12:38	
2-Chlorotoluene	ug/L	ND	1.0	0.32	03/22/21 12:38	
2-Hexanone	ug/L	ND	5.0	0.48	03/22/21 12:38	
4-Chlorotoluene	ug/L	ND	1.0	0.32	03/22/21 12:38	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	2.7	03/22/21 12:38	
Acetone	ug/L	ND	25.0	5.1	03/22/21 12:38	
Benzene	ug/L	ND	1.0	0.34	03/22/21 12:38	
Bromobenzene	ug/L	ND	1.0	0.29	03/22/21 12:38	
Bromochloromethane	ug/L	ND	1.0	0.47	03/22/21 12:38	
Bromodichloromethane	ug/L	ND	1.0	0.31	03/22/21 12:38	
Bromoform	ug/L	ND	1.0	0.34	03/22/21 12:38	IK
Bromomethane	ug/L	ND	2.0	1.7	03/22/21 12:38	
Carbon tetrachloride	ug/L	ND	1.0	0.33	03/22/21 12:38	
Chlorobenzene	ug/L	ND	1.0	0.28	03/22/21 12:38	
Chloroethane	ug/L	ND	1.0	0.65	03/22/21 12:38	
Chloroform	ug/L	ND	5.0	1.6	03/22/21 12:38	
Chloromethane	ug/L	ND	1.0	0.54	03/22/21 12:38	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.38	03/22/21 12:38	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.36	03/22/21 12:38	
Dibromochloromethane	ug/L	ND	1.0	0.36	03/22/21 12:38	
Dibromomethane	ug/L	ND	1.0	0.39	03/22/21 12:38	
Dichlorodifluoromethane	ug/L	ND	1.0	0.35	03/22/21 12:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

METHOD BLANK: 3204047

Matrix: Water

Associated Lab Samples: 92528353005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	0.31	03/22/21 12:38	
Ethylbenzene	ug/L	ND	1.0	0.30	03/22/21 12:38	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	1.5	03/22/21 12:38	
m&p-Xylene	ug/L	ND	2.0	0.71	03/22/21 12:38	
Methyl-tert-butyl ether	ug/L	ND	1.0	0.42	03/22/21 12:38	
Methylene Chloride	ug/L	ND	5.0	2.0	03/22/21 12:38	
Naphthalene	ug/L	ND	1.0	0.64	03/22/21 12:38	
o-Xylene	ug/L	ND	1.0	0.34	03/22/21 12:38	
p-Isopropyltoluene	ug/L	ND	1.0	0.41	03/22/21 12:38	
Styrene	ug/L	ND	1.0	0.29	03/22/21 12:38	
Tetrachloroethene	ug/L	ND	1.0	0.29	03/22/21 12:38	
Toluene	ug/L	ND	1.0	0.48	03/22/21 12:38	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.40	03/22/21 12:38	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.36	03/22/21 12:38	
Trichloroethene	ug/L	ND	1.0	0.38	03/22/21 12:38	
Trichlorofluoromethane	ug/L	ND	1.0	0.30	03/22/21 12:38	
Vinyl acetate	ug/L	ND	2.0	1.3	03/22/21 12:38	
Vinyl chloride	ug/L	ND	1.0	0.39	03/22/21 12:38	
Xylene (Total)	ug/L	ND	1.0	0.34	03/22/21 12:38	
1,2-Dichloroethane-d4 (S)	%	103	70-130		03/22/21 12:38	
4-Bromofluorobenzene (S)	%	103	70-130		03/22/21 12:38	
Toluene-d8 (S)	%	104	70-130		03/22/21 12:38	

LABORATORY CONTROL SAMPLE: 3204048

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.0	98	70-130	
1,1,1-Trichloroethane	ug/L	50	46.7	93	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	48.3	97	70-130	
1,1,2-Trichloroethane	ug/L	50	49.0	98	70-130	
1,1-Dichloroethane	ug/L	50	44.8	90	70-130	
1,1-Dichloroethene	ug/L	50	46.3	93	70-130	
1,1-Dichloropropene	ug/L	50	46.0	92	70-130	
1,2,3-Trichlorobenzene	ug/L	50	47.9	96	70-130	
1,2,3-Trichloropropane	ug/L	50	48.1	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.3	99	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.2	98	70-130	
1,2-Dichlorobenzene	ug/L	50	46.4	93	70-130	
1,2-Dichloroethane	ug/L	50	48.6	97	70-130	
1,2-Dichloropropane	ug/L	50	47.5	95	70-130	
1,3-Dichlorobenzene	ug/L	50	45.9	92	70-130	
1,3-Dichloropropane	ug/L	50	47.2	94	70-130	
1,4-Dichlorobenzene	ug/L	50	46.3	93	70-130	
2,2-Dichloropropane	ug/L	50	47.8	96	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3204048

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	100	108	108	70-130	
2-Chlorotoluene	ug/L	50	45.6	91	70-130	
2-Hexanone	ug/L	100	108	108	70-130	
4-Chlorotoluene	ug/L	50	45.3	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	107	107	70-130	
Acetone	ug/L	100	106	106	70-130	
Benzene	ug/L	50	45.6	91	70-130	
Bromobenzene	ug/L	50	45.5	91	70-130	
Bromochloromethane	ug/L	50	46.4	93	70-130	
Bromodichloromethane	ug/L	50	48.9	98	70-130	
Bromoform	ug/L	50	44.7	89	70-130	IK
Bromomethane	ug/L	50	36.3	73	70-130	
Carbon tetrachloride	ug/L	50	49.8	100	70-130	
Chlorobenzene	ug/L	50	47.4	95	70-130	
Chloroethane	ug/L	50	37.8	76	70-130	
Chloroform	ug/L	50	45.1	90	70-130	
Chloromethane	ug/L	50	36.6	73	70-130	
cis-1,2-Dichloroethene	ug/L	50	44.6	89	70-130	
cis-1,3-Dichloropropene	ug/L	50	51.4	103	70-130	
Dibromochloromethane	ug/L	50	52.2	104	70-130	
Dibromomethane	ug/L	50	49.9	100	70-130	
Dichlorodifluoromethane	ug/L	50	39.2	78	70-130	
Diisopropyl ether	ug/L	50	46.5	93	70-130	
Ethylbenzene	ug/L	50	46.3	93	70-130	
Hexachloro-1,3-butadiene	ug/L	50	45.6	91	70-130	
m&p-Xylene	ug/L	100	92.8	93	70-130	
Methyl-tert-butyl ether	ug/L	50	45.7	91	70-130	
Methylene Chloride	ug/L	50	44.5	89	70-130	
Naphthalene	ug/L	50	47.6	95	70-130	
o-Xylene	ug/L	50	47.7	95	70-130	
p-Isopropyltoluene	ug/L	50	47.5	95	70-130	
Styrene	ug/L	50	47.7	95	70-130	
Tetrachloroethene	ug/L	50	45.6	91	70-130	
Toluene	ug/L	50	47.4	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	45.4	91	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.3	101	70-130	
Trichloroethene	ug/L	50	48.7	97	70-130	
Trichlorofluoromethane	ug/L	50	39.7	79	70-130	
Vinyl acetate	ug/L	100	117	117	70-130	
Vinyl chloride	ug/L	50	37.3	75	70-130	
Xylene (Total)	ug/L	150	140	94	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Parameter	Units	92527658007		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec								
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204049 3204050																
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.8	20.8	104	104	73-134	0	30					
1,1,1-Trichloroethane	ug/L	ND	20	20	24.6	23.2	123	116	82-143	6	30					
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.8	21.2	104	106	70-136	2	30					
1,1,2-Trichloroethane	ug/L	ND	20	20	22.2	22.1	111	110	70-135	1	30					
1,1-Dichloroethane	ug/L	ND	20	20	23.0	21.6	115	108	70-139	6	30					
1,1-Dichloroethene	ug/L	ND	20	20	25.3	23.1	127	115	70-154	9	30					
1,1-Dichloropropene	ug/L	ND	20	20	23.1	23.6	116	118	70-149	2	30					
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.4	20.7	102	104	70-135	1	30					
1,2,3-Trichloropropane	ug/L	ND	20	20	22.1	21.7	110	109	71-137	2	30					
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.4	22.1	102	110	73-140	8	30					
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	19.4	19.0	97	95	65-134	2	30					
1,2-Dichlorobenzene	ug/L	ND	20	20	20.4	20.0	102	100	70-133	2	30					
1,2-Dichloroethane	ug/L	ND	20	20	23.9	22.9	120	114	70-137	4	30					
1,2-Dichloropropane	ug/L	ND	20	20	22.6	21.2	113	106	70-140	6	30					
1,3-Dichlorobenzene	ug/L	ND	20	20	19.8	20.3	99	102	70-135	3	30					
1,3-Dichloropropane	ug/L	ND	20	20	21.4	20.6	107	103	70-143	4	30					
1,4-Dichlorobenzene	ug/L	ND	20	20	19.7	20.6	99	103	70-133	4	30					
2,2-Dichloropropane	ug/L	ND	20	20	23.8	23.6	119	118	61-148	1	30					
2-Butanone (MEK)	ug/L	ND	40	40	48.0	45.9	120	115	60-139	4	30					
2-Chlorotoluene	ug/L	ND	20	20	20.3	20.1	101	101	70-144	1	30					
2-Hexanone	ug/L	ND	40	40	44.5	43.0	111	108	65-138	3	30					
4-Chlorotoluene	ug/L	ND	20	20	19.6	20.0	98	100	70-137	2	30					
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	45.5	43.6	114	109	65-135	4	30					
Acetone	ug/L	ND	40	40	47.3	45.7	118	114	60-148	3	30					
Benzene	ug/L	ND	20	20	22.0	21.1	110	105	70-151	4	30					
Bromobenzene	ug/L	ND	20	20	19.5	19.3	98	97	70-136	1	30					
Bromochloromethane	ug/L	ND	20	20	23.8	22.4	119	112	70-141	6	30					
Bromodichloromethane	ug/L	ND	20	20	22.0	21.0	110	105	70-138	5	30					
Bromoform	ug/L	ND	20	20	17.3	17.6	87	88	63-130	1	30	IK				
Bromomethane	ug/L	ND	20	20	20.1	19.1	100	96	15-152	5	30					
Carbon tetrachloride	ug/L	ND	20	20	24.7	23.2	124	116	70-143	6	30					
Chlorobenzene	ug/L	ND	20	20	21.4	20.6	107	103	70-138	3	30					
Chloroethane	ug/L	ND	20	20	23.7	22.5	118	112	52-163	5	30					
Chloroform	ug/L	ND	20	20	23.0	22.5	115	113	70-139	2	30					
Chloromethane	ug/L	ND	20	20	19.0	18.4	95	92	41-139	3	30					
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.4	21.4	112	107	70-141	5	30					
cis-1,3-Dichloropropene	ug/L	ND	20	20	22.4	21.6	112	108	70-137	4	30					
Dibromochloromethane	ug/L	ND	20	20	21.9	21.3	110	107	70-134	3	30					
Dibromomethane	ug/L	ND	20	20	23.2	22.7	116	113	70-138	2	30					
Dichlorodifluoromethane	ug/L	ND	20	20	22.2	20.9	111	104	47-155	6	30					
Diisopropyl ether	ug/L	ND	20	20	21.6	20.5	108	103	63-144	5	30					
Ethylbenzene	ug/L	ND	20	20	21.2	20.8	106	104	66-153	2	30					
Hexachloro-1,3-butadiene	ug/L	ND	20	20	20.5	20.5	103	103	65-149	0	30					
m&p-Xylene	ug/L	ND	40	40	41.8	41.5	105	104	69-152	1	30					

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3204049		3204050		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92527658007 Result	MS Spike Conc.	MSD Spike Conc.									
Methyl-tert-butyl ether	ug/L	ND	20	20	21.7	20.5	108	102	54-156	6	30		
Methylene Chloride	ug/L	ND	20	20	22.4	21.6	112	108	42-159	4	30		
Naphthalene	ug/L	ND	20	20	18.5	19.7	93	98	61-148	6	30		
o-Xylene	ug/L	ND	20	20	21.1	20.9	105	105	70-148	1	30		
p-Isopropyltoluene	ug/L	ND	20	20	21.7	21.2	108	106	70-146	2	30		
Styrene	ug/L	ND	20	20	20.5	20.9	102	104	70-135	2	30		
Tetrachloroethene	ug/L	ND	20	20	21.7	21.1	109	105	59-143	3	30		
Toluene	ug/L	ND	20	20	22.2	21.3	111	106	59-148	4	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	23.7	22.7	118	114	70-146	4	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.5	20.9	108	105	70-135	3	30		
Trichloroethene	ug/L	ND	20	20	23.3	22.1	116	110	70-147	5	30		
Trichlorofluoromethane	ug/L	ND	20	20	23.8	22.3	119	112	70-148	6	30		
Vinyl acetate	ug/L	ND	40	40	52.7	50.2	132	126	49-151	5	30		
Vinyl chloride	ug/L	ND	20	20	20.2	19.6	101	98	70-156	3	30		
Xylene (Total)	ug/L	ND	60	60	62.9	62.4	105	104	63-158	1	30		
1,2-Dichloroethane-d4 (S)	%						104	105	70-130				
4-Bromofluorobenzene (S)	%						100	100	70-130				
Toluene-d8 (S)	%						100	98	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

QC Batch:	607623	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 5035A/5030B	Analysis Description:	8260D 5035A 5030B SC
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92528353002, 92528353003, 92528353004

METHOD BLANK: 3200879 Matrix: Solid

Associated Lab Samples: 92528353002, 92528353003, 92528353004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	03/18/21 17:44	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	03/18/21 17:44	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	03/18/21 17:44	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	03/18/21 17:44	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	03/18/21 17:44	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	03/18/21 17:44	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	03/18/21 17:44	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	03/18/21 17:44	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	03/18/21 17:44	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	03/18/21 17:44	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	03/18/21 17:44	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	03/18/21 17:44	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	03/18/21 17:44	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	03/18/21 17:44	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	03/18/21 17:44	
2-Butanone (MEK)	ug/kg	ND	100	24.0	03/18/21 17:44	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
2-Hexanone	ug/kg	ND	50.0	4.8	03/18/21 17:44	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	03/18/21 17:44	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	03/18/21 17:44	
Acetone	ug/kg	ND	100	32.1	03/18/21 17:44	
Benzene	ug/kg	ND	5.0	2.0	03/18/21 17:44	
Bromobenzene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
Bromochloromethane	ug/kg	ND	5.0	1.5	03/18/21 17:44	
Bromodichloromethane	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Bromoform	ug/kg	ND	5.0	1.8	03/18/21 17:44	
Bromomethane	ug/kg	ND	10.0	7.9	03/18/21 17:44	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Chlorobenzene	ug/kg	ND	5.0	0.96	03/18/21 17:44	
Chloroethane	ug/kg	ND	10.0	3.9	03/18/21 17:44	
Chloroform	ug/kg	ND	5.0	3.0	03/18/21 17:44	
Chloromethane	ug/kg	ND	10.0	4.2	03/18/21 17:44	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	03/18/21 17:44	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

METHOD BLANK: 3200879

Matrix: Solid

Associated Lab Samples: 92528353002, 92528353003, 92528353004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	03/18/21 17:44	
Dibromomethane	ug/kg	ND	5.0	1.1	03/18/21 17:44	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	03/18/21 17:44	
Diisopropyl ether	ug/kg	ND	5.0	1.4	03/18/21 17:44	
Ethylbenzene	ug/kg	ND	5.0	2.3	03/18/21 17:44	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	03/18/21 17:44	IK
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	03/18/21 17:44	
m&p-Xylene	ug/kg	ND	10.0	3.4	03/18/21 17:44	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	03/18/21 17:44	
Methylene Chloride	ug/kg	ND	20.0	13.7	03/18/21 17:44	
n-Butylbenzene	ug/kg	ND	5.0	2.4	03/18/21 17:44	
n-Propylbenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
Naphthalene	ug/kg	ND	5.0	2.6	03/18/21 17:44	
o-Xylene	ug/kg	ND	5.0	2.2	03/18/21 17:44	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	03/18/21 17:44	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	03/18/21 17:44	
Styrene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	03/18/21 17:44	v2
Tetrachloroethene	ug/kg	ND	5.0	1.6	03/18/21 17:44	
Toluene	ug/kg	ND	5.0	1.4	03/18/21 17:44	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	03/18/21 17:44	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	03/18/21 17:44	
Trichloroethene	ug/kg	ND	5.0	1.3	03/18/21 17:44	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	03/18/21 17:44	
Vinyl acetate	ug/kg	ND	50.0	3.6	03/18/21 17:44	
Vinyl chloride	ug/kg	ND	10.0	2.5	03/18/21 17:44	
Xylene (Total)	ug/kg	ND	10.0	2.8	03/18/21 17:44	
1,2-Dichloroethane-d4 (S)	%	112	70-130		03/18/21 17:44	
4-Bromofluorobenzene (S)	%	92	69-134		03/18/21 17:44	
Toluene-d8 (S)	%	101	70-130		03/18/21 17:44	

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1280	102	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1180	95	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1280	102	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1310	105	70-130	
1,1-Dichloroethane	ug/kg	1250	1200	96	70-130	
1,1-Dichloroethene	ug/kg	1250	1240	99	70-130	
1,1-Dichloropropene	ug/kg	1250	1200	96	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1240	99	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1280	102	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1290	103	68-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1290	103	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1170	94	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1320	105	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1330	106	70-130	
1,2-Dichloroethane	ug/kg	1250	1150	92	63-130	
1,2-Dichloropropane	ug/kg	1250	1290	103	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1270	102	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1300	104	70-130	
1,3-Dichloropropane	ug/kg	1250	1300	104	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1280	103	70-130	
2,2-Dichloropropane	ug/kg	1250	1270	101	66-130	
2-Butanone (MEK)	ug/kg	2500	2270	91	70-130	
2-Chlorotoluene	ug/kg	1250	1290	103	70-130	
2-Hexanone	ug/kg	2500	2490	99	70-130	
4-Chlorotoluene	ug/kg	1250	1340	107	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2420	97	70-130	
Acetone	ug/kg	2500	2310	93	69-130	
Benzene	ug/kg	1250	1260	101	70-130	
Bromobenzene	ug/kg	1250	1240	99	70-130	
Bromochloromethane	ug/kg	1250	1320	106	70-130	
Bromodichloromethane	ug/kg	1250	1160	93	69-130	
Bromoform	ug/kg	1250	1360	109	70-130	
Bromomethane	ug/kg	1250	1820	146	52-130	IH,IK,L1,v1
Carbon tetrachloride	ug/kg	1250	1220	98	70-130	
Chlorobenzene	ug/kg	1250	1290	103	70-130	
Chloroethane	ug/kg	1250	1270	102	65-130	
Chloroform	ug/kg	1250	1190	95	70-130	
Chloromethane	ug/kg	1250	1330	107	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1190	95	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1260	101	70-130	
Dibromochloromethane	ug/kg	1250	1360	109	70-130	
Dibromomethane	ug/kg	1250	1270	102	70-130	
Dichlorodifluoromethane	ug/kg	1250	1340	108	45-156	
Diisopropyl ether	ug/kg	1250	1200	96	70-130	
Ethylbenzene	ug/kg	1250	1340	107	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1370	109	66-130	IK
Isopropylbenzene (Cumene)	ug/kg	1250	1310	105	70-130	
m&p-Xylene	ug/kg	2500	2600	104	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1180	95	70-130	
Methylene Chloride	ug/kg	1250	1240	99	65-130	
n-Butylbenzene	ug/kg	1250	1330	107	67-130	
n-Propylbenzene	ug/kg	1250	1330	107	70-130	
Naphthalene	ug/kg	1250	1200	96	70-130	
o-Xylene	ug/kg	1250	1330	107	70-130	
p-Isopropyltoluene	ug/kg	1250	1300	104	67-130	
sec-Butylbenzene	ug/kg	1250	1280	102	69-130	
Styrene	ug/kg	1250	1350	108	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3200880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	923	74	67-130	v2
Tetrachloroethene	ug/kg	1250	1290	103	70-130	
Toluene	ug/kg	1250	1190	95	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1260	101	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1260	101	68-130	
Trichloroethene	ug/kg	1250	1280	102	70-130	
Trichlorofluoromethane	ug/kg	1250	1230	98	70-130	
Vinyl acetate	ug/kg	2500	2920	117	70-130	
Vinyl chloride	ug/kg	1250	1250	100	61-130	
Xylene (Total)	ug/kg	3750	3940	105	70-130	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			97	69-134	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE SAMPLE: 3200882

Parameter	Units	92528353002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	1690	1890	112	70-131	
1,1,1-Trichloroethane	ug/kg	ND	1690	1860	110	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1690	1820	108	66-130	
1,1,2-Trichloroethane	ug/kg	ND	1690	1970	117	66-133	
1,1-Dichloroethane	ug/kg	ND	1690	1910	113	65-130	
1,1-Dichloroethene	ug/kg	ND	1690	1950	115	10-158	
1,1-Dichloropropene	ug/kg	ND	1690	1860	110	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	1690	1610	95	27-138	
1,2,3-Trichloropropane	ug/kg	ND	1690	1770	105	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	1690	1710	101	51-134	
1,2,4-Trimethylbenzene	ug/kg	ND	1690	1890	112	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	1690	1430	85	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	1690	1890	112	70-130	
1,2-Dichlorobenzene	ug/kg	ND	1690	2020	120	69-130	
1,2-Dichloroethane	ug/kg	ND	1690	1820	108	59-130	
1,2-Dichloropropane	ug/kg	ND	1690	1990	118	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	1690	1880	111	65-137	
1,3-Dichlorobenzene	ug/kg	ND	1690	1890	112	70-130	
1,3-Dichloropropane	ug/kg	ND	1690	1980	118	70-130	
1,4-Dichlorobenzene	ug/kg	ND	1690	1880	111	68-130	
2,2-Dichloropropane	ug/kg	ND	1690	1810	107	32-130	
2-Butanone (MEK)	ug/kg	ND	3370	2940	87	10-136	
2-Chlorotoluene	ug/kg	ND	1690	1930	115	69-141	
2-Hexanone	ug/kg	ND	3370	3140	93	10-144	
4-Chlorotoluene	ug/kg	ND	1690	1970	117	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	3370	3340	99	25-143	
Acetone	ug/kg	ND	3370	2430	72	10-130	
Benzene	ug/kg	ND	1690	1960	116	67-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

MATRIX SPIKE SAMPLE: 3200882		92528353002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromobenzene	ug/kg	ND	1690	1900	112	70-130	
Bromochloromethane	ug/kg	ND	1690	2100	125	69-134	
Bromodichloromethane	ug/kg	ND	1690	1710	101	64-130	
Bromoform	ug/kg	ND	1690	1780	106	62-130	
Bromomethane	ug/kg	ND	1690	1990	118	20-176	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	1690	1790	106	65-140	
Chlorobenzene	ug/kg	ND	1690	1950	116	70-130	
Chloroethane	ug/kg	ND	1690	713	42	10-130	
Chloroform	ug/kg	ND	1690	1940	115	63-130	
Chloromethane	ug/kg	ND	1690	2290	136	58-130	M1
cis-1,2-Dichloroethene	ug/kg	ND	1690	1880	112	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	1690	1860	110	67-130	
Dibromochloromethane	ug/kg	ND	1690	1860	110	67-130	
Dibromomethane	ug/kg	ND	1690	1890	112	63-131	
Dichlorodifluoromethane	ug/kg	ND	1690	2000	118	44-180	
Diisopropyl ether	ug/kg	ND	1690	1850	110	63-130	
Ethylbenzene	ug/kg	9.2J	1690	2030	120	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	1690	1920	114	64-150	IK
Isopropylbenzene (Cumene)	ug/kg	ND	1690	1920	114	69-135	
m&p-Xylene	ug/kg	65.9	3370	3890	113	60-133	
Methyl-tert-butyl ether	ug/kg	ND	1690	1800	106	65-130	
Methylene Chloride	ug/kg	ND	1690	1990	118	61-130	
n-Butylbenzene	ug/kg	ND	1690	1880	111	65-140	
n-Propylbenzene	ug/kg	ND	1690	1960	116	67-140	
Naphthalene	ug/kg	ND	1690	1460	86	15-145	
o-Xylene	ug/kg	24.0	1690	1950	114	66-133	
p-Isopropyltoluene	ug/kg	ND	1690	1870	111	56-147	
sec-Butylbenzene	ug/kg	ND	1690	1900	113	65-139	
Styrene	ug/kg	ND	1690	1990	118	70-132	
tert-Butylbenzene	ug/kg	ND	1690	1400	83	62-135	v2
Tetrachloroethene	ug/kg	ND	1690	1840	109	70-135	
Toluene	ug/kg	ND	1690	1810	107	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	1690	2000	119	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	1690	1750	104	62-130	
Trichloroethene	ug/kg	ND	1690	1990	118	70-135	
Trichlorofluoromethane	ug/kg	ND	1690	800	47	10-130	
Vinyl acetate	ug/kg	ND	3370	4030	120	53-130	
Vinyl chloride	ug/kg	ND	1690	1930	115	61-148	
Xylene (Total)	ug/kg	89.9	5060	5840	114	63-132	
1,2-Dichloroethane-d4 (S)	%				126	70-130	
4-Bromofluorobenzene (S)	%				97	69-134	
Toluene-d8 (S)	%				99	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3200881

Parameter	Units	92528011007 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	3.4J	2.5J		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	IH,IK,v1
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	IK
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3200881

Parameter	Units	92528011007 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	10.5J	8.5J		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	7.8	7.7	1	30	
o-Xylene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30 v2	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	9.7	8.8	9	30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	10.5J	ND		30	
1,2-Dichloroethane-d4 (S)	%	108	108			
4-Bromofluorobenzene (S)	%	91	93			
Toluene-d8 (S)	%	102	102			

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498
Pace Project No.: 92528353

QC Batch: 608035 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528353001

METHOD BLANK: 3203111 Matrix: Solid

Associated Lab Samples: 92528353001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	03/19/21 15:50	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	03/19/21 15:50	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	03/19/21 15:50	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	03/19/21 15:50	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	03/19/21 15:50	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	03/19/21 15:50	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	03/19/21 15:50	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	03/19/21 15:50	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	03/19/21 15:50	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	03/19/21 15:50	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	03/19/21 15:50	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	03/19/21 15:50	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	03/19/21 15:50	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	03/19/21 15:50	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	03/19/21 15:50	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	03/19/21 15:50	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	03/19/21 15:50	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	03/19/21 15:50	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	03/19/21 15:50	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	03/19/21 15:50	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	03/19/21 15:50	
2-Butanone (MEK)	ug/kg	ND	100	24.0	03/19/21 15:50	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	03/19/21 15:50	
2-Hexanone	ug/kg	ND	50.0	4.8	03/19/21 15:50	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	03/19/21 15:50	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	03/19/21 15:50	
Acetone	ug/kg	ND	100	32.1	03/19/21 15:50	
Benzene	ug/kg	ND	5.0	2.0	03/19/21 15:50	
Bromobenzene	ug/kg	ND	5.0	1.6	03/19/21 15:50	
Bromochloromethane	ug/kg	ND	5.0	1.5	03/19/21 15:50	
Bromodichloromethane	ug/kg	ND	5.0	1.9	03/19/21 15:50	
Bromoform	ug/kg	ND	5.0	1.8	03/19/21 15:50	
Bromomethane	ug/kg	ND	10.0	7.9	03/19/21 15:50	v1
Carbon tetrachloride	ug/kg	ND	5.0	1.9	03/19/21 15:50	
Chlorobenzene	ug/kg	ND	5.0	0.96	03/19/21 15:50	
Chloroethane	ug/kg	ND	10.0	3.9	03/19/21 15:50	
Chloroform	ug/kg	ND	5.0	3.0	03/19/21 15:50	
Chloromethane	ug/kg	ND	10.0	4.2	03/19/21 15:50	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	03/19/21 15:50	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	03/19/21 15:50	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

METHOD BLANK: 3203111

Matrix: Solid

Associated Lab Samples: 92528353001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	03/19/21 15:50	
Dibromomethane	ug/kg	ND	5.0	1.1	03/19/21 15:50	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	03/19/21 15:50	
Diisopropyl ether	ug/kg	ND	5.0	1.4	03/19/21 15:50	
Ethylbenzene	ug/kg	ND	5.0	2.3	03/19/21 15:50	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	03/19/21 15:50	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	03/19/21 15:50	
m&p-Xylene	ug/kg	ND	10.0	3.4	03/19/21 15:50	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	03/19/21 15:50	
Methylene Chloride	ug/kg	ND	20.0	13.7	03/19/21 15:50	
n-Butylbenzene	ug/kg	ND	5.0	2.4	03/19/21 15:50	
n-Propylbenzene	ug/kg	ND	5.0	1.8	03/19/21 15:50	
Naphthalene	ug/kg	ND	5.0	2.6	03/19/21 15:50	
o-Xylene	ug/kg	ND	5.0	2.2	03/19/21 15:50	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	03/19/21 15:50	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	03/19/21 15:50	
Styrene	ug/kg	ND	5.0	1.3	03/19/21 15:50	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	03/19/21 15:50	
Tetrachloroethene	ug/kg	ND	5.0	1.6	03/19/21 15:50	
Toluene	ug/kg	ND	5.0	1.4	03/19/21 15:50	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	03/19/21 15:50	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	03/19/21 15:50	
Trichloroethene	ug/kg	ND	5.0	1.3	03/19/21 15:50	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	03/19/21 15:50	
Vinyl acetate	ug/kg	ND	50.0	3.6	03/19/21 15:50	
Vinyl chloride	ug/kg	ND	10.0	2.5	03/19/21 15:50	
Xylene (Total)	ug/kg	ND	10.0	2.8	03/19/21 15:50	
1,2-Dichloroethane-d4 (S)	%	106	70-130		03/19/21 15:50	
4-Bromofluorobenzene (S)	%	96	69-134		03/19/21 15:50	
Toluene-d8 (S)	%	100	70-130		03/19/21 15:50	

LABORATORY CONTROL SAMPLE: 3203112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1260	101	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1260	101	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1180	94	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1260	101	70-130	
1,1-Dichloroethane	ug/kg	1250	1210	97	70-130	
1,1-Dichloroethene	ug/kg	1250	1240	99	70-130	
1,1-Dichloropropene	ug/kg	1250	1250	100	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1250	100	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1160	92	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1240	99	68-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3203112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1210	97	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1270	101	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1260	101	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1220	97	70-130	
1,2-Dichloroethane	ug/kg	1250	1210	97	63-130	
1,2-Dichloropropane	ug/kg	1250	1190	95	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1160	92	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1190	95	70-130	
1,3-Dichloropropane	ug/kg	1250	1230	98	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1210	97	70-130	
2,2-Dichloropropane	ug/kg	1250	1190	95	66-130	
2-Butanone (MEK)	ug/kg	2500	2390	95	70-130	
2-Chlorotoluene	ug/kg	1250	1210	97	70-130	
2-Hexanone	ug/kg	2500	2250	90	70-130	
4-Chlorotoluene	ug/kg	1250	1130	90	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2290	91	70-130	
Acetone	ug/kg	2500	2420	97	69-130	
Benzene	ug/kg	1250	1240	99	70-130	
Bromobenzene	ug/kg	1250	1240	99	70-130	
Bromochloromethane	ug/kg	1250	1330	107	70-130	
Bromodichloromethane	ug/kg	1250	1140	91	69-130	
Bromoform	ug/kg	1250	1320	105	70-130	
Bromomethane	ug/kg	1250	1560	125	52-130 v1	
Carbon tetrachloride	ug/kg	1250	1270	101	70-130	
Chlorobenzene	ug/kg	1250	1210	97	70-130	
Chloroethane	ug/kg	1250	1350	108	65-130	
Chloroform	ug/kg	1250	1160	93	70-130	
Chloromethane	ug/kg	1250	1100	88	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1180	95	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1230	98	70-130	
Dibromochloromethane	ug/kg	1250	1320	106	70-130	
Dibromomethane	ug/kg	1250	1340	107	70-130	
Dichlorodifluoromethane	ug/kg	1250	1360	109	45-156	
Diisopropyl ether	ug/kg	1250	1130	91	70-130	
Ethylbenzene	ug/kg	1250	1140	91	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1260	101	66-130	
Isopropylbenzene (Cumene)	ug/kg	1250	1200	96	70-130	
m&p-Xylene	ug/kg	2500	2350	94	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1200	96	70-130	
Methylene Chloride	ug/kg	1250	1190	95	65-130	
n-Butylbenzene	ug/kg	1250	1130	91	67-130	
n-Propylbenzene	ug/kg	1250	1160	93	70-130	
Naphthalene	ug/kg	1250	1220	97	70-130	
o-Xylene	ug/kg	1250	1200	96	70-130	
p-Isopropyltoluene	ug/kg	1250	1180	94	67-130	
sec-Butylbenzene	ug/kg	1250	1140	91	69-130	
Styrene	ug/kg	1250	1270	102	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3203112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	1120	90	67-130	
Tetrachloroethene	ug/kg	1250	1240	99	70-130	
Toluene	ug/kg	1250	1230	99	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1210	96	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1220	97	68-130	
Trichloroethene	ug/kg	1250	1270	102	70-130	
Trichlorofluoromethane	ug/kg	1250	1380	110	70-130	
Vinyl acetate	ug/kg	2500	2600	104	70-130	
Vinyl chloride	ug/kg	1250	1280	102	61-130	
Xylene (Total)	ug/kg	3750	3550	95	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			94	69-134	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE SAMPLE: 3203114

Parameter	Units	92528603024 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	516	496	96	70-131	
1,1,1-Trichloroethane	ug/kg	ND	516	457	89	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	516	471	91	66-130	
1,1,2-Trichloroethane	ug/kg	ND	516	511	99	66-133	
1,1-Dichloroethane	ug/kg	ND	516	447	87	65-130	
1,1-Dichloroethene	ug/kg	ND	516	459	89	10-158	
1,1-Dichloropropene	ug/kg	ND	516	455	88	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	516	433	84	27-138	
1,2,3-Trichloropropane	ug/kg	ND	516	460	89	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	516	454	88	51-134	
1,2,4-Trimethylbenzene	ug/kg	ND	516	479	93	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	516	393	76	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	516	489	95	70-130	
1,2-Dichlorobenzene	ug/kg	ND	516	505	98	69-130	
1,2-Dichloroethane	ug/kg	ND	516	427	83	59-130	
1,2-Dichloropropane	ug/kg	ND	516	499	97	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	516	487	94	65-137	
1,3-Dichlorobenzene	ug/kg	ND	516	478	93	70-130	
1,3-Dichloropropane	ug/kg	ND	516	498	97	70-130	
1,4-Dichlorobenzene	ug/kg	ND	516	476	92	68-130	
2,2-Dichloropropane	ug/kg	ND	516	450	87	32-130	
2-Butanone (MEK)	ug/kg	ND	1030	691	67	10-136	
2-Chlorotoluene	ug/kg	ND	516	488	94	69-141	
2-Hexanone	ug/kg	ND	1030	788	76	10-144	
4-Chlorotoluene	ug/kg	ND	516	490	95	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1030	811	79	25-143	
Acetone	ug/kg	ND	1030	537	52	10-130	
Benzene	ug/kg	ND	516	498	97	67-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

MATRIX SPIKE SAMPLE: 3203114		92528603024	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromobenzene	ug/kg	ND	516	552	107	70-130	
Bromochloromethane	ug/kg	ND	516	503	98	69-134	
Bromodichloromethane	ug/kg	ND	516	433	84	64-130	
Bromoform	ug/kg	ND	516	470	91	62-130	
Bromomethane	ug/kg	ND	516	381	74	20-176	v1
Carbon tetrachloride	ug/kg	ND	516	461	89	65-140	
Chlorobenzene	ug/kg	ND	516	492	95	70-130	
Chloroethane	ug/kg	ND	516	141	27	10-130	
Chloroform	ug/kg	ND	516	473	92	63-130	
Chloromethane	ug/kg	ND	516	564	109	58-130	
cis-1,2-Dichloroethene	ug/kg	ND	516	453	88	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	516	460	89	67-130	
Dibromochloromethane	ug/kg	ND	516	487	94	67-130	
Dibromomethane	ug/kg	ND	516	488	95	63-131	
Dichlorodifluoromethane	ug/kg	ND	516	499	97	44-180	
Diisopropyl ether	ug/kg	ND	516	427	83	63-130	
Ethylbenzene	ug/kg	ND	516	510	99	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	516	575	111	64-150	
Isopropylbenzene (Cumene)	ug/kg	ND	516	512	99	69-135	
m&p-Xylene	ug/kg	ND	1030	974	94	60-133	
Methyl-tert-butyl ether	ug/kg	ND	516	456	88	65-130	
Methylene Chloride	ug/kg	ND	516	468	91	61-130	
n-Butylbenzene	ug/kg	ND	516	503	97	65-140	
n-Propylbenzene	ug/kg	ND	516	506	98	67-140	
Naphthalene	ug/kg	ND	516	407	79	15-145	
o-Xylene	ug/kg	ND	516	508	98	66-133	
p-Isopropyltoluene	ug/kg	ND	516	501	97	56-147	
sec-Butylbenzene	ug/kg	ND	516	497	96	65-139	
Styrene	ug/kg	ND	516	504	98	70-132	
tert-Butylbenzene	ug/kg	ND	516	373	72	62-135	v3
Tetrachloroethene	ug/kg	ND	516	471	91	70-135	
Toluene	ug/kg	ND	516	467	90	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	516	470	91	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	516	448	87	62-130	
Trichloroethene	ug/kg	ND	516	504	98	70-135	
Trichlorofluoromethane	ug/kg	ND	516	161	31	10-130	
Vinyl acetate	ug/kg	ND	1030	930	90	53-130	
Vinyl chloride	ug/kg	ND	516	474	92	61-148	
Xylene (Total)	ug/kg	ND	1550	1480	96	63-132	
1,2-Dichloroethane-d4 (S)	%				115	70-130	
4-Bromofluorobenzene (S)	%				99	69-134	
Toluene-d8 (S)	%				99	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3203113

Parameter	Units	92528603005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	5.3	4.0J		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	3.6J	3.2J		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30 v1	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	12.5	12.0	4	30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3203113

Parameter	Units	92528603005 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	21.5	20.6	4	30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	3.5J	3.3J		30	
Naphthalene	ug/kg	ND	ND		30	
o-Xylene	ug/kg	9.6	9.5	2	30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	31.1	30.1	3	30	
1,2-Dichloroethane-d4 (S)	%	104	107			
4-Bromofluorobenzene (S)	%	96	97			
Toluene-d8 (S)	%	102	101			

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498
 Pace Project No.: 92528353

QC Batch: 607492 Analysis Method: EPA 8270E
 QC Batch Method: EPA 3546 Analysis Description: 8270E Solid MSSV Microwave
 Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92528353001, 92528353002, 92528353003, 92528353004

METHOD BLANK: 3200335 Matrix: Solid
 Associated Lab Samples: 92528353001, 92528353002, 92528353003, 92528353004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	336	118	03/18/21 15:41	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	336	160	03/18/21 15:41	
2,4,5-Trichlorophenol	ug/kg	ND	336	154	03/18/21 15:41	
2,4,6-Trichlorophenol	ug/kg	ND	336	138	03/18/21 15:41	
2,4-Dichlorophenol	ug/kg	ND	336	131	03/18/21 15:41	
2,4-Dimethylphenol	ug/kg	ND	336	139	03/18/21 15:41	
2,4-Dinitrophenol	ug/kg	ND	1680	1040	03/18/21 15:41	
2,4-Dinitrotoluene	ug/kg	ND	336	129	03/18/21 15:41	
2,6-Dinitrotoluene	ug/kg	ND	336	123	03/18/21 15:41	
2-Chloronaphthalene	ug/kg	ND	336	133	03/18/21 15:41	
2-Chlorophenol	ug/kg	ND	336	126	03/18/21 15:41	
2-Methylnaphthalene	ug/kg	ND	336	134	03/18/21 15:41	
2-Methylphenol(o-Cresol)	ug/kg	ND	336	137	03/18/21 15:41	
2-Nitroaniline	ug/kg	ND	1680	275	03/18/21 15:41	
2-Nitrophenol	ug/kg	ND	336	145	03/18/21 15:41	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	336	135	03/18/21 15:41	
3,3'-Dichlorobenzidine	ug/kg	ND	671	227	03/18/21 15:41	IL
3-Nitroaniline	ug/kg	ND	1680	263	03/18/21 15:41	
4,6-Dinitro-2-methylphenol	ug/kg	ND	671	313	03/18/21 15:41	
4-Bromophenylphenyl ether	ug/kg	ND	336	129	03/18/21 15:41	
4-Chloro-3-methylphenol	ug/kg	ND	671	236	03/18/21 15:41	
4-Chloroaniline	ug/kg	ND	671	263	03/18/21 15:41	
4-Chlorophenylphenyl ether	ug/kg	ND	336	125	03/18/21 15:41	
4-Nitroaniline	ug/kg	ND	671	255	03/18/21 15:41	
4-Nitrophenol	ug/kg	ND	1680	649	03/18/21 15:41	
Acenaphthene	ug/kg	ND	336	118	03/18/21 15:41	
Acenaphthylene	ug/kg	ND	336	118	03/18/21 15:41	
Aniline	ug/kg	ND	336	131	03/18/21 15:41	
Anthracene	ug/kg	ND	336	110	03/18/21 15:41	
Benzo(a)anthracene	ug/kg	ND	336	112	03/18/21 15:41	
Benzo(b)fluoranthene	ug/kg	ND	336	112	03/18/21 15:41	
Benzo(g,h,i)perylene	ug/kg	ND	336	130	03/18/21 15:41	
Benzo(k)fluoranthene	ug/kg	ND	336	118	03/18/21 15:41	
Benzoic Acid	ug/kg	ND	1680	721	03/18/21 15:41	
Benzyl alcohol	ug/kg	ND	671	254	03/18/21 15:41	
bis(2-Chloroethoxy)methane	ug/kg	ND	336	139	03/18/21 15:41	
bis(2-Chloroethyl) ether	ug/kg	ND	336	126	03/18/21 15:41	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	336	130	03/18/21 15:41	v1
Butylbenzylphthalate	ug/kg	ND	336	141	03/18/21 15:41	v1
Chrysene	ug/kg	ND	336	122	03/18/21 15:41	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

METHOD BLANK: 3200335

Matrix: Solid

Associated Lab Samples: 92528353001, 92528353002, 92528353003, 92528353004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Di-n-butylphthalate	ug/kg	ND	336	113	03/18/21 15:41	
Di-n-octylphthalate	ug/kg	ND	336	132	03/18/21 15:41	v1
Dibenz(a,h)anthracene	ug/kg	ND	336	129	03/18/21 15:41	
Dibenzofuran	ug/kg	ND	336	121	03/18/21 15:41	
Diethylphthalate	ug/kg	ND	336	123	03/18/21 15:41	
Dimethylphthalate	ug/kg	ND	336	122	03/18/21 15:41	
Fluoranthene	ug/kg	ND	336	115	03/18/21 15:41	
Fluorene	ug/kg	ND	336	118	03/18/21 15:41	
Hexachlorobenzene	ug/kg	ND	336	131	03/18/21 15:41	
Hexachlorocyclopentadiene	ug/kg	ND	336	192	03/18/21 15:41	
Hexachloroethane	ug/kg	ND	336	128	03/18/21 15:41	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	336	132	03/18/21 15:41	
Isophorone	ug/kg	ND	336	149	03/18/21 15:41	
N-Nitroso-di-n-propylamine	ug/kg	ND	336	126	03/18/21 15:41	
N-Nitrosodimethylamine	ug/kg	ND	336	113	03/18/21 15:41	
N-Nitrosodiphenylamine	ug/kg	ND	336	119	03/18/21 15:41	
Nitrobenzene	ug/kg	ND	336	156	03/18/21 15:41	
Pentachlorophenol	ug/kg	ND	671	328	03/18/21 15:41	
Phenanthrene	ug/kg	ND	336	110	03/18/21 15:41	
Phenol	ug/kg	ND	336	149	03/18/21 15:41	
Pyrene	ug/kg	ND	336	136	03/18/21 15:41	
Pyridine	ug/kg	ND	336	106	03/18/21 15:41	
2,4,6-Tribromophenol (S)	%	71	18-130		03/18/21 15:41	
2-Fluorobiphenyl (S)	%	75	19-130		03/18/21 15:41	
2-Fluorophenol (S)	%	77	18-130		03/18/21 15:41	
Nitrobenzene-d5 (S)	%	75	21-130		03/18/21 15:41	
Phenol-d6 (S)	%	70	18-130		03/18/21 15:41	
Terphenyl-d14 (S)	%	102	15-130		03/18/21 15:41	

LABORATORY CONTROL SAMPLE: 3200336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1680	1170	70	54-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	1680	1080	65	38-130	
2,4,5-Trichlorophenol	ug/kg	1680	1280	76	49-130	
2,4,6-Trichlorophenol	ug/kg	1680	1230	73	50-130	
2,4-Dichlorophenol	ug/kg	1680	1190	71	51-130	
2,4-Dimethylphenol	ug/kg	1680	1230	73	53-130	
2,4-Dinitrophenol	ug/kg	8390	5420	65	39-130	
2,4-Dinitrotoluene	ug/kg	1680	1250	74	53-130	
2,6-Dinitrotoluene	ug/kg	1680	1280	77	55-130	
2-Chloronaphthalene	ug/kg	1680	1270	76	48-130	
2-Chlorophenol	ug/kg	1680	1180	70	54-130	
2-Methylnaphthalene	ug/kg	1680	1180	71	57-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3200336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	1680	1190	71	50-130	
2-Nitroaniline	ug/kg	3360	2530	75	49-130	
2-Nitrophenol	ug/kg	1680	1240	74	50-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	1680	1140	68	50-130	
3,3'-Dichlorobenzidine	ug/kg	3360	2290	68	47-130	IL
3-Nitroaniline	ug/kg	3360	2610	78	45-130	
4,6-Dinitro-2-methylphenol	ug/kg	3360	2430	72	50-142	
4-Bromophenylphenyl ether	ug/kg	1680	1270	75	55-130	
4-Chloro-3-methylphenol	ug/kg	3360	2390	71	52-130	
4-Chloroaniline	ug/kg	3360	2190	65	49-130	
4-Chlorophenylphenyl ether	ug/kg	1680	1170	70	53-130	
4-Nitroaniline	ug/kg	3360	2330	70	51-130	
4-Nitrophenol	ug/kg	8390	5640	67	40-130	
Acenaphthene	ug/kg	1680	1270	76	56-130	
Acenaphthylene	ug/kg	1680	1320	78	58-130	
Aniline	ug/kg	1680	1030	61	44-130	
Anthracene	ug/kg	1680	1290	77	60-130	
Benzo(a)anthracene	ug/kg	1680	1430	85	59-130	
Benzo(b)fluoranthene	ug/kg	1680	1290	77	54-130	
Benzo(g,h,i)perylene	ug/kg	1680	1420	85	59-130	
Benzo(k)fluoranthene	ug/kg	1680	1310	78	54-130	
Benzoic Acid	ug/kg	8390	4200	50	19-130	
Benzyl alcohol	ug/kg	3360	2210	66	50-130	
bis(2-Chloroethoxy)methane	ug/kg	1680	1190	71	55-130	
bis(2-Chloroethyl) ether	ug/kg	1680	1210	72	53-130	
bis(2-Ethylhexyl)phthalate	ug/kg	1680	1430	85	58-130	v1
Butylbenzylphthalate	ug/kg	1680	1490	89	46-138	v1
Chrysene	ug/kg	1680	1440	86	57-130	
Di-n-butylphthalate	ug/kg	1680	1270	76	57-130	
Di-n-octylphthalate	ug/kg	1680	1520	91	57-130	v1
Dibenz(a,h)anthracene	ug/kg	1680	1400	84	60-130	
Dibenzofuran	ug/kg	1680	1250	75	54-130	
Diethylphthalate	ug/kg	1680	1260	75	55-130	
Dimethylphthalate	ug/kg	1680	1240	74	57-130	
Fluoranthene	ug/kg	1680	1240	74	57-130	
Fluorene	ug/kg	1680	1240	74	56-130	
Hexachlorobenzene	ug/kg	1680	1280	76	53-130	
Hexachlorocyclopentadiene	ug/kg	1680	843	50	23-130	
Hexachloroethane	ug/kg	1680	1190	71	48-130	
Indeno(1,2,3-cd)pyrene	ug/kg	1680	1440	86	61-130	
Isophorone	ug/kg	1680	1180	70	49-130	
N-Nitroso-di-n-propylamine	ug/kg	1680	1100	65	52-130	
N-Nitrosodimethylamine	ug/kg	1680	1270	76	45-130	
N-Nitrosodiphenylamine	ug/kg	1680	1290	77	56-130	
Nitrobenzene	ug/kg	1680	1320	79	50-130	
Pentachlorophenol	ug/kg	3360	2180	65	33-130	
Phenanthrene	ug/kg	1680	1300	78	60-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

LABORATORY CONTROL SAMPLE: 3200336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol	ug/kg	1680	1250	74	54-130	
Pyrene	ug/kg	1680	1480	88	61-130	
Pyridine	ug/kg	1680	1030	62	35-130	
2,4,6-Tribromophenol (S)	%			72	18-130	
2-Fluorobiphenyl (S)	%			71	19-130	
2-Fluorophenol (S)	%			72	18-130	
Nitrobenzene-d5 (S)	%			70	21-130	
Phenol-d6 (S)	%			67	18-130	
Terphenyl-d14 (S)	%			95	15-130	

MATRIX SPIKE SAMPLE: 3200337

Parameter	Units	92527967001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	ND	1950	1230	63	30-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	1950	1230	63	30-130	
2,4,5-Trichlorophenol	ug/kg	ND	1950	1380	71	26-130	
2,4,6-Trichlorophenol	ug/kg	ND	1950	1220	63	23-130	
2,4-Dichlorophenol	ug/kg	ND	1950	1320	68	29-130	
2,4-Dimethylphenol	ug/kg	ND	1950	1380	71	13-130	
2,4-Dinitrophenol	ug/kg	ND	9710	ND	10	10-131	
2,4-Dinitrotoluene	ug/kg	ND	1950	1420	73	28-130	
2,6-Dinitrotoluene	ug/kg	ND	1950	1470	75	36-130	
2-Chloronaphthalene	ug/kg	ND	1950	1290	66	27-130	
2-Chlorophenol	ug/kg	ND	1950	1340	69	29-130	
2-Methylnaphthalene	ug/kg	ND	1950	1220	63	29-130	
2-Methylphenol(o-Cresol)	ug/kg	ND	1950	1320	68	20-130	
2-Nitroaniline	ug/kg	ND	3880	2930	75	29-130	
2-Nitrophenol	ug/kg	ND	1950	1380	71	26-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	1950	1250	64	10-176	
3,3'-Dichlorobenzidine	ug/kg	ND	3880	2900	75	15-130 IL	
3-Nitroaniline	ug/kg	ND	3880	2940	76	28-130	
4,6-Dinitro-2-methylphenol	ug/kg	ND	3880	1700	44	15-132	
4-Bromophenylphenyl ether	ug/kg	ND	1950	1290	67	35-130	
4-Chloro-3-methylphenol	ug/kg	ND	3880	2700	69	30-130	
4-Chloroaniline	ug/kg	ND	3880	2510	65	28-130	
4-Chlorophenylphenyl ether	ug/kg	ND	1950	1200	62	32-130	
4-Nitroaniline	ug/kg	ND	3880	2750	71	30-130	
4-Nitrophenol	ug/kg	ND	9710	4760	49	17-130	
Acenaphthene	ug/kg	ND	1950	1310	67	29-130	
Acenaphthylene	ug/kg	ND	1950	1350	69	31-130	
Aniline	ug/kg	ND	1950	1160	60	10-130	
Anthracene	ug/kg	ND	1950	1330	69	33-130	
Benzo(a)anthracene	ug/kg	ND	1950	1460	75	32-130	
Benzo(b)fluoranthene	ug/kg	ND	1950	1320	68	33-130	
Benzo(g,h,i)perylene	ug/kg	ND	1950	1490	77	28-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

MATRIX SPIKE SAMPLE: 3200337		92527967001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Benzo(k)fluoranthene	ug/kg	ND	1950	1370	71	31-130	
Benzoic Acid	ug/kg	ND	9710	ND	1	10-130	M1
Benzyl alcohol	ug/kg	ND	3880	2440	63	31-130	
bis(2-Chloroethoxy)methane	ug/kg	ND	1950	1310	68	30-130	
bis(2-Chloroethyl) ether	ug/kg	ND	1950	1360	70	68-130	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	1950	1470	76	40-130	v1
Butylbenzylphthalate	ug/kg	ND	1950	1520	78	40-130	v1
Chrysene	ug/kg	ND	1950	1470	76	30-130	
Di-n-butylphthalate	ug/kg	ND	1950	1270	65	41-130	
Di-n-octylphthalate	ug/kg	ND	1950	1540	79	42-130	v1
Dibenz(a,h)anthracene	ug/kg	ND	1950	1530	79	27-130	
Dibenzofuran	ug/kg	ND	1950	1290	67	32-130	
Diethylphthalate	ug/kg	ND	1950	1410	72	40-130	
Dimethylphthalate	ug/kg	ND	1950	1450	75	37-130	
Fluoranthene	ug/kg	ND	1950	1280	66	26-130	
Fluorene	ug/kg	ND	1950	1270	66	31-130	
Hexachlorobenzene	ug/kg	ND	1950	1320	68	29-130	
Hexachlorocyclopentadiene	ug/kg	ND	1950	814	42	10-130	
Hexachloroethane	ug/kg	ND	1950	1280	66	21-130	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	1950	1510	78	28-130	
Isophorone	ug/kg	ND	1950	1300	67	32-130	
N-Nitroso-di-n-propylamine	ug/kg	ND	1950	1230	63	31-130	
N-Nitrosodimethylamine	ug/kg	ND	1950	1350	69	20-130	
N-Nitrosodiphenylamine	ug/kg	ND	1950	1410	72	32-130	
Nitrobenzene	ug/kg	ND	1950	1450	75	25-130	
Pentachlorophenol	ug/kg	ND	3880	1950	50	10-130	
Phenanthrene	ug/kg	ND	1950	1350	70	34-130	
Phenol	ug/kg	ND	1950	1380	71	14-130	
Pyrene	ug/kg	ND	1950	1500	77	31-130	
Pyridine	ug/kg	ND	1950	1180	61	10-130	
2,4,6-Tribromophenol (S)	%				68	18-130	
2-Fluorobiphenyl (S)	%				61	19-130	
2-Fluorophenol (S)	%				65	18-130	
Nitrobenzene-d5 (S)	%				68	21-130	
Phenol-d6 (S)	%				63	18-130	
Terphenyl-d14 (S)	%				82	15-130	

SAMPLE DUPLICATE: 3200338

Parameter	Units	92527967002 Result	Dup Result	RPD	Max RPD	Qualifiers
1-Methylnaphthalene	ug/kg	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	ND		30	
2,4,5-Trichlorophenol	ug/kg	ND	ND		30	
2,4,6-Trichlorophenol	ug/kg	ND	ND		30	
2,4-Dichlorophenol	ug/kg	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3200338

Parameter	Units	92527967002 Result	Dup Result	RPD	Max RPD	Qualifiers
2,4-Dimethylphenol	ug/kg	ND	ND		30	
2,4-Dinitrophenol	ug/kg	ND	ND		30	
2,4-Dinitrotoluene	ug/kg	ND	ND		30	
2,6-Dinitrotoluene	ug/kg	ND	ND		30	
2-Chloronaphthalene	ug/kg	ND	ND		30	
2-Chlorophenol	ug/kg	ND	ND		30	
2-Methylnaphthalene	ug/kg	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/kg	ND	ND		30	
2-Nitroaniline	ug/kg	ND	ND		30	
2-Nitrophenol	ug/kg	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	ND		30	
3,3'-Dichlorobenzidine	ug/kg	ND	ND		30	IL
3-Nitroaniline	ug/kg	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/kg	ND	ND		30	
4-Bromophenylphenyl ether	ug/kg	ND	ND		30	
4-Chloro-3-methylphenol	ug/kg	ND	ND		30	
4-Chloroaniline	ug/kg	ND	ND		30	
4-Chlorophenylphenyl ether	ug/kg	ND	ND		30	
4-Nitroaniline	ug/kg	ND	ND		30	
4-Nitrophenol	ug/kg	ND	ND		30	
Acenaphthene	ug/kg	ND	ND		30	
Acenaphthylene	ug/kg	ND	ND		30	
Aniline	ug/kg	ND	ND		30	
Anthracene	ug/kg	ND	ND		30	
Benzo(a)anthracene	ug/kg	ND	ND		30	
Benzo(b)fluoranthene	ug/kg	ND	ND		30	
Benzo(g,h,i)perylene	ug/kg	ND	ND		30	
Benzo(k)fluoranthene	ug/kg	ND	ND		30	
Benzoic Acid	ug/kg	ND	ND		30	
Benzyl alcohol	ug/kg	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/kg	ND	ND		30	
bis(2-Chloroethyl) ether	ug/kg	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	ND		30	v1
Butylbenzylphthalate	ug/kg	ND	ND		30	v1
Chrysene	ug/kg	ND	ND		30	
Di-n-butylphthalate	ug/kg	ND	ND		30	
Di-n-octylphthalate	ug/kg	ND	ND		30	v1
Dibenz(a,h)anthracene	ug/kg	ND	ND		30	
Dibenzofuran	ug/kg	ND	ND		30	
Diethylphthalate	ug/kg	ND	ND		30	
Dimethylphthalate	ug/kg	ND	ND		30	
Fluoranthene	ug/kg	ND	ND		30	
Fluorene	ug/kg	ND	ND		30	
Hexachlorobenzene	ug/kg	ND	ND		30	
Hexachlorocyclopentadiene	ug/kg	ND	ND		30	
Hexachloroethane	ug/kg	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

SAMPLE DUPLICATE: 3200338

Parameter	Units	92527967002 Result	Dup Result	RPD	Max RPD	Qualifiers
Isophorone	ug/kg	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/kg	ND	ND		30	
N-Nitrosodimethylamine	ug/kg	ND	ND		30	
N-Nitrosodiphenylamine	ug/kg	ND	ND		30	
Nitrobenzene	ug/kg	ND	ND		30	
Pentachlorophenol	ug/kg	ND	ND		30	
Phenanthrene	ug/kg	ND	ND		30	
Phenol	ug/kg	ND	ND		30	
Pyrene	ug/kg	ND	ND		30	
Pyridine	ug/kg	ND	ND		30	
2,4,6-Tribromophenol (S)	%	67	68			
2-Fluorobiphenyl (S)	%	62	65			
2-Fluorophenol (S)	%	64	71			
Nitrobenzene-d5 (S)	%	67	73			
Phenol-d6 (S)	%	61	67			
Terphenyl-d14 (S)	%	94	92			

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

QC Batch:	607682	Analysis Method:	SW-846
QC Batch Method:	SW-846	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92528353001, 92528353002, 92528353003, 92528353004

SAMPLE DUPLICATE: 3201328

Parameter	Units	92528230001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	26.7	27.0	1	25	N2

SAMPLE DUPLICATE: 3201329

Parameter	Units	92528389002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.9	16.9	6	25	N2

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QUALIFIERS

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|---|
| IH | This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value. |
| IK | The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value. |
| IL | This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value. |
| L1 | Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| N2 | The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request. |
| v1 | The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias. |
| v2 | The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard. |
| v3 | The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias. |

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FORMER BRAMLETTE MGP J21030498

Pace Project No.: 92528353

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92528353001	RI-SB-19_SO_0.5-1.0_20210315	EPA 3546	607492	EPA 8270E	607663
92528353002	RI-SB-19_SO_5.5-6.0_20210315	EPA 3546	607492	EPA 8270E	607663
92528353003	RI-SB-20_SO_0.5-1.0_20210315	EPA 3546	607492	EPA 8270E	607663
92528353004	RI-SB-20_SO_5.5-6.0_20210315	EPA 3546	607492	EPA 8270E	607663
92528353005	TRIP BLANK	EPA 8260D	608197		
92528353001	RI-SB-19_SO_0.5-1.0_20210315	EPA 5035A/5030B	608035	EPA 8260D	608070
92528353002	RI-SB-19_SO_5.5-6.0_20210315	EPA 5035A/5030B	607623	EPA 8260D	607658
92528353003	RI-SB-20_SO_0.5-1.0_20210315	EPA 5035A/5030B	607623	EPA 8260D	607658
92528353004	RI-SB-20_SO_5.5-6.0_20210315	EPA 5035A/5030B	607623	EPA 8260D	607658
92528353001	RI-SB-19_SO_0.5-1.0_20210315	SW-846	607682		
92528353002	RI-SB-19_SO_5.5-6.0_20210315	SW-846	607682		
92528353003	RI-SB-20_SO_0.5-1.0_20210315	SW-846	607682		
92528353004	RI-SB-20_SO_5.5-6.0_20210315	SW-846	607682		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Synterra Project #:

WO# : 92528353

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 3-18-21
AMK

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Cooler Temp: 1.8 Correction Factor: Add/Subtract (°C) 0.0°C

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.8
 USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. <i>AMK 3-18</i>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92528353

PM: KLH1

Due Date: 03/22/21

CLIENT: 92-Duke Ener

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGJU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VD0AK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A -- lab)	SP2T-250 mL Sterile Plastic (N/A -- lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																					3								
2																						3							
3																						3							
4																						3							
5																2													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Synterra	Address: 148 River Street Suite 220, Greenville, SC 29601	Report To: Tom King	Copy To: Heather Smith	Attention: Company Name	Address:
Email To: king@synterracorp.com	Phone: _____ Fax: _____	Purchase Order #	Project Name: Former Bramlette MGP	Address:	Address:
Requested Due Date: 3-day TAT		Project Number: 00.2731.00.08		Pace Project Manager: Kevin Herring	Pace Profile #: 7754
			Requested Analysis Filtered (Y/N)		
			State / Location		
			Regulatory Agency		
			SC		

ITEM #	SAMPLE ID One Character per box: (A-Z, 0-9 /, -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLER CONDITIONS							
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					Other	8260	8270	Trip Blank	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
1	RI-SB-19_SO_0.5-1.0_20210315		SL G	3/15/2021	1415	--	4																			
2	RI-SB-19_SO_5.5-6.0_20210315		SL G	3/15/2021	1420	--	4																			
3	RI-SB-20_SO_0.5-1.0_20210315		SL G	3/15/2021	1430	--	4																			
4	RI-SB-20_SO_5.5-6.0_20210315		SL G	3/15/2021	1435	--	4																			
5	Trip Blank		WT G	3/17/2021	--	--	2																			
6																										
7																										
8																										
9																										
10																										
11																										
12																										
ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLER NAME AND SIGNATURE		PRINT Name of SAMPLER:	DATE Signed:	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)									
		Tom King / Synterra		3/15/21	1700	Tom King / Synterra		3/17/21	0900	Tom King / Synterra		Tom King	3/17/21	4.1												
		Tom King / Synterra		3/17/21	0900	Tom King / Synterra		3/17/21	0900	Tom King / Synterra		Tom King	3/17/21													
		Tom King / Synterra		3/17/21	1045	Tom King / Synterra		3/17/21	1045	Tom King / Synterra		Tom King	3/17/21													
		Tom King / Synterra		3/17/21	1205	Tom King / Synterra		3/17/21	1205	Tom King / Synterra		Tom King	3/17/21													

PACCE HWL 3-18-21 8:00 1:8 Y N Y

April 28, 2021

Program Manager
Duke Energy
13339 Hagers Ferry Road
Bldg. 7405 MG30A2
Huntersville, NC 28078

RE: Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

Dear Program Manager:

Enclosed are the analytical results for sample(s) received by the laboratory on April 02, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Tom King
Amber Lipsky
Program Manager, Duke Energy
Mike Mastbaum
Todd Plating, Synterra
Rick Powell
B. Russo
Heather Smith



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92531096001	RI-SB-31_SO_0.5-1.0_20210317	Solid	03/17/21 10:25	04/02/21 09:40
92531096002	RI-SB-31_SO_5.5-6.0_20210317	Solid	03/17/21 10:30	04/02/21 09:40
92531096003	RI-SB-32_SO_0.5-1.0_20210317	Solid	03/17/21 10:50	04/02/21 09:40
92531096004	RI-SB-32_SO_5.5-6.0_20210317	Solid	03/17/21 10:55	04/02/21 09:40
92531096005	TRIP BLANK	Water	04/02/21 00:00	04/02/21 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92531096001	RI-SB-31_SO_0.5-1.0_20210317	EPA 8270E	PKS	4	PASI-C
		EPA 8270E	SEM	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92531096002	RI-SB-31_SO_5.5-6.0_20210317	EPA 8270E	PKS	4	PASI-C
		EPA 8270E	SEM	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92531096003	RI-SB-32_SO_0.5-1.0_20210317	EPA 8270E	PKS	4	PASI-C
		EPA 8270E	SEM	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92531096004	RI-SB-32_SO_5.5-6.0_20210317	EPA 8270E	PKS	4	PASI-C
		EPA 8270E	SEM	68	PASI-C
		EPA 8260D	CL	70	PASI-C
		SW-846	KDF	1	PASI-C
92531096005	TRIP BLANK	EPA 8260D	BSH	62	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92531096001	RI-SB-31_SO_0.5-1.0_20210317					
EPA 8270E	Benzo(a)pyrene	10.4J	ug/kg	11.5	04/25/21 12:20	H3
EPA 8270E	Phenanthrene	177J	ug/kg	382	04/26/21 11:27	H3
EPA 8260D	Acetone	61.2J	ug/kg	114	04/22/21 20:53	H3
EPA 8260D	p-Isopropyltoluene	7.1	ug/kg	5.7	04/22/21 20:53	H3
EPA 8260D	Naphthalene	14.9	ug/kg	5.7	04/22/21 20:53	H3
EPA 8260D	Styrene	192	ug/kg	5.7	04/22/21 20:53	H3
EPA 8260D	Toluene	8.6	ug/kg	5.7	04/22/21 20:53	H3
SW-846	Percent Moisture	14.5	%	0.10	04/22/21 15:03	N2
92531096002	RI-SB-31_SO_5.5-6.0_20210317					
EPA 8270E	Benzo(a)pyrene	132	ug/kg	13.7	04/26/21 17:37	H3
EPA 8260D	Acetone	185J	ug/kg	188	04/27/21 06:59	H3
EPA 8260D	Benzene	31.1	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	2-Butanone (MEK)	64.0J	ug/kg	188	04/27/21 06:59	H3
EPA 8260D	Chlorobenzene	30.0	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	1,4-Dichlorobenzene	6.0J	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	Ethylbenzene	103	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	Isopropylbenzene (Cumene)	193	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	p-Isopropyltoluene	98.1	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	Naphthalene	959	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	n-Propylbenzene	31.5	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	Toluene	214	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	1,2,4-Trimethylbenzene	207	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	1,3,5-Trimethylbenzene	82.7	ug/kg	9.4	04/27/21 06:59	H3
EPA 8260D	Xylene (Total)	632	ug/kg	18.8	04/27/21 06:59	
EPA 8260D	m&p-Xylene	396	ug/kg	18.8	04/27/21 06:59	H3
EPA 8260D	o-Xylene	237	ug/kg	9.4	04/27/21 06:59	H3
SW-846	Percent Moisture	25.8	%	0.10	04/22/21 15:04	N2
92531096003	RI-SB-32_SO_0.5-1.0_20210317					
EPA 8270E	Benzo(a)pyrene	13.9	ug/kg	11.8	04/25/21 13:48	H3
EPA 8260D	p-Isopropyltoluene	25.2	ug/kg	5.8	04/22/21 21:11	H3
EPA 8260D	Naphthalene	8.3	ug/kg	5.8	04/22/21 21:11	H3
EPA 8260D	Toluene	4.6J	ug/kg	5.8	04/22/21 21:11	H3
EPA 8260D	1,2,4-Trimethylbenzene	11.8	ug/kg	5.8	04/22/21 21:11	H3
EPA 8260D	Xylene (Total)	10.1J	ug/kg	11.6	04/22/21 21:11	
EPA 8260D	m&p-Xylene	6.8J	ug/kg	11.6	04/22/21 21:11	H3
EPA 8260D	o-Xylene	3.3J	ug/kg	5.8	04/22/21 21:11	H3
SW-846	Percent Moisture	15.0	%	0.10	04/22/21 15:04	N2
92531096004	RI-SB-32_SO_5.5-6.0_20210317					
EPA 8270E	Benzo(a)pyrene	11.7J	ug/kg	12.1	04/25/21 14:10	H3
EPA 8270E	Acenaphthene	219J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Benzo(a)anthracene	525	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Benzo(b)fluoranthene	999	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Benzo(g,h,i)perylene	782	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Benzo(k)fluoranthene	400J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Chrysene	413	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Fluoranthene	225J	ug/kg	402	04/26/21 12:50	H3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92531096004	RI-SB-32_SO_5.5-6.0_20210317					
EPA 8270E	Fluorene	169J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Indeno(1,2,3-cd)pyrene	717	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	1-Methylnaphthalene	304J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	2-Methylnaphthalene	319J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Phenanthrene	398J	ug/kg	402	04/26/21 12:50	H3
EPA 8270E	Pyrene	294J	ug/kg	402	04/26/21 12:50	H3
EPA 8260D	Acetone	62.5J	ug/kg	116	04/22/21 21:29	H3
EPA 8260D	Ethylbenzene	5.7J	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	p-Isopropyltoluene	32.1	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	Naphthalene	18.3	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	n-Propylbenzene	178	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	Toluene	5.1J	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	1,2,4-Trimethylbenzene	22.4	ug/kg	5.8	04/22/21 21:29	H3
EPA 8260D	Xylene (Total)	22.4	ug/kg	11.6	04/22/21 21:29	
EPA 8260D	m&p-Xylene	10.9J	ug/kg	11.6	04/22/21 21:29	H3
EPA 8260D	o-Xylene	11.5	ug/kg	5.8	04/22/21 21:29	H3
SW-846	Percent Moisture	18.0	%	0.10	04/22/21 15:04	N2

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Method: EPA 8270E

Description: 8270E MSSV MW PAH by SIM

Client: Duke Energy

Date: April 28, 2021

General Information:

4 samples were analyzed for EPA 8270E by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- RI-SB-31_SO_0.5-1.0_20210317 (Lab ID: 92531096001)
- RI-SB-31_SO_5.5-6.0_20210317 (Lab ID: 92531096002)
- RI-SB-32_SO_0.5-1.0_20210317 (Lab ID: 92531096003)
- RI-SB-32_SO_5.5-6.0_20210317 (Lab ID: 92531096004)

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Method: EPA 8270E

Description: 8270E MSSV Microwave

Client: Duke Energy

Date: April 28, 2021

General Information:

4 samples were analyzed for EPA 8270E by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- RI-SB-31_SO_0.5-1.0_20210317 (Lab ID: 92531096001)
- RI-SB-31_SO_5.5-6.0_20210317 (Lab ID: 92531096002)
- RI-SB-32_SO_0.5-1.0_20210317 (Lab ID: 92531096003)
- RI-SB-32_SO_5.5-6.0_20210317 (Lab ID: 92531096004)

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615749

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92534135002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3240201)
 - Benzoic Acid

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Method: EPA 8270E

Description: 8270E MSSV Microwave

Client: Duke Energy

Date: April 28, 2021

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

Method: EPA 8260D
Description: 8260 MSV Low Level SC
Client: Duke Energy
Date: April 28, 2021

General Information:

1 sample was analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

- H1: Analysis conducted outside the EPA method holding time.
- TRIP BLANK (Lab ID: 92531096005)

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 615558

v1: The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

- BLANK (Lab ID: 3239276)
 - Chloroethane
- LCS (Lab ID: 3239277)
 - Chloroethane
- TRIP BLANK (Lab ID: 92531096005)
 - Chloroethane

v3: The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

- MS (Lab ID: 3239278)
 - Dichlorodifluoromethane
- MSD (Lab ID: 3239279)
 - Dichlorodifluoromethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Method: EPA 8260D

Description: 8260 MSV Low Level SC

Client: Duke Energy

Date: April 28, 2021

QC Batch: 615558

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3239277)
- Vinyl acetate

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

Method: EPA 8260D
Description: 8260D/5035A/5030B SC Volatiles
Client: Duke Energy
Date: April 28, 2021

General Information:

4 samples were analyzed for EPA 8260D by Pace Analytical Services Charlotte. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- RI-SB-31_SO_0.5-1.0_20210317 (Lab ID: 92531096001)
- RI-SB-31_SO_5.5-6.0_20210317 (Lab ID: 92531096002)
- RI-SB-32_SO_0.5-1.0_20210317 (Lab ID: 92531096003)
- RI-SB-32_SO_5.5-6.0_20210317 (Lab ID: 92531096004)

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615494

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92534491002

R1: RPD value was outside control limits.

- MSD (Lab ID: 3243822)
 - 2,2-Dichloropropane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Method: EPA 8260D

Description: 8260D/5035A/5030B SC Volatiles

Client: Duke Energy

Date: April 28, 2021

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_0.5-1.0_20210317 **Lab ID:** 92531096001 **Collected:** 03/17/21 10:25 **Received:** 04/02/21 09:40 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Benzo(a)pyrene	10.4J	ug/kg	11.5	1.2	1	04/24/21 15:57	04/25/21 12:20	50-32-8	H3
Surrogates									
2-Fluorobiphenyl (S)	52	%	31-130		1	04/24/21 15:57	04/25/21 12:20	321-60-8	
Nitrobenzene-d5 (S)	54	%	32-130		1	04/24/21 15:57	04/25/21 12:20	4165-60-0	
Terphenyl-d14 (S)	47	%	24-130		1	04/24/21 15:57	04/25/21 12:20	1718-51-0	
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	382	134	1	04/23/21 11:32	04/26/21 11:27	83-32-9	H3
Acenaphthylene	ND	ug/kg	382	134	1	04/23/21 11:32	04/26/21 11:27	208-96-8	H3
Aniline	ND	ug/kg	382	149	1	04/23/21 11:32	04/26/21 11:27	62-53-3	H3
Anthracene	ND	ug/kg	382	125	1	04/23/21 11:32	04/26/21 11:27	120-12-7	H3
Benzo(a)anthracene	ND	ug/kg	382	127	1	04/23/21 11:32	04/26/21 11:27	56-55-3	H3
Benzo(b)fluoranthene	ND	ug/kg	382	127	1	04/23/21 11:32	04/26/21 11:27	205-99-2	H3
Benzo(g,h,i)perylene	ND	ug/kg	382	148	1	04/23/21 11:32	04/26/21 11:27	191-24-2	H3
Benzo(k)fluoranthene	ND	ug/kg	382	134	1	04/23/21 11:32	04/26/21 11:27	207-08-9	H3
Benzoic Acid	ND	ug/kg	1910	821	1	04/23/21 11:32	04/26/21 11:27	65-85-0	H3
Benzyl alcohol	ND	ug/kg	764	290	1	04/23/21 11:32	04/26/21 11:27	100-51-6	H3
4-Bromophenylphenyl ether	ND	ug/kg	382	147	1	04/23/21 11:32	04/26/21 11:27	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	382	161	1	04/23/21 11:32	04/26/21 11:27	85-68-7	H3
4-Chloro-3-methylphenol	ND	ug/kg	764	269	1	04/23/21 11:32	04/26/21 11:27	59-50-7	H3
4-Chloroaniline	ND	ug/kg	764	300	1	04/23/21 11:32	04/26/21 11:27	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	382	159	1	04/23/21 11:32	04/26/21 11:27	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	382	144	1	04/23/21 11:32	04/26/21 11:27	111-44-4	H3
2-Chloronaphthalene	ND	ug/kg	382	152	1	04/23/21 11:32	04/26/21 11:27	91-58-7	H3
2-Chlorophenol	ND	ug/kg	382	144	1	04/23/21 11:32	04/26/21 11:27	95-57-8	H3
4-Chlorophenylphenyl ether	ND	ug/kg	382	142	1	04/23/21 11:32	04/26/21 11:27	7005-72-3	H3
Chrysene	ND	ug/kg	382	139	1	04/23/21 11:32	04/26/21 11:27	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	382	147	1	04/23/21 11:32	04/26/21 11:27	53-70-3	H3
Dibenzofuran	ND	ug/kg	382	138	1	04/23/21 11:32	04/26/21 11:27	132-64-9	H3
3,3'-Dichlorobenzidine	ND	ug/kg	764	258	1	04/23/21 11:32	04/26/21 11:27	91-94-1	H3,IL
2,4-Dichlorophenol	ND	ug/kg	382	149	1	04/23/21 11:32	04/26/21 11:27	120-83-2	H3
Diethylphthalate	ND	ug/kg	382	140	1	04/23/21 11:32	04/26/21 11:27	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	382	159	1	04/23/21 11:32	04/26/21 11:27	105-67-9	H3
Dimethylphthalate	ND	ug/kg	382	139	1	04/23/21 11:32	04/26/21 11:27	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	382	129	1	04/23/21 11:32	04/26/21 11:27	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	764	357	1	04/23/21 11:32	04/26/21 11:27	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	1910	1180	1	04/23/21 11:32	04/26/21 11:27	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	382	147	1	04/23/21 11:32	04/26/21 11:27	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	382	140	1	04/23/21 11:32	04/26/21 11:27	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	382	151	1	04/23/21 11:32	04/26/21 11:27	117-84-0	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	382	148	1	04/23/21 11:32	04/26/21 11:27	117-81-7	H3
Fluoranthene	ND	ug/kg	382	131	1	04/23/21 11:32	04/26/21 11:27	206-44-0	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

Sample: RI-SB-31_SO_0.5-1.0_20210317 **Lab ID:** 92531096001 Collected: 03/17/21 10:25 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Fluorene	ND	ug/kg	382	134	1	04/23/21 11:32	04/26/21 11:27	86-73-7	H3
Hexachlorobenzene	ND	ug/kg	382	149	1	04/23/21 11:32	04/26/21 11:27	118-74-1	H3
Hexachlorocyclopentadiene	ND	ug/kg	382	219	1	04/23/21 11:32	04/26/21 11:27	77-47-4	H3
Hexachloroethane	ND	ug/kg	382	146	1	04/23/21 11:32	04/26/21 11:27	67-72-1	H3
Indeno(1,2,3-cd)pyrene	ND	ug/kg	382	151	1	04/23/21 11:32	04/26/21 11:27	193-39-5	H3
Isophorone	ND	ug/kg	382	170	1	04/23/21 11:32	04/26/21 11:27	78-59-1	H3
1-Methylnaphthalene	ND	ug/kg	382	134	1	04/23/21 11:32	04/26/21 11:27	90-12-0	H3
2-Methylnaphthalene	ND	ug/kg	382	153	1	04/23/21 11:32	04/26/21 11:27	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	382	156	1	04/23/21 11:32	04/26/21 11:27	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	382	154	1	04/23/21 11:32	04/26/21 11:27	15831-10-4	H3
2-Nitroaniline	ND	ug/kg	1910	313	1	04/23/21 11:32	04/26/21 11:27	88-74-4	H3
3-Nitroaniline	ND	ug/kg	1910	300	1	04/23/21 11:32	04/26/21 11:27	99-09-2	H3
4-Nitroaniline	ND	ug/kg	764	291	1	04/23/21 11:32	04/26/21 11:27	100-01-6	H3
Nitrobenzene	ND	ug/kg	382	177	1	04/23/21 11:32	04/26/21 11:27	98-95-3	H3
2-Nitrophenol	ND	ug/kg	382	166	1	04/23/21 11:32	04/26/21 11:27	88-75-5	H3
4-Nitrophenol	ND	ug/kg	1910	739	1	04/23/21 11:32	04/26/21 11:27	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	382	129	1	04/23/21 11:32	04/26/21 11:27	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	382	144	1	04/23/21 11:32	04/26/21 11:27	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	382	136	1	04/23/21 11:32	04/26/21 11:27	86-30-6	H3
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	382	182	1	04/23/21 11:32	04/26/21 11:27	108-60-1	H3
Pentachlorophenol	ND	ug/kg	764	374	1	04/23/21 11:32	04/26/21 11:27	87-86-5	H3
Phenanthrene	177J	ug/kg	382	125	1	04/23/21 11:32	04/26/21 11:27	85-01-8	H3
Phenol	ND	ug/kg	382	170	1	04/23/21 11:32	04/26/21 11:27	108-95-2	H3
Pyrene	ND	ug/kg	382	155	1	04/23/21 11:32	04/26/21 11:27	129-00-0	H3
Pyridine	ND	ug/kg	382	120	1	04/23/21 11:32	04/26/21 11:27	110-86-1	H3
2,4,5-Trichlorophenol	ND	ug/kg	382	175	1	04/23/21 11:32	04/26/21 11:27	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	382	158	1	04/23/21 11:32	04/26/21 11:27	88-06-2	H3
Surrogates									
Nitrobenzene-d5 (S)	74	%	21-130		1	04/23/21 11:32	04/26/21 11:27	4165-60-0	
2-Fluorobiphenyl (S)	73	%	19-130		1	04/23/21 11:32	04/26/21 11:27	321-60-8	
Terphenyl-d14 (S)	62	%	15-130		1	04/23/21 11:32	04/26/21 11:27	1718-51-0	
Phenol-d6 (S)	66	%	18-130		1	04/23/21 11:32	04/26/21 11:27	13127-88-3	
2-Fluorophenol (S)	62	%	18-130		1	04/23/21 11:32	04/26/21 11:27	367-12-4	
2,4,6-Tribromophenol (S)	66	%	18-130		1	04/23/21 11:32	04/26/21 11:27	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	61.2J	ug/kg	114	36.5	1	04/22/21 11:42	04/22/21 20:53	67-64-1	H3
Benzene	ND	ug/kg	5.7	2.3	1	04/22/21 11:42	04/22/21 20:53	71-43-2	H3
Bromobenzene	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	108-86-1	H3
Bromochloromethane	ND	ug/kg	5.7	1.7	1	04/22/21 11:42	04/22/21 20:53	74-97-5	H3
Bromodichloromethane	ND	ug/kg	5.7	2.2	1	04/22/21 11:42	04/22/21 20:53	75-27-4	H3
Bromoform	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	75-25-2	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_0.5-1.0_20210317 Lab ID: 92531096001 Collected: 03/17/21 10:25 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Bromomethane	ND	ug/kg	11.4	9.0	1	04/22/21 11:42	04/22/21 20:53	74-83-9	H3
2-Butanone (MEK)	ND	ug/kg	114	27.3	1	04/22/21 11:42	04/22/21 20:53	78-93-3	H3
n-Butylbenzene	ND	ug/kg	5.7	2.7	1	04/22/21 11:42	04/22/21 20:53	104-51-8	H3
sec-Butylbenzene	ND	ug/kg	5.7	2.5	1	04/22/21 11:42	04/22/21 20:53	135-98-8	H3
tert-Butylbenzene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	98-06-6	H3
Carbon tetrachloride	ND	ug/kg	5.7	2.1	1	04/22/21 11:42	04/22/21 20:53	56-23-5	H3
Chlorobenzene	ND	ug/kg	5.7	1.1	1	04/22/21 11:42	04/22/21 20:53	108-90-7	H3
Chloroethane	ND	ug/kg	11.4	4.4	1	04/22/21 11:42	04/22/21 20:53	75-00-3	H3
Chloroform	ND	ug/kg	5.7	3.5	1	04/22/21 11:42	04/22/21 20:53	67-66-3	H3
Chloromethane	ND	ug/kg	11.4	4.8	1	04/22/21 11:42	04/22/21 20:53	74-87-3	H3
2-Chlorotoluene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	95-49-8	H3
4-Chlorotoluene	ND	ug/kg	5.7	1.0	1	04/22/21 11:42	04/22/21 20:53	106-43-4	H3
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.7	2.2	1	04/22/21 11:42	04/22/21 20:53	96-12-8	H3
Dibromochloromethane	ND	ug/kg	5.7	3.2	1	04/22/21 11:42	04/22/21 20:53	124-48-1	H3
1,2-Dibromoethane (EDB)	ND	ug/kg	5.7	2.5	1	04/22/21 11:42	04/22/21 20:53	106-93-4	H3
Dibromomethane	ND	ug/kg	5.7	1.2	1	04/22/21 11:42	04/22/21 20:53	74-95-3	H3
1,2-Dichlorobenzene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	5.7	1.8	1	04/22/21 11:42	04/22/21 20:53	541-73-1	H3
1,4-Dichlorobenzene	ND	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	106-46-7	H3
Dichlorodifluoromethane	ND	ug/kg	11.4	2.5	1	04/22/21 11:42	04/22/21 20:53	75-71-8	H3
1,1-Dichloroethane	ND	ug/kg	5.7	2.3	1	04/22/21 11:42	04/22/21 20:53	75-34-3	H3
1,2-Dichloroethane	ND	ug/kg	5.7	3.8	1	04/22/21 11:42	04/22/21 20:53	107-06-2	H3
1,1-Dichloroethene	ND	ug/kg	5.7	2.3	1	04/22/21 11:42	04/22/21 20:53	75-35-4	H3
cis-1,2-Dichloroethene	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	156-59-2	H3
trans-1,2-Dichloroethene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	156-60-5	H3
1,2-Dichloropropane	ND	ug/kg	5.7	1.7	1	04/22/21 11:42	04/22/21 20:53	78-87-5	H3
1,3-Dichloropropane	ND	ug/kg	5.7	1.8	1	04/22/21 11:42	04/22/21 20:53	142-28-9	H3
2,2-Dichloropropane	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	594-20-7	H3
1,1-Dichloropropene	ND	ug/kg	5.7	2.7	1	04/22/21 11:42	04/22/21 20:53	563-58-6	H3
cis-1,3-Dichloropropene	ND	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	10061-01-5	H3
trans-1,3-Dichloropropene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	10061-02-6	H3
Diisopropyl ether	ND	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	108-20-3	H3
Ethylbenzene	ND	ug/kg	5.7	2.7	1	04/22/21 11:42	04/22/21 20:53	100-41-4	H3
Hexachloro-1,3-butadiene	ND	ug/kg	11.4	9.3	1	04/22/21 11:42	04/22/21 20:53	87-68-3	H3
2-Hexanone	ND	ug/kg	56.9	5.5	1	04/22/21 11:42	04/22/21 20:53	591-78-6	H3
Isopropylbenzene (Cumene)	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	98-82-8	H3
p-Isopropyltoluene	7.1	ug/kg	5.7	2.8	1	04/22/21 11:42	04/22/21 20:53	99-87-6	H3
Methylene Chloride	ND	ug/kg	22.8	15.6	1	04/22/21 11:42	04/22/21 20:53	75-09-2	H3
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	56.9	5.5	1	04/22/21 11:42	04/22/21 20:53	108-10-1	H3
Methyl-tert-butyl ether	ND	ug/kg	5.7	2.1	1	04/22/21 11:42	04/22/21 20:53	1634-04-4	H3
Naphthalene	14.9	ug/kg	5.7	3.0	1	04/22/21 11:42	04/22/21 20:53	91-20-3	H3
n-Propylbenzene	ND	ug/kg	5.7	2.0	1	04/22/21 11:42	04/22/21 20:53	103-65-1	H3
Styrene	192	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	100-42-5	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_0.5-1.0_20210317 Lab ID: 92531096001 Collected: 03/17/21 10:25 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.7	2.2	1	04/22/21 11:42	04/22/21 20:53	630-20-6	H3
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	79-34-5	H3
Tetrachloroethene	ND	ug/kg	5.7	1.8	1	04/22/21 11:42	04/22/21 20:53	127-18-4	H3
Toluene	8.6	ug/kg	5.7	1.6	1	04/22/21 11:42	04/22/21 20:53	108-88-3	H3
1,2,3-Trichlorobenzene	ND	ug/kg	5.7	4.6	1	04/22/21 11:42	04/22/21 20:53	87-61-6	H3
1,2,4-Trichlorobenzene	ND	ug/kg	5.7	4.8	1	04/22/21 11:42	04/22/21 20:53	120-82-1	H3
1,1,1-Trichloroethane	ND	ug/kg	5.7	3.0	1	04/22/21 11:42	04/22/21 20:53	71-55-6	H3
1,1,2-Trichloroethane	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	79-00-5	H3
Trichloroethene	ND	ug/kg	5.7	1.5	1	04/22/21 11:42	04/22/21 20:53	79-01-6	H3
Trichlorofluoromethane	ND	ug/kg	5.7	3.1	1	04/22/21 11:42	04/22/21 20:53	75-69-4	H3
1,2,3-Trichloropropane	ND	ug/kg	5.7	2.9	1	04/22/21 11:42	04/22/21 20:53	96-18-4	H3
1,2,4-Trimethylbenzene	ND	ug/kg	5.7	1.6	1	04/22/21 11:42	04/22/21 20:53	95-63-6	H3
1,3,5-Trimethylbenzene	ND	ug/kg	5.7	1.9	1	04/22/21 11:42	04/22/21 20:53	108-67-8	H3
Vinyl acetate	ND	ug/kg	56.9	4.1	1	04/22/21 11:42	04/22/21 20:53	108-05-4	H3
Vinyl chloride	ND	ug/kg	11.4	2.9	1	04/22/21 11:42	04/22/21 20:53	75-01-4	H3
Xylene (Total)	ND	ug/kg	11.4	3.2	1	04/22/21 11:42	04/22/21 20:53	1330-20-7	
m&p-Xylene	ND	ug/kg	11.4	3.9	1	04/22/21 11:42	04/22/21 20:53	179601-23-1	H3
o-Xylene	ND	ug/kg	5.7	2.5	1	04/22/21 11:42	04/22/21 20:53	95-47-6	H3
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	04/22/21 11:42	04/22/21 20:53	2037-26-5	
4-Bromofluorobenzene (S)	105	%	69-134		1	04/22/21 11:42	04/22/21 20:53	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1	04/22/21 11:42	04/22/21 20:53	17060-07-0	

Percent Moisture

Analytical Method: SW-846

Pace Analytical Services - Charlotte

Percent Moisture	14.5	%	0.10	0.10	1		04/22/21 15:03		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_5.5-6.0_20210317 **Lab ID:** 92531096002 **Collected:** 03/17/21 10:30 **Received:** 04/02/21 09:40 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Benzo(a)pyrene	132	ug/kg	13.7	1.4	1	04/26/21 13:44	04/26/21 17:37	50-32-8	H3
Surrogates									
2-Fluorobiphenyl (S)	82	%	31-130		1	04/26/21 13:44	04/26/21 17:37	321-60-8	
Nitrobenzene-d5 (S)	81	%	32-130		1	04/26/21 13:44	04/26/21 17:37	4165-60-0	
Terphenyl-d14 (S)	74	%	24-130		1	04/26/21 13:44	04/26/21 17:37	1718-51-0	
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	445	156	1	04/23/21 11:32	04/26/21 11:55	83-32-9	H3
Acenaphthylene	ND	ug/kg	445	156	1	04/23/21 11:32	04/26/21 11:55	208-96-8	H3
Aniline	ND	ug/kg	445	174	1	04/23/21 11:32	04/26/21 11:55	62-53-3	H3
Anthracene	ND	ug/kg	445	145	1	04/23/21 11:32	04/26/21 11:55	120-12-7	H3
Benzo(a)anthracene	ND	ug/kg	445	148	1	04/23/21 11:32	04/26/21 11:55	56-55-3	H3
Benzo(b)fluoranthene	ND	ug/kg	445	148	1	04/23/21 11:32	04/26/21 11:55	205-99-2	H3
Benzo(g,h,i)perylene	ND	ug/kg	445	172	1	04/23/21 11:32	04/26/21 11:55	191-24-2	H3
Benzo(k)fluoranthene	ND	ug/kg	445	156	1	04/23/21 11:32	04/26/21 11:55	207-08-9	H3
Benzoic Acid	ND	ug/kg	2220	955	1	04/23/21 11:32	04/26/21 11:55	65-85-0	H3
Benzyl alcohol	ND	ug/kg	889	337	1	04/23/21 11:32	04/26/21 11:55	100-51-6	H3
4-Bromophenylphenyl ether	ND	ug/kg	445	171	1	04/23/21 11:32	04/26/21 11:55	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	445	187	1	04/23/21 11:32	04/26/21 11:55	85-68-7	H3
4-Chloro-3-methylphenol	ND	ug/kg	889	313	1	04/23/21 11:32	04/26/21 11:55	59-50-7	H3
4-Chloroaniline	ND	ug/kg	889	349	1	04/23/21 11:32	04/26/21 11:55	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	445	185	1	04/23/21 11:32	04/26/21 11:55	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	445	167	1	04/23/21 11:32	04/26/21 11:55	111-44-4	H3
2-Chloronaphthalene	ND	ug/kg	445	176	1	04/23/21 11:32	04/26/21 11:55	91-58-7	H3
2-Chlorophenol	ND	ug/kg	445	167	1	04/23/21 11:32	04/26/21 11:55	95-57-8	H3
4-Chlorophenylphenyl ether	ND	ug/kg	445	166	1	04/23/21 11:32	04/26/21 11:55	7005-72-3	H3
Chrysene	ND	ug/kg	445	162	1	04/23/21 11:32	04/26/21 11:55	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	445	171	1	04/23/21 11:32	04/26/21 11:55	53-70-3	H3
Dibenzofuran	ND	ug/kg	445	160	1	04/23/21 11:32	04/26/21 11:55	132-64-9	H3
3,3'-Dichlorobenzidine	ND	ug/kg	889	300	1	04/23/21 11:32	04/26/21 11:55	91-94-1	H3,IL
2,4-Dichlorophenol	ND	ug/kg	445	174	1	04/23/21 11:32	04/26/21 11:55	120-83-2	H3
Diethylphthalate	ND	ug/kg	445	163	1	04/23/21 11:32	04/26/21 11:55	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	445	185	1	04/23/21 11:32	04/26/21 11:55	105-67-9	H3
Dimethylphthalate	ND	ug/kg	445	162	1	04/23/21 11:32	04/26/21 11:55	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	445	150	1	04/23/21 11:32	04/26/21 11:55	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	889	415	1	04/23/21 11:32	04/26/21 11:55	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	2220	1370	1	04/23/21 11:32	04/26/21 11:55	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	445	171	1	04/23/21 11:32	04/26/21 11:55	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	445	163	1	04/23/21 11:32	04/26/21 11:55	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	445	175	1	04/23/21 11:32	04/26/21 11:55	117-84-0	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	445	172	1	04/23/21 11:32	04/26/21 11:55	117-81-7	H3
Fluoranthene	ND	ug/kg	445	152	1	04/23/21 11:32	04/26/21 11:55	206-44-0	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_5.5-6.0_20210317 **Lab ID:** 92531096002 Collected: 03/17/21 10:30 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Fluorene	ND	ug/kg	445	156	1	04/23/21 11:32	04/26/21 11:55	86-73-7	H3
Hexachlorobenzene	ND	ug/kg	445	174	1	04/23/21 11:32	04/26/21 11:55	118-74-1	H3
Hexachlorocyclopentadiene	ND	ug/kg	445	255	1	04/23/21 11:32	04/26/21 11:55	77-47-4	H3
Hexachloroethane	ND	ug/kg	445	170	1	04/23/21 11:32	04/26/21 11:55	67-72-1	H3
Indeno(1,2,3-cd)pyrene	ND	ug/kg	445	175	1	04/23/21 11:32	04/26/21 11:55	193-39-5	H3
Isophorone	ND	ug/kg	445	198	1	04/23/21 11:32	04/26/21 11:55	78-59-1	H3
1-Methylnaphthalene	ND	ug/kg	445	156	1	04/23/21 11:32	04/26/21 11:55	90-12-0	H3
2-Methylnaphthalene	ND	ug/kg	445	178	1	04/23/21 11:32	04/26/21 11:55	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	445	182	1	04/23/21 11:32	04/26/21 11:55	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	445	179	1	04/23/21 11:32	04/26/21 11:55	15831-10-4	H3
2-Nitroaniline	ND	ug/kg	2220	364	1	04/23/21 11:32	04/26/21 11:55	88-74-4	H3
3-Nitroaniline	ND	ug/kg	2220	349	1	04/23/21 11:32	04/26/21 11:55	99-09-2	H3
4-Nitroaniline	ND	ug/kg	889	338	1	04/23/21 11:32	04/26/21 11:55	100-01-6	H3
Nitrobenzene	ND	ug/kg	445	206	1	04/23/21 11:32	04/26/21 11:55	98-95-3	H3
2-Nitrophenol	ND	ug/kg	445	193	1	04/23/21 11:32	04/26/21 11:55	88-75-5	H3
4-Nitrophenol	ND	ug/kg	2220	859	1	04/23/21 11:32	04/26/21 11:55	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	445	150	1	04/23/21 11:32	04/26/21 11:55	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	445	167	1	04/23/21 11:32	04/26/21 11:55	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	445	158	1	04/23/21 11:32	04/26/21 11:55	86-30-6	H3
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	445	211	1	04/23/21 11:32	04/26/21 11:55	108-60-1	H3
Pentachlorophenol	ND	ug/kg	889	435	1	04/23/21 11:32	04/26/21 11:55	87-86-5	H3
Phenanthrene	ND	ug/kg	445	145	1	04/23/21 11:32	04/26/21 11:55	85-01-8	H3
Phenol	ND	ug/kg	445	198	1	04/23/21 11:32	04/26/21 11:55	108-95-2	H3
Pyrene	ND	ug/kg	445	181	1	04/23/21 11:32	04/26/21 11:55	129-00-0	H3
Pyridine	ND	ug/kg	445	140	1	04/23/21 11:32	04/26/21 11:55	110-86-1	H3
2,4,5-Trichlorophenol	ND	ug/kg	445	203	1	04/23/21 11:32	04/26/21 11:55	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	445	183	1	04/23/21 11:32	04/26/21 11:55	88-06-2	H3
Surrogates									
Nitrobenzene-d5 (S)	71	%	21-130		1	04/23/21 11:32	04/26/21 11:55	4165-60-0	
2-Fluorobiphenyl (S)	60	%	19-130		1	04/23/21 11:32	04/26/21 11:55	321-60-8	
Terphenyl-d14 (S)	58	%	15-130		1	04/23/21 11:32	04/26/21 11:55	1718-51-0	
Phenol-d6 (S)	66	%	18-130		1	04/23/21 11:32	04/26/21 11:55	13127-88-3	
2-Fluorophenol (S)	66	%	18-130		1	04/23/21 11:32	04/26/21 11:55	367-12-4	
2,4,6-Tribromophenol (S)	78	%	18-130		1	04/23/21 11:32	04/26/21 11:55	118-79-6	

8260D/5035A/5030B SC Volatiles

Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B

Pace Analytical Services - Charlotte

Acetone	185J	ug/kg	188	60.2	1	04/26/21 16:28	04/27/21 06:59	67-64-1	H3
Benzene	31.1	ug/kg	9.4	3.7	1	04/26/21 16:28	04/27/21 06:59	71-43-2	H3
Bromobenzene	ND	ug/kg	9.4	3.1	1	04/26/21 16:28	04/27/21 06:59	108-86-1	H3
Bromochloromethane	ND	ug/kg	9.4	2.8	1	04/26/21 16:28	04/27/21 06:59	74-97-5	H3
Bromodichloromethane	ND	ug/kg	9.4	3.6	1	04/26/21 16:28	04/27/21 06:59	75-27-4	H3
Bromoform	ND	ug/kg	9.4	3.3	1	04/26/21 16:28	04/27/21 06:59	75-25-2	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-31_SO_5.5-6.0_20210317 Lab ID: 92531096002 Collected: 03/17/21 10:30 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Bromomethane	ND	ug/kg	18.8	14.8	1	04/26/21 16:28	04/27/21 06:59	74-83-9	H3
2-Butanone (MEK)	64.0J	ug/kg	188	45.0	1	04/26/21 16:28	04/27/21 06:59	78-93-3	H3
n-Butylbenzene	ND	ug/kg	9.4	4.4	1	04/26/21 16:28	04/27/21 06:59	104-51-8	H3
sec-Butylbenzene	ND	ug/kg	9.4	4.1	1	04/26/21 16:28	04/27/21 06:59	135-98-8	H3
tert-Butylbenzene	ND	ug/kg	9.4	3.3	1	04/26/21 16:28	04/27/21 06:59	98-06-6	H3
Carbon tetrachloride	ND	ug/kg	9.4	3.5	1	04/26/21 16:28	04/27/21 06:59	56-23-5	H3
Chlorobenzene	30.0	ug/kg	9.4	1.8	1	04/26/21 16:28	04/27/21 06:59	108-90-7	H3
Chloroethane	ND	ug/kg	18.8	7.2	1	04/26/21 16:28	04/27/21 06:59	75-00-3	H3
Chloroform	ND	ug/kg	9.4	5.7	1	04/26/21 16:28	04/27/21 06:59	67-66-3	H3
Chloromethane	ND	ug/kg	18.8	7.9	1	04/26/21 16:28	04/27/21 06:59	74-87-3	H3
2-Chlorotoluene	ND	ug/kg	9.4	3.3	1	04/26/21 16:28	04/27/21 06:59	95-49-8	H3
4-Chlorotoluene	ND	ug/kg	9.4	1.7	1	04/26/21 16:28	04/27/21 06:59	106-43-4	H3
1,2-Dibromo-3-chloropropane	ND	ug/kg	9.4	3.6	1	04/26/21 16:28	04/27/21 06:59	96-12-8	H3
Dibromochloromethane	ND	ug/kg	9.4	5.3	1	04/26/21 16:28	04/27/21 06:59	124-48-1	H3
1,2-Dibromoethane (EDB)	ND	ug/kg	9.4	4.1	1	04/26/21 16:28	04/27/21 06:59	106-93-4	H3
Dibromomethane	ND	ug/kg	9.4	2.0	1	04/26/21 16:28	04/27/21 06:59	74-95-3	H3
1,2-Dichlorobenzene	ND	ug/kg	9.4	3.4	1	04/26/21 16:28	04/27/21 06:59	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	9.4	2.9	1	04/26/21 16:28	04/27/21 06:59	541-73-1	H3
1,4-Dichlorobenzene	6.0J	ug/kg	9.4	2.4	1	04/26/21 16:28	04/27/21 06:59	106-46-7	H3
Dichlorodifluoromethane	ND	ug/kg	18.8	4.1	1	04/26/21 16:28	04/27/21 06:59	75-71-8	H3
1,1-Dichloroethane	ND	ug/kg	9.4	3.9	1	04/26/21 16:28	04/27/21 06:59	75-34-3	H3
1,2-Dichloroethane	ND	ug/kg	9.4	6.2	1	04/26/21 16:28	04/27/21 06:59	107-06-2	H3
1,1-Dichloroethene	ND	ug/kg	9.4	3.9	1	04/26/21 16:28	04/27/21 06:59	75-35-4	H3
cis-1,2-Dichloroethene	ND	ug/kg	9.4	3.2	1	04/26/21 16:28	04/27/21 06:59	156-59-2	H3
trans-1,2-Dichloroethene	ND	ug/kg	9.4	3.3	1	04/26/21 16:28	04/27/21 06:59	156-60-5	H3
1,2-Dichloropropane	ND	ug/kg	9.4	2.8	1	04/26/21 16:28	04/27/21 06:59	78-87-5	H3
1,3-Dichloropropane	ND	ug/kg	9.4	2.9	1	04/26/21 16:28	04/27/21 06:59	142-28-9	H3
2,2-Dichloropropane	ND	ug/kg	9.4	3.1	1	04/26/21 16:28	04/27/21 06:59	594-20-7	H3
1,1-Dichloropropene	ND	ug/kg	9.4	4.5	1	04/26/21 16:28	04/27/21 06:59	563-58-6	H3
cis-1,3-Dichloropropene	ND	ug/kg	9.4	2.6	1	04/26/21 16:28	04/27/21 06:59	10061-01-5	H3
trans-1,3-Dichloropropene	ND	ug/kg	9.4	3.2	1	04/26/21 16:28	04/27/21 06:59	10061-02-6	H3
Diisopropyl ether	ND	ug/kg	9.4	2.5	1	04/26/21 16:28	04/27/21 06:59	108-20-3	H3
Ethylbenzene	103	ug/kg	9.4	4.4	1	04/26/21 16:28	04/27/21 06:59	100-41-4	H3
Hexachloro-1,3-butadiene	ND	ug/kg	18.8	15.3	1	04/26/21 16:28	04/27/21 06:59	87-68-3	H3
2-Hexanone	ND	ug/kg	93.8	9.0	1	04/26/21 16:28	04/27/21 06:59	591-78-6	H3
Isopropylbenzene (Cumene)	193	ug/kg	9.4	3.2	1	04/26/21 16:28	04/27/21 06:59	98-82-8	H3
p-Isopropyltoluene	98.1	ug/kg	9.4	4.6	1	04/26/21 16:28	04/27/21 06:59	99-87-6	H3
Methylene Chloride	ND	ug/kg	37.5	25.7	1	04/26/21 16:28	04/27/21 06:59	75-09-2	H3
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	93.8	9.0	1	04/26/21 16:28	04/27/21 06:59	108-10-1	H3
Methyl-tert-butyl ether	ND	ug/kg	9.4	3.5	1	04/26/21 16:28	04/27/21 06:59	1634-04-4	H3
Naphthalene	959	ug/kg	9.4	4.9	1	04/26/21 16:28	04/27/21 06:59	91-20-3	H3
n-Propylbenzene	31.5	ug/kg	9.4	3.3	1	04/26/21 16:28	04/27/21 06:59	103-65-1	H3
Styrene	ND	ug/kg	9.4	2.5	1	04/26/21 16:28	04/27/21 06:59	100-42-5	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

Sample: RI-SB-31_SO_5.5-6.0_20210317 **Lab ID:** 92531096002 Collected: 03/17/21 10:30 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,1,1,2-Tetrachloroethane	ND	ug/kg	9.4	3.6	1	04/26/21 16:28	04/27/21 06:59	630-20-6	H3
1,1,2,2-Tetrachloroethane	ND	ug/kg	9.4	2.5	1	04/26/21 16:28	04/27/21 06:59	79-34-5	H3
Tetrachloroethene	ND	ug/kg	9.4	3.0	1	04/26/21 16:28	04/27/21 06:59	127-18-4	H3
Toluene	214	ug/kg	9.4	2.7	1	04/26/21 16:28	04/27/21 06:59	108-88-3	H3
1,2,3-Trichlorobenzene	ND	ug/kg	9.4	7.6	1	04/26/21 16:28	04/27/21 06:59	87-61-6	H3
1,2,4-Trichlorobenzene	ND	ug/kg	9.4	7.9	1	04/26/21 16:28	04/27/21 06:59	120-82-1	H3
1,1,1-Trichloroethane	ND	ug/kg	9.4	4.9	1	04/26/21 16:28	04/27/21 06:59	71-55-6	H3
1,1,2-Trichloroethane	ND	ug/kg	9.4	3.1	1	04/26/21 16:28	04/27/21 06:59	79-00-5	H3
Trichloroethene	ND	ug/kg	9.4	2.4	1	04/26/21 16:28	04/27/21 06:59	79-01-6	H3
Trichlorofluoromethane	ND	ug/kg	9.4	5.2	1	04/26/21 16:28	04/27/21 06:59	75-69-4	H3
1,2,3-Trichloropropane	ND	ug/kg	9.4	4.7	1	04/26/21 16:28	04/27/21 06:59	96-18-4	H3
1,2,4-Trimethylbenzene	207	ug/kg	9.4	2.6	1	04/26/21 16:28	04/27/21 06:59	95-63-6	H3
1,3,5-Trimethylbenzene	82.7	ug/kg	9.4	3.2	1	04/26/21 16:28	04/27/21 06:59	108-67-8	H3
Vinyl acetate	ND	ug/kg	93.8	6.8	1	04/26/21 16:28	04/27/21 06:59	108-05-4	H3
Vinyl chloride	ND	ug/kg	18.8	4.8	1	04/26/21 16:28	04/27/21 06:59	75-01-4	H3
Xylene (Total)	632	ug/kg	18.8	5.3	1	04/26/21 16:28	04/27/21 06:59	1330-20-7	
m&p-Xylene	396	ug/kg	18.8	6.4	1	04/26/21 16:28	04/27/21 06:59	179601-23-1	H3
o-Xylene	237	ug/kg	9.4	4.1	1	04/26/21 16:28	04/27/21 06:59	95-47-6	H3
Surrogates									
Toluene-d8 (S)	100	%	70-130		1	04/26/21 16:28	04/27/21 06:59	2037-26-5	
4-Bromofluorobenzene (S)	106	%	69-134		1	04/26/21 16:28	04/27/21 06:59	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1	04/26/21 16:28	04/27/21 06:59	17060-07-0	

Percent Moisture

Analytical Method: SW-846
Pace Analytical Services - Charlotte

Percent Moisture	25.8	%	0.10	0.10	1		04/22/21 15:04		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_0.5-1.0_20210317 **Lab ID:** 92531096003 Collected: 03/17/21 10:50 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Benzo(a)pyrene	13.9	ug/kg	11.8	1.2	1	04/24/21 15:57	04/25/21 13:48	50-32-8	H3
Surrogates									
2-Fluorobiphenyl (S)	65	%	31-130		1	04/24/21 15:57	04/25/21 13:48	321-60-8	
Nitrobenzene-d5 (S)	55	%	32-130		1	04/24/21 15:57	04/25/21 13:48	4165-60-0	
Terphenyl-d14 (S)	46	%	24-130		1	04/24/21 15:57	04/25/21 13:48	1718-51-0	
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	ND	ug/kg	391	137	1	04/23/21 11:32	04/26/21 12:22	83-32-9	H3
Acenaphthylene	ND	ug/kg	391	137	1	04/23/21 11:32	04/26/21 12:22	208-96-8	H3
Aniline	ND	ug/kg	391	153	1	04/23/21 11:32	04/26/21 12:22	62-53-3	H3
Anthracene	ND	ug/kg	391	128	1	04/23/21 11:32	04/26/21 12:22	120-12-7	H3
Benzo(a)anthracene	ND	ug/kg	391	130	1	04/23/21 11:32	04/26/21 12:22	56-55-3	H3
Benzo(b)fluoranthene	ND	ug/kg	391	130	1	04/23/21 11:32	04/26/21 12:22	205-99-2	H3
Benzo(g,h,i)perylene	ND	ug/kg	391	152	1	04/23/21 11:32	04/26/21 12:22	191-24-2	H3
Benzo(k)fluoranthene	ND	ug/kg	391	137	1	04/23/21 11:32	04/26/21 12:22	207-08-9	H3
Benzoic Acid	ND	ug/kg	1950	840	1	04/23/21 11:32	04/26/21 12:22	65-85-0	H3
Benzyl alcohol	ND	ug/kg	782	296	1	04/23/21 11:32	04/26/21 12:22	100-51-6	H3
4-Bromophenylphenyl ether	ND	ug/kg	391	150	1	04/23/21 11:32	04/26/21 12:22	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	391	165	1	04/23/21 11:32	04/26/21 12:22	85-68-7	H3
4-Chloro-3-methylphenol	ND	ug/kg	782	275	1	04/23/21 11:32	04/26/21 12:22	59-50-7	H3
4-Chloroaniline	ND	ug/kg	782	307	1	04/23/21 11:32	04/26/21 12:22	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	391	162	1	04/23/21 11:32	04/26/21 12:22	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	391	147	1	04/23/21 11:32	04/26/21 12:22	111-44-4	H3
2-Chloronaphthalene	ND	ug/kg	391	155	1	04/23/21 11:32	04/26/21 12:22	91-58-7	H3
2-Chlorophenol	ND	ug/kg	391	147	1	04/23/21 11:32	04/26/21 12:22	95-57-8	H3
4-Chlorophenylphenyl ether	ND	ug/kg	391	146	1	04/23/21 11:32	04/26/21 12:22	7005-72-3	H3
Chrysene	ND	ug/kg	391	142	1	04/23/21 11:32	04/26/21 12:22	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	391	150	1	04/23/21 11:32	04/26/21 12:22	53-70-3	H3
Dibenzofuran	ND	ug/kg	391	141	1	04/23/21 11:32	04/26/21 12:22	132-64-9	H3
3,3'-Dichlorobenzidine	ND	ug/kg	782	264	1	04/23/21 11:32	04/26/21 12:22	91-94-1	H3,IL
2,4-Dichlorophenol	ND	ug/kg	391	153	1	04/23/21 11:32	04/26/21 12:22	120-83-2	H3
Diethylphthalate	ND	ug/kg	391	143	1	04/23/21 11:32	04/26/21 12:22	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	391	162	1	04/23/21 11:32	04/26/21 12:22	105-67-9	H3
Dimethylphthalate	ND	ug/kg	391	142	1	04/23/21 11:32	04/26/21 12:22	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	391	131	1	04/23/21 11:32	04/26/21 12:22	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	782	365	1	04/23/21 11:32	04/26/21 12:22	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	1950	1210	1	04/23/21 11:32	04/26/21 12:22	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	391	150	1	04/23/21 11:32	04/26/21 12:22	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	391	143	1	04/23/21 11:32	04/26/21 12:22	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	391	154	1	04/23/21 11:32	04/26/21 12:22	117-84-0	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	391	152	1	04/23/21 11:32	04/26/21 12:22	117-81-7	H3
Fluoranthene	ND	ug/kg	391	134	1	04/23/21 11:32	04/26/21 12:22	206-44-0	H3

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_0.5-1.0_20210317 **Lab ID:** 92531096003 **Collected:** 03/17/21 10:50 **Received:** 04/02/21 09:40 **Matrix:** Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Fluorene	ND	ug/kg	391	137	1	04/23/21 11:32	04/26/21 12:22	86-73-7	H3
Hexachlorobenzene	ND	ug/kg	391	153	1	04/23/21 11:32	04/26/21 12:22	118-74-1	H3
Hexachlorocyclopentadiene	ND	ug/kg	391	224	1	04/23/21 11:32	04/26/21 12:22	77-47-4	H3
Hexachloroethane	ND	ug/kg	391	149	1	04/23/21 11:32	04/26/21 12:22	67-72-1	H3
Indeno(1,2,3-cd)pyrene	ND	ug/kg	391	154	1	04/23/21 11:32	04/26/21 12:22	193-39-5	H3
Isophorone	ND	ug/kg	391	174	1	04/23/21 11:32	04/26/21 12:22	78-59-1	H3
1-Methylnaphthalene	ND	ug/kg	391	137	1	04/23/21 11:32	04/26/21 12:22	90-12-0	H3
2-Methylnaphthalene	ND	ug/kg	391	156	1	04/23/21 11:32	04/26/21 12:22	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	391	160	1	04/23/21 11:32	04/26/21 12:22	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	391	158	1	04/23/21 11:32	04/26/21 12:22	15831-10-4	H3
2-Nitroaniline	ND	ug/kg	1950	320	1	04/23/21 11:32	04/26/21 12:22	88-74-4	H3
3-Nitroaniline	ND	ug/kg	1950	307	1	04/23/21 11:32	04/26/21 12:22	99-09-2	H3
4-Nitroaniline	ND	ug/kg	782	297	1	04/23/21 11:32	04/26/21 12:22	100-01-6	H3
Nitrobenzene	ND	ug/kg	391	181	1	04/23/21 11:32	04/26/21 12:22	98-95-3	H3
2-Nitrophenol	ND	ug/kg	391	169	1	04/23/21 11:32	04/26/21 12:22	88-75-5	H3
4-Nitrophenol	ND	ug/kg	1950	756	1	04/23/21 11:32	04/26/21 12:22	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	391	131	1	04/23/21 11:32	04/26/21 12:22	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	391	147	1	04/23/21 11:32	04/26/21 12:22	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	391	139	1	04/23/21 11:32	04/26/21 12:22	86-30-6	H3
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	391	186	1	04/23/21 11:32	04/26/21 12:22	108-60-1	H3
Pentachlorophenol	ND	ug/kg	782	383	1	04/23/21 11:32	04/26/21 12:22	87-86-5	H3
Phenanthrene	ND	ug/kg	391	128	1	04/23/21 11:32	04/26/21 12:22	85-01-8	H3
Phenol	ND	ug/kg	391	174	1	04/23/21 11:32	04/26/21 12:22	108-95-2	H3
Pyrene	ND	ug/kg	391	159	1	04/23/21 11:32	04/26/21 12:22	129-00-0	H3
Pyridine	ND	ug/kg	391	123	1	04/23/21 11:32	04/26/21 12:22	110-86-1	H3
2,4,5-Trichlorophenol	ND	ug/kg	391	179	1	04/23/21 11:32	04/26/21 12:22	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	391	161	1	04/23/21 11:32	04/26/21 12:22	88-06-2	H3
Surrogates									
Nitrobenzene-d5 (S)	76	%	21-130		1	04/23/21 11:32	04/26/21 12:22	4165-60-0	
2-Fluorobiphenyl (S)	74	%	19-130		1	04/23/21 11:32	04/26/21 12:22	321-60-8	
Terphenyl-d14 (S)	62	%	15-130		1	04/23/21 11:32	04/26/21 12:22	1718-51-0	
Phenol-d6 (S)	69	%	18-130		1	04/23/21 11:32	04/26/21 12:22	13127-88-3	
2-Fluorophenol (S)	67	%	18-130		1	04/23/21 11:32	04/26/21 12:22	367-12-4	
2,4,6-Tribromophenol (S)	76	%	18-130		1	04/23/21 11:32	04/26/21 12:22	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/kg	116	37.1	1	04/22/21 11:42	04/22/21 21:11	67-64-1	H3
Benzene	ND	ug/kg	5.8	2.3	1	04/22/21 11:42	04/22/21 21:11	71-43-2	H3
Bromobenzene	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:11	108-86-1	H3
Bromochloromethane	ND	ug/kg	5.8	1.7	1	04/22/21 11:42	04/22/21 21:11	74-97-5	H3
Bromodichloromethane	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:11	75-27-4	H3
Bromoform	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	75-25-2	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_0.5-1.0_20210317 Lab ID: 92531096003 Collected: 03/17/21 10:50 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Bromomethane	ND	ug/kg	11.6	9.1	1	04/22/21 11:42	04/22/21 21:11	74-83-9	H3
2-Butanone (MEK)	ND	ug/kg	116	27.8	1	04/22/21 11:42	04/22/21 21:11	78-93-3	H3
n-Butylbenzene	ND	ug/kg	5.8	2.7	1	04/22/21 11:42	04/22/21 21:11	104-51-8	H3
sec-Butylbenzene	ND	ug/kg	5.8	2.5	1	04/22/21 11:42	04/22/21 21:11	135-98-8	H3
tert-Butylbenzene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:11	98-06-6	H3
Carbon tetrachloride	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:11	56-23-5	H3
Chlorobenzene	ND	ug/kg	5.8	1.1	1	04/22/21 11:42	04/22/21 21:11	108-90-7	H3
Chloroethane	ND	ug/kg	11.6	4.5	1	04/22/21 11:42	04/22/21 21:11	75-00-3	H3
Chloroform	ND	ug/kg	5.8	3.5	1	04/22/21 11:42	04/22/21 21:11	67-66-3	H3
Chloromethane	ND	ug/kg	11.6	4.9	1	04/22/21 11:42	04/22/21 21:11	74-87-3	H3
2-Chlorotoluene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	95-49-8	H3
4-Chlorotoluene	ND	ug/kg	5.8	1.0	1	04/22/21 11:42	04/22/21 21:11	106-43-4	H3
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:11	96-12-8	H3
Dibromochloromethane	ND	ug/kg	5.8	3.3	1	04/22/21 11:42	04/22/21 21:11	124-48-1	H3
1,2-Dibromoethane (EDB)	ND	ug/kg	5.8	2.5	1	04/22/21 11:42	04/22/21 21:11	106-93-4	H3
Dibromomethane	ND	ug/kg	5.8	1.2	1	04/22/21 11:42	04/22/21 21:11	74-95-3	H3
1,2-Dichlorobenzene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:11	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:11	541-73-1	H3
1,4-Dichlorobenzene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:11	106-46-7	H3
Dichlorodifluoromethane	ND	ug/kg	11.6	2.5	1	04/22/21 11:42	04/22/21 21:11	75-71-8	H3
1,1-Dichloroethane	ND	ug/kg	5.8	2.4	1	04/22/21 11:42	04/22/21 21:11	75-34-3	H3
1,2-Dichloroethane	ND	ug/kg	5.8	3.8	1	04/22/21 11:42	04/22/21 21:11	107-06-2	H3
1,1-Dichloroethene	ND	ug/kg	5.8	2.4	1	04/22/21 11:42	04/22/21 21:11	75-35-4	H3
cis-1,2-Dichloroethene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	156-59-2	H3
trans-1,2-Dichloroethene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	156-60-5	H3
1,2-Dichloropropane	ND	ug/kg	5.8	1.7	1	04/22/21 11:42	04/22/21 21:11	78-87-5	H3
1,3-Dichloropropane	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:11	142-28-9	H3
2,2-Dichloropropane	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:11	594-20-7	H3
1,1-Dichloropropene	ND	ug/kg	5.8	2.8	1	04/22/21 11:42	04/22/21 21:11	563-58-6	H3
cis-1,3-Dichloropropene	ND	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:11	10061-01-5	H3
trans-1,3-Dichloropropene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	10061-02-6	H3
Diisopropyl ether	ND	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:11	108-20-3	H3
Ethylbenzene	ND	ug/kg	5.8	2.7	1	04/22/21 11:42	04/22/21 21:11	100-41-4	H3
Hexachloro-1,3-butadiene	ND	ug/kg	11.6	9.5	1	04/22/21 11:42	04/22/21 21:11	87-68-3	H3
2-Hexanone	ND	ug/kg	57.9	5.6	1	04/22/21 11:42	04/22/21 21:11	591-78-6	H3
Isopropylbenzene (Cumene)	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:11	98-82-8	H3
p-Isopropyltoluene	25.2	ug/kg	5.8	2.8	1	04/22/21 11:42	04/22/21 21:11	99-87-6	H3
Methylene Chloride	ND	ug/kg	23.1	15.9	1	04/22/21 11:42	04/22/21 21:11	75-09-2	H3
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	57.9	5.6	1	04/22/21 11:42	04/22/21 21:11	108-10-1	H3
Methyl-tert-butyl ether	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:11	1634-04-4	H3
Naphthalene	8.3	ug/kg	5.8	3.0	1	04/22/21 11:42	04/22/21 21:11	91-20-3	H3
n-Propylbenzene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:11	103-65-1	H3
Styrene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:11	100-42-5	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_0.5-1.0_20210317 Lab ID: 92531096003 Collected: 03/17/21 10:50 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:11	630-20-6	H3
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:11	79-34-5	H3
Tetrachloroethene	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:11	127-18-4	H3
Toluene	4.6J	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:11	108-88-3	H3
1,2,3-Trichlorobenzene	ND	ug/kg	5.8	4.7	1	04/22/21 11:42	04/22/21 21:11	87-61-6	H3
1,2,4-Trichlorobenzene	ND	ug/kg	5.8	4.9	1	04/22/21 11:42	04/22/21 21:11	120-82-1	H3
1,1,1-Trichloroethane	ND	ug/kg	5.8	3.0	1	04/22/21 11:42	04/22/21 21:11	71-55-6	H3
1,1,2-Trichloroethane	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:11	79-00-5	H3
Trichloroethene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:11	79-01-6	H3
Trichlorofluoromethane	ND	ug/kg	5.8	3.2	1	04/22/21 11:42	04/22/21 21:11	75-69-4	H3
1,2,3-Trichloropropane	ND	ug/kg	5.8	2.9	1	04/22/21 11:42	04/22/21 21:11	96-18-4	H3
1,2,4-Trimethylbenzene	11.8	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:11	95-63-6	H3
1,3,5-Trimethylbenzene	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:11	108-67-8	H3
Vinyl acetate	ND	ug/kg	57.9	4.2	1	04/22/21 11:42	04/22/21 21:11	108-05-4	H3
Vinyl chloride	ND	ug/kg	11.6	2.9	1	04/22/21 11:42	04/22/21 21:11	75-01-4	H3
Xylene (Total)	10.1J	ug/kg	11.6	3.3	1	04/22/21 11:42	04/22/21 21:11	1330-20-7	
m&p-Xylene	6.8J	ug/kg	11.6	4.0	1	04/22/21 11:42	04/22/21 21:11	179601-23-1	H3
o-Xylene	3.3J	ug/kg	5.8	2.6	1	04/22/21 11:42	04/22/21 21:11	95-47-6	H3
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	04/22/21 11:42	04/22/21 21:11	2037-26-5	
4-Bromofluorobenzene (S)	107	%	69-134		1	04/22/21 11:42	04/22/21 21:11	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1	04/22/21 11:42	04/22/21 21:11	17060-07-0	
Percent Moisture									
Analytical Method: SW-846									
Pace Analytical Services - Charlotte									
Percent Moisture	15.0	%	0.10	0.10	1		04/22/21 15:04		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_5.5-6.0_20210317 **Lab ID:** 92531096004 Collected: 03/17/21 10:55 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Benzo(a)pyrene	11.7J	ug/kg	12.1	1.2	1	04/24/21 15:57	04/25/21 14:10	50-32-8	H3
Surrogates									
2-Fluorobiphenyl (S)	53	%	31-130		1	04/24/21 15:57	04/25/21 14:10	321-60-8	
Nitrobenzene-d5 (S)	57	%	32-130		1	04/24/21 15:57	04/25/21 14:10	4165-60-0	
Terphenyl-d14 (S)	41	%	24-130		1	04/24/21 15:57	04/25/21 14:10	1718-51-0	
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Acenaphthene	219J	ug/kg	402	141	1	04/23/21 11:32	04/26/21 12:50	83-32-9	H3
Acenaphthylene	ND	ug/kg	402	141	1	04/23/21 11:32	04/26/21 12:50	208-96-8	H3
Aniline	ND	ug/kg	402	157	1	04/23/21 11:32	04/26/21 12:50	62-53-3	H3
Anthracene	ND	ug/kg	402	132	1	04/23/21 11:32	04/26/21 12:50	120-12-7	H3
Benzo(a)anthracene	525	ug/kg	402	134	1	04/23/21 11:32	04/26/21 12:50	56-55-3	H3
Benzo(b)fluoranthene	999	ug/kg	402	134	1	04/23/21 11:32	04/26/21 12:50	205-99-2	H3
Benzo(g,h,i)perylene	782	ug/kg	402	156	1	04/23/21 11:32	04/26/21 12:50	191-24-2	H3
Benzo(k)fluoranthene	400J	ug/kg	402	141	1	04/23/21 11:32	04/26/21 12:50	207-08-9	H3
Benzoic Acid	ND	ug/kg	2010	864	1	04/23/21 11:32	04/26/21 12:50	65-85-0	H3
Benzyl alcohol	ND	ug/kg	805	305	1	04/23/21 11:32	04/26/21 12:50	100-51-6	H3
4-Bromophenylphenyl ether	ND	ug/kg	402	155	1	04/23/21 11:32	04/26/21 12:50	101-55-3	H3
Butylbenzylphthalate	ND	ug/kg	402	169	1	04/23/21 11:32	04/26/21 12:50	85-68-7	H3
4-Chloro-3-methylphenol	ND	ug/kg	805	283	1	04/23/21 11:32	04/26/21 12:50	59-50-7	H3
4-Chloroaniline	ND	ug/kg	805	316	1	04/23/21 11:32	04/26/21 12:50	106-47-8	H3
bis(2-Chloroethoxy)methane	ND	ug/kg	402	167	1	04/23/21 11:32	04/26/21 12:50	111-91-1	H3
bis(2-Chloroethyl) ether	ND	ug/kg	402	151	1	04/23/21 11:32	04/26/21 12:50	111-44-4	H3
2-Chloronaphthalene	ND	ug/kg	402	160	1	04/23/21 11:32	04/26/21 12:50	91-58-7	H3
2-Chlorophenol	ND	ug/kg	402	151	1	04/23/21 11:32	04/26/21 12:50	95-57-8	H3
4-Chlorophenylphenyl ether	ND	ug/kg	402	150	1	04/23/21 11:32	04/26/21 12:50	7005-72-3	H3
Chrysene	413	ug/kg	402	146	1	04/23/21 11:32	04/26/21 12:50	218-01-9	H3
Dibenz(a,h)anthracene	ND	ug/kg	402	155	1	04/23/21 11:32	04/26/21 12:50	53-70-3	H3
Dibenzofuran	ND	ug/kg	402	145	1	04/23/21 11:32	04/26/21 12:50	132-64-9	H3
3,3'-Dichlorobenzidine	ND	ug/kg	805	272	1	04/23/21 11:32	04/26/21 12:50	91-94-1	H3,IL
2,4-Dichlorophenol	ND	ug/kg	402	157	1	04/23/21 11:32	04/26/21 12:50	120-83-2	H3
Diethylphthalate	ND	ug/kg	402	148	1	04/23/21 11:32	04/26/21 12:50	84-66-2	H3
2,4-Dimethylphenol	ND	ug/kg	402	167	1	04/23/21 11:32	04/26/21 12:50	105-67-9	H3
Dimethylphthalate	ND	ug/kg	402	146	1	04/23/21 11:32	04/26/21 12:50	131-11-3	H3
Di-n-butylphthalate	ND	ug/kg	402	135	1	04/23/21 11:32	04/26/21 12:50	84-74-2	H3
4,6-Dinitro-2-methylphenol	ND	ug/kg	805	376	1	04/23/21 11:32	04/26/21 12:50	534-52-1	H3
2,4-Dinitrophenol	ND	ug/kg	2010	1240	1	04/23/21 11:32	04/26/21 12:50	51-28-5	H3
2,4-Dinitrotoluene	ND	ug/kg	402	155	1	04/23/21 11:32	04/26/21 12:50	121-14-2	H3
2,6-Dinitrotoluene	ND	ug/kg	402	148	1	04/23/21 11:32	04/26/21 12:50	606-20-2	H3
Di-n-octylphthalate	ND	ug/kg	402	159	1	04/23/21 11:32	04/26/21 12:50	117-84-0	H3
bis(2-Ethylhexyl)phthalate	ND	ug/kg	402	156	1	04/23/21 11:32	04/26/21 12:50	117-81-7	H3
Fluoranthene	225J	ug/kg	402	138	1	04/23/21 11:32	04/26/21 12:50	206-44-0	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_5.5-6.0_20210317 **Lab ID:** 92531096004 Collected: 03/17/21 10:55 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270E MSSV Microwave									
Analytical Method: EPA 8270E Preparation Method: EPA 3546									
Pace Analytical Services - Charlotte									
Fluorene	169J	ug/kg	402	141	1	04/23/21 11:32	04/26/21 12:50	86-73-7	H3
Hexachlorobenzene	ND	ug/kg	402	157	1	04/23/21 11:32	04/26/21 12:50	118-74-1	H3
Hexachlorocyclopentadiene	ND	ug/kg	402	230	1	04/23/21 11:32	04/26/21 12:50	77-47-4	H3
Hexachloroethane	ND	ug/kg	402	154	1	04/23/21 11:32	04/26/21 12:50	67-72-1	H3
Indeno(1,2,3-cd)pyrene	717	ug/kg	402	159	1	04/23/21 11:32	04/26/21 12:50	193-39-5	H3
Isophorone	ND	ug/kg	402	179	1	04/23/21 11:32	04/26/21 12:50	78-59-1	H3
1-Methylnaphthalene	304J	ug/kg	402	141	1	04/23/21 11:32	04/26/21 12:50	90-12-0	H3
2-Methylnaphthalene	319J	ug/kg	402	161	1	04/23/21 11:32	04/26/21 12:50	91-57-6	H3
2-Methylphenol(o-Cresol)	ND	ug/kg	402	165	1	04/23/21 11:32	04/26/21 12:50	95-48-7	H3
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	402	162	1	04/23/21 11:32	04/26/21 12:50	15831-10-4	H3
2-Nitroaniline	ND	ug/kg	2010	329	1	04/23/21 11:32	04/26/21 12:50	88-74-4	H3
3-Nitroaniline	ND	ug/kg	2010	316	1	04/23/21 11:32	04/26/21 12:50	99-09-2	H3
4-Nitroaniline	ND	ug/kg	805	306	1	04/23/21 11:32	04/26/21 12:50	100-01-6	H3
Nitrobenzene	ND	ug/kg	402	187	1	04/23/21 11:32	04/26/21 12:50	98-95-3	H3
2-Nitrophenol	ND	ug/kg	402	174	1	04/23/21 11:32	04/26/21 12:50	88-75-5	H3
4-Nitrophenol	ND	ug/kg	2010	778	1	04/23/21 11:32	04/26/21 12:50	100-02-7	H3
N-Nitrosodimethylamine	ND	ug/kg	402	135	1	04/23/21 11:32	04/26/21 12:50	62-75-9	H3
N-Nitroso-di-n-propylamine	ND	ug/kg	402	151	1	04/23/21 11:32	04/26/21 12:50	621-64-7	H3
N-Nitrosodiphenylamine	ND	ug/kg	402	143	1	04/23/21 11:32	04/26/21 12:50	86-30-6	H3
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	402	191	1	04/23/21 11:32	04/26/21 12:50	108-60-1	H3
Pentachlorophenol	ND	ug/kg	805	394	1	04/23/21 11:32	04/26/21 12:50	87-86-5	H3
Phenanthrene	398J	ug/kg	402	132	1	04/23/21 11:32	04/26/21 12:50	85-01-8	H3
Phenol	ND	ug/kg	402	179	1	04/23/21 11:32	04/26/21 12:50	108-95-2	H3
Pyrene	294J	ug/kg	402	163	1	04/23/21 11:32	04/26/21 12:50	129-00-0	H3
Pyridine	ND	ug/kg	402	127	1	04/23/21 11:32	04/26/21 12:50	110-86-1	H3
2,4,5-Trichlorophenol	ND	ug/kg	402	184	1	04/23/21 11:32	04/26/21 12:50	95-95-4	H3
2,4,6-Trichlorophenol	ND	ug/kg	402	166	1	04/23/21 11:32	04/26/21 12:50	88-06-2	H3
Surrogates									
Nitrobenzene-d5 (S)	75	%	21-130		1	04/23/21 11:32	04/26/21 12:50	4165-60-0	
2-Fluorobiphenyl (S)	59	%	19-130		1	04/23/21 11:32	04/26/21 12:50	321-60-8	
Terphenyl-d14 (S)	50	%	15-130		1	04/23/21 11:32	04/26/21 12:50	1718-51-0	
Phenol-d6 (S)	70	%	18-130		1	04/23/21 11:32	04/26/21 12:50	13127-88-3	
2-Fluorophenol (S)	68	%	18-130		1	04/23/21 11:32	04/26/21 12:50	367-12-4	
2,4,6-Tribromophenol (S)	80	%	18-130		1	04/23/21 11:32	04/26/21 12:50	118-79-6	
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
Acetone	62.5J	ug/kg	116	37.2	1	04/22/21 11:42	04/22/21 21:29	67-64-1	H3
Benzene	ND	ug/kg	5.8	2.3	1	04/22/21 11:42	04/22/21 21:29	71-43-2	H3
Bromobenzene	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:29	108-86-1	H3
Bromochloromethane	ND	ug/kg	5.8	1.7	1	04/22/21 11:42	04/22/21 21:29	74-97-5	H3
Bromodichloromethane	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:29	75-27-4	H3
Bromoform	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:29	75-25-2	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_5.5-6.0_20210317 Lab ID: 92531096004 Collected: 03/17/21 10:55 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Charlotte									
Bromomethane	ND	ug/kg	11.6	9.2	1	04/22/21 11:42	04/22/21 21:29	74-83-9	H3
2-Butanone (MEK)	ND	ug/kg	116	27.8	1	04/22/21 11:42	04/22/21 21:29	78-93-3	H3
n-Butylbenzene	ND	ug/kg	5.8	2.7	1	04/22/21 11:42	04/22/21 21:29	104-51-8	H3
sec-Butylbenzene	ND	ug/kg	5.8	2.6	1	04/22/21 11:42	04/22/21 21:29	135-98-8	H3
tert-Butylbenzene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:29	98-06-6	H3
Carbon tetrachloride	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:29	56-23-5	H3
Chlorobenzene	ND	ug/kg	5.8	1.1	1	04/22/21 11:42	04/22/21 21:29	108-90-7	H3
Chloroethane	ND	ug/kg	11.6	4.5	1	04/22/21 11:42	04/22/21 21:29	75-00-3	H3
Chloroform	ND	ug/kg	5.8	3.5	1	04/22/21 11:42	04/22/21 21:29	67-66-3	H3
Chloromethane	ND	ug/kg	11.6	4.9	1	04/22/21 11:42	04/22/21 21:29	74-87-3	H3
2-Chlorotoluene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:29	95-49-8	H3
4-Chlorotoluene	ND	ug/kg	5.8	1.0	1	04/22/21 11:42	04/22/21 21:29	106-43-4	H3
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.8	2.3	1	04/22/21 11:42	04/22/21 21:29	96-12-8	H3
Dibromochloromethane	ND	ug/kg	5.8	3.3	1	04/22/21 11:42	04/22/21 21:29	124-48-1	H3
1,2-Dibromoethane (EDB)	ND	ug/kg	5.8	2.6	1	04/22/21 11:42	04/22/21 21:29	106-93-4	H3
Dibromomethane	ND	ug/kg	5.8	1.2	1	04/22/21 11:42	04/22/21 21:29	74-95-3	H3
1,2-Dichlorobenzene	ND	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:29	95-50-1	H3
1,3-Dichlorobenzene	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:29	541-73-1	H3
1,4-Dichlorobenzene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:29	106-46-7	H3
Dichlorodifluoromethane	ND	ug/kg	11.6	2.5	1	04/22/21 11:42	04/22/21 21:29	75-71-8	H3
1,1-Dichloroethane	ND	ug/kg	5.8	2.4	1	04/22/21 11:42	04/22/21 21:29	75-34-3	H3
1,2-Dichloroethane	ND	ug/kg	5.8	3.8	1	04/22/21 11:42	04/22/21 21:29	107-06-2	H3
1,1-Dichloroethene	ND	ug/kg	5.8	2.4	1	04/22/21 11:42	04/22/21 21:29	75-35-4	H3
cis-1,2-Dichloroethene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:29	156-59-2	H3
trans-1,2-Dichloroethene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:29	156-60-5	H3
1,2-Dichloropropane	ND	ug/kg	5.8	1.7	1	04/22/21 11:42	04/22/21 21:29	78-87-5	H3
1,3-Dichloropropane	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:29	142-28-9	H3
2,2-Dichloropropane	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:29	594-20-7	H3
1,1-Dichloropropene	ND	ug/kg	5.8	2.8	1	04/22/21 11:42	04/22/21 21:29	563-58-6	H3
cis-1,3-Dichloropropene	ND	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:29	10061-01-5	H3
trans-1,3-Dichloropropene	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:29	10061-02-6	H3
Diisopropyl ether	ND	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:29	108-20-3	H3
Ethylbenzene	5.7J	ug/kg	5.8	2.7	1	04/22/21 11:42	04/22/21 21:29	100-41-4	H3
Hexachloro-1,3-butadiene	ND	ug/kg	11.6	9.5	1	04/22/21 11:42	04/22/21 21:29	87-68-3	H3
2-Hexanone	ND	ug/kg	58.0	5.6	1	04/22/21 11:42	04/22/21 21:29	591-78-6	H3
Isopropylbenzene (Cumene)	ND	ug/kg	5.8	2.0	1	04/22/21 11:42	04/22/21 21:29	98-82-8	H3
p-Isopropyltoluene	32.1	ug/kg	5.8	2.9	1	04/22/21 11:42	04/22/21 21:29	99-87-6	H3
Methylene Chloride	ND	ug/kg	23.2	15.9	1	04/22/21 11:42	04/22/21 21:29	75-09-2	H3
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	58.0	5.6	1	04/22/21 11:42	04/22/21 21:29	108-10-1	H3
Methyl-tert-butyl ether	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:29	1634-04-4	H3
Naphthalene	18.3	ug/kg	5.8	3.1	1	04/22/21 11:42	04/22/21 21:29	91-20-3	H3
n-Propylbenzene	178	ug/kg	5.8	2.1	1	04/22/21 11:42	04/22/21 21:29	103-65-1	H3
Styrene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:29	100-42-5	H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: RI-SB-32_SO_5.5-6.0_20210317 **Lab ID:** 92531096004 Collected: 03/17/21 10:55 Received: 04/02/21 09:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260D/5035A/5030B SC Volatiles									
Analytical Method: EPA 8260D Preparation Method: EPA 5035A/5030B									
Pace Analytical Services - Charlotte									
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.8	2.2	1	04/22/21 11:42	04/22/21 21:29	630-20-6	H3
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:29	79-34-5	H3
Tetrachloroethene	ND	ug/kg	5.8	1.8	1	04/22/21 11:42	04/22/21 21:29	127-18-4	H3
Toluene	5.1J	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:29	108-88-3	H3
1,2,3-Trichlorobenzene	ND	ug/kg	5.8	4.7	1	04/22/21 11:42	04/22/21 21:29	87-61-6	H3
1,2,4-Trichlorobenzene	ND	ug/kg	5.8	4.9	1	04/22/21 11:42	04/22/21 21:29	120-82-1	H3
1,1,1-Trichloroethane	ND	ug/kg	5.8	3.0	1	04/22/21 11:42	04/22/21 21:29	71-55-6	H3
1,1,2-Trichloroethane	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:29	79-00-5	H3
Trichloroethene	ND	ug/kg	5.8	1.5	1	04/22/21 11:42	04/22/21 21:29	79-01-6	H3
Trichlorofluoromethane	ND	ug/kg	5.8	3.2	1	04/22/21 11:42	04/22/21 21:29	75-69-4	H3
1,2,3-Trichloropropane	ND	ug/kg	5.8	2.9	1	04/22/21 11:42	04/22/21 21:29	96-18-4	H3
1,2,4-Trimethylbenzene	22.4	ug/kg	5.8	1.6	1	04/22/21 11:42	04/22/21 21:29	95-63-6	H3
1,3,5-Trimethylbenzene	ND	ug/kg	5.8	1.9	1	04/22/21 11:42	04/22/21 21:29	108-67-8	H3
Vinyl acetate	ND	ug/kg	58.0	4.2	1	04/22/21 11:42	04/22/21 21:29	108-05-4	H3
Vinyl chloride	ND	ug/kg	11.6	2.9	1	04/22/21 11:42	04/22/21 21:29	75-01-4	H3
Xylene (Total)	22.4	ug/kg	11.6	3.3	1	04/22/21 11:42	04/22/21 21:29	1330-20-7	
m&p-Xylene	10.9J	ug/kg	11.6	4.0	1	04/22/21 11:42	04/22/21 21:29	179601-23-1	H3
o-Xylene	11.5	ug/kg	5.8	2.6	1	04/22/21 11:42	04/22/21 21:29	95-47-6	H3
Surrogates									
Toluene-d8 (S)	101	%	70-130		1	04/22/21 11:42	04/22/21 21:29	2037-26-5	
4-Bromofluorobenzene (S)	122	%	69-134		1	04/22/21 11:42	04/22/21 21:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1	04/22/21 11:42	04/22/21 21:29	17060-07-0	

Percent Moisture

Analytical Method: SW-846

Pace Analytical Services - Charlotte

Percent Moisture	18.0	%	0.10	0.10	1		04/22/21 15:04		N2
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: TRIP BLANK **Lab ID: 92531096005** Collected: 04/02/21 00:00 Received: 04/02/21 09:40 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8260 MSV Low Level SC									
Analytical Method: EPA 8260D									
Pace Analytical Services - Charlotte									
Acetone	ND	ug/L	25.0	5.1	1		04/23/21 00:05	67-64-1	H1
Benzene	ND	ug/L	1.0	0.34	1		04/23/21 00:05	71-43-2	H1
Bromobenzene	ND	ug/L	1.0	0.29	1		04/23/21 00:05	108-86-1	H1
Bromochloromethane	ND	ug/L	1.0	0.47	1		04/23/21 00:05	74-97-5	H1
Bromodichloromethane	ND	ug/L	1.0	0.31	1		04/23/21 00:05	75-27-4	H1
Bromoform	ND	ug/L	1.0	0.34	1		04/23/21 00:05	75-25-2	H1
Bromomethane	ND	ug/L	2.0	1.7	1		04/23/21 00:05	74-83-9	H1
2-Butanone (MEK)	ND	ug/L	5.0	4.0	1		04/23/21 00:05	78-93-3	H1
Carbon tetrachloride	ND	ug/L	1.0	0.33	1		04/23/21 00:05	56-23-5	H1
Chlorobenzene	ND	ug/L	1.0	0.28	1		04/23/21 00:05	108-90-7	H1
Chloroethane	ND	ug/L	1.0	0.65	1		04/23/21 00:05	75-00-3	H1,v1
Chloroform	ND	ug/L	5.0	1.6	1		04/23/21 00:05	67-66-3	H1
Chloromethane	ND	ug/L	1.0	0.54	1		04/23/21 00:05	74-87-3	H1
2-Chlorotoluene	ND	ug/L	1.0	0.32	1		04/23/21 00:05	95-49-8	H1
4-Chlorotoluene	ND	ug/L	1.0	0.32	1		04/23/21 00:05	106-43-4	H1
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	0.34	1		04/23/21 00:05	96-12-8	H1
Dibromochloromethane	ND	ug/L	1.0	0.36	1		04/23/21 00:05	124-48-1	H1
Dibromomethane	ND	ug/L	1.0	0.39	1		04/23/21 00:05	74-95-3	H1
1,2-Dichlorobenzene	ND	ug/L	1.0	0.34	1		04/23/21 00:05	95-50-1	H1
1,3-Dichlorobenzene	ND	ug/L	1.0	0.34	1		04/23/21 00:05	541-73-1	H1
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		04/23/21 00:05	106-46-7	H1
Dichlorodifluoromethane	ND	ug/L	1.0	0.35	1		04/23/21 00:05	75-71-8	H1
1,1-Dichloroethane	ND	ug/L	1.0	0.37	1		04/23/21 00:05	75-34-3	H1
1,2-Dichloroethane	ND	ug/L	1.0	0.32	1		04/23/21 00:05	107-06-2	H1
1,1-Dichloroethene	ND	ug/L	1.0	0.35	1		04/23/21 00:05	75-35-4	H1
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.38	1		04/23/21 00:05	156-59-2	H1
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.40	1		04/23/21 00:05	156-60-5	H1
1,2-Dichloropropane	ND	ug/L	1.0	0.36	1		04/23/21 00:05	78-87-5	H1
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		04/23/21 00:05	142-28-9	H1
2,2-Dichloropropane	ND	ug/L	1.0	0.39	1		04/23/21 00:05	594-20-7	H1
1,1-Dichloropropene	ND	ug/L	1.0	0.43	1		04/23/21 00:05	563-58-6	H1
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		04/23/21 00:05	10061-01-5	H1
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.36	1		04/23/21 00:05	10061-02-6	H1
Diisopropyl ether	ND	ug/L	1.0	0.31	1		04/23/21 00:05	108-20-3	H1
Ethylbenzene	ND	ug/L	1.0	0.30	1		04/23/21 00:05	100-41-4	H1
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1.5	1		04/23/21 00:05	87-68-3	H1
2-Hexanone	ND	ug/L	5.0	0.48	1		04/23/21 00:05	591-78-6	H1
p-Isopropyltoluene	ND	ug/L	1.0	0.41	1		04/23/21 00:05	99-87-6	H1
Methylene Chloride	ND	ug/L	5.0	2.0	1		04/23/21 00:05	75-09-2	H1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	2.7	1		04/23/21 00:05	108-10-1	H1
Methyl-tert-butyl ether	ND	ug/L	1.0	0.42	1		04/23/21 00:05	1634-04-4	H1
Naphthalene	ND	ug/L	1.0	0.64	1		04/23/21 00:05	91-20-3	H1
Styrene	ND	ug/L	1.0	0.29	1		04/23/21 00:05	100-42-5	H1
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		04/23/21 00:05	630-20-6	H1
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		04/23/21 00:05	79-34-5	H1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Sample: TRIP BLANK Lab ID: 92531096005 Collected: 04/02/21 00:00 Received: 04/02/21 09:40 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC									
Analytical Method: EPA 8260D									
Pace Analytical Services - Charlotte									
Tetrachloroethene	ND	ug/L	1.0	0.29	1		04/23/21 00:05	127-18-4	H1
Toluene	ND	ug/L	1.0	0.48	1		04/23/21 00:05	108-88-3	H1
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.81	1		04/23/21 00:05	87-61-6	H1
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.64	1		04/23/21 00:05	120-82-1	H1
1,1,1-Trichloroethane	ND	ug/L	1.0	0.33	1		04/23/21 00:05	71-55-6	H1
1,1,2-Trichloroethane	ND	ug/L	1.0	0.32	1		04/23/21 00:05	79-00-5	H1
Trichloroethene	ND	ug/L	1.0	0.38	1		04/23/21 00:05	79-01-6	H1
Trichlorofluoromethane	ND	ug/L	1.0	0.30	1		04/23/21 00:05	75-69-4	H1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.26	1		04/23/21 00:05	96-18-4	H1
Vinyl acetate	ND	ug/L	2.0	1.3	1		04/23/21 00:05	108-05-4	H1,L1
Vinyl chloride	ND	ug/L	1.0	0.39	1		04/23/21 00:05	75-01-4	H1
Xylene (Total)	ND	ug/L	1.0	0.34	1		04/23/21 00:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.71	1		04/23/21 00:05	179601-23-1	H1
o-Xylene	ND	ug/L	1.0	0.34	1		04/23/21 00:05	95-47-6	H1
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		04/23/21 00:05	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70-130		1		04/23/21 00:05	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		04/23/21 00:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

QC Batch: 615558 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260 MSV Low Level SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096005

METHOD BLANK: 3239276 Matrix: Water

Associated Lab Samples: 92531096005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	0.31	04/22/21 23:29	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.33	04/22/21 23:29	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.22	04/22/21 23:29	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.32	04/22/21 23:29	
1,1-Dichloroethane	ug/L	ND	1.0	0.37	04/22/21 23:29	
1,1-Dichloroethene	ug/L	ND	1.0	0.35	04/22/21 23:29	
1,1-Dichloropropene	ug/L	ND	1.0	0.43	04/22/21 23:29	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	0.81	04/22/21 23:29	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.26	04/22/21 23:29	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	0.64	04/22/21 23:29	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	0.34	04/22/21 23:29	
1,2-Dichlorobenzene	ug/L	ND	1.0	0.34	04/22/21 23:29	
1,2-Dichloroethane	ug/L	ND	1.0	0.32	04/22/21 23:29	
1,2-Dichloropropane	ug/L	ND	1.0	0.36	04/22/21 23:29	
1,3-Dichlorobenzene	ug/L	ND	1.0	0.34	04/22/21 23:29	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	04/22/21 23:29	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	04/22/21 23:29	
2,2-Dichloropropane	ug/L	ND	1.0	0.39	04/22/21 23:29	
2-Butanone (MEK)	ug/L	ND	5.0	4.0	04/22/21 23:29	
2-Chlorotoluene	ug/L	ND	1.0	0.32	04/22/21 23:29	
2-Hexanone	ug/L	ND	5.0	0.48	04/22/21 23:29	
4-Chlorotoluene	ug/L	ND	1.0	0.32	04/22/21 23:29	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	2.7	04/22/21 23:29	
Acetone	ug/L	ND	25.0	5.1	04/22/21 23:29	
Benzene	ug/L	ND	1.0	0.34	04/22/21 23:29	
Bromobenzene	ug/L	ND	1.0	0.29	04/22/21 23:29	
Bromochloromethane	ug/L	ND	1.0	0.47	04/22/21 23:29	
Bromodichloromethane	ug/L	ND	1.0	0.31	04/22/21 23:29	
Bromoform	ug/L	ND	1.0	0.34	04/22/21 23:29	
Bromomethane	ug/L	ND	2.0	1.7	04/22/21 23:29	
Carbon tetrachloride	ug/L	ND	1.0	0.33	04/22/21 23:29	
Chlorobenzene	ug/L	ND	1.0	0.28	04/22/21 23:29	
Chloroethane	ug/L	ND	1.0	0.65	04/22/21 23:29	v1
Chloroform	ug/L	ND	5.0	1.6	04/22/21 23:29	
Chloromethane	ug/L	ND	1.0	0.54	04/22/21 23:29	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.38	04/22/21 23:29	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.36	04/22/21 23:29	
Dibromochloromethane	ug/L	ND	1.0	0.36	04/22/21 23:29	
Dibromomethane	ug/L	ND	1.0	0.39	04/22/21 23:29	
Dichlorodifluoromethane	ug/L	ND	1.0	0.35	04/22/21 23:29	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

METHOD BLANK: 3239276

Matrix: Water

Associated Lab Samples: 92531096005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	0.31	04/22/21 23:29	
Ethylbenzene	ug/L	ND	1.0	0.30	04/22/21 23:29	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	1.5	04/22/21 23:29	
m&p-Xylene	ug/L	ND	2.0	0.71	04/22/21 23:29	
Methyl-tert-butyl ether	ug/L	ND	1.0	0.42	04/22/21 23:29	
Methylene Chloride	ug/L	ND	5.0	2.0	04/22/21 23:29	
Naphthalene	ug/L	ND	1.0	0.64	04/22/21 23:29	
o-Xylene	ug/L	ND	1.0	0.34	04/22/21 23:29	
p-Isopropyltoluene	ug/L	ND	1.0	0.41	04/22/21 23:29	
Styrene	ug/L	ND	1.0	0.29	04/22/21 23:29	
Tetrachloroethene	ug/L	ND	1.0	0.29	04/22/21 23:29	
Toluene	ug/L	ND	1.0	0.48	04/22/21 23:29	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.40	04/22/21 23:29	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.36	04/22/21 23:29	
Trichloroethene	ug/L	ND	1.0	0.38	04/22/21 23:29	
Trichlorofluoromethane	ug/L	ND	1.0	0.30	04/22/21 23:29	
Vinyl acetate	ug/L	ND	2.0	1.3	04/22/21 23:29	
Vinyl chloride	ug/L	ND	1.0	0.39	04/22/21 23:29	
Xylene (Total)	ug/L	ND	1.0	0.34	04/22/21 23:29	
1,2-Dichloroethane-d4 (S)	%	117	70-130		04/22/21 23:29	
4-Bromofluorobenzene (S)	%	104	70-130		04/22/21 23:29	
Toluene-d8 (S)	%	103	70-130		04/22/21 23:29	

LABORATORY CONTROL SAMPLE: 3239277

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.3	105	70-130	
1,1,1-Trichloroethane	ug/L	50	53.7	107	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	56.9	114	70-130	
1,1,2-Trichloroethane	ug/L	50	52.7	105	70-130	
1,1-Dichloroethane	ug/L	50	58.5	117	70-130	
1,1-Dichloroethene	ug/L	50	59.2	118	70-130	
1,1-Dichloropropene	ug/L	50	56.7	113	70-130	
1,2,3-Trichlorobenzene	ug/L	50	53.7	107	70-130	
1,2,3-Trichloropropane	ug/L	50	57.2	114	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.6	107	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	57.8	116	70-130	
1,2-Dichlorobenzene	ug/L	50	53.3	107	70-130	
1,2-Dichloroethane	ug/L	50	57.1	114	70-130	
1,2-Dichloropropane	ug/L	50	57.0	114	70-130	
1,3-Dichlorobenzene	ug/L	50	54.3	109	70-130	
1,3-Dichloropropane	ug/L	50	57.2	114	70-130	
1,4-Dichlorobenzene	ug/L	50	53.7	107	70-130	
2,2-Dichloropropane	ug/L	50	58.0	116	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3239277

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	100	126	126	70-130	
2-Chlorotoluene	ug/L	50	57.7	115	70-130	
2-Hexanone	ug/L	100	123	123	70-130	
4-Chlorotoluene	ug/L	50	56.5	113	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	119	119	70-130	
Acetone	ug/L	100	121	121	70-130	
Benzene	ug/L	50	53.4	107	70-130	
Bromobenzene	ug/L	50	52.9	106	70-130	
Bromochloromethane	ug/L	50	51.1	102	70-130	
Bromodichloromethane	ug/L	50	52.8	106	70-130	
Bromoform	ug/L	50	51.2	102	70-130	
Bromomethane	ug/L	50	59.4	119	70-130	
Carbon tetrachloride	ug/L	50	48.2	96	70-130	
Chlorobenzene	ug/L	50	52.0	104	70-130	
Chloroethane	ug/L	50	56.9	114	70-130 v1	
Chloroform	ug/L	50	58.7	117	70-130	
Chloromethane	ug/L	50	58.3	117	70-130	
cis-1,2-Dichloroethene	ug/L	50	60.7	121	70-130	
cis-1,3-Dichloropropene	ug/L	50	54.3	109	70-130	
Dibromochloromethane	ug/L	50	52.9	106	70-130	
Dibromomethane	ug/L	50	46.8	94	70-130	
Dichlorodifluoromethane	ug/L	50	48.6	97	70-130	
Diisopropyl ether	ug/L	50	59.9	120	70-130	
Ethylbenzene	ug/L	50	54.4	109	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.2	98	70-130	
m&p-Xylene	ug/L	100	108	108	70-130	
Methyl-tert-butyl ether	ug/L	50	58.9	118	70-130	
Methylene Chloride	ug/L	50	59.3	119	70-130	
Naphthalene	ug/L	50	57.0	114	70-130	
o-Xylene	ug/L	50	51.6	103	70-130	
p-Isopropyltoluene	ug/L	50	54.7	109	70-130	
Styrene	ug/L	50	52.5	105	70-130	
Tetrachloroethene	ug/L	50	46.7	93	70-130	
Toluene	ug/L	50	51.5	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	61.1	122	70-130	
trans-1,3-Dichloropropene	ug/L	50	55.1	110	70-130	
Trichloroethene	ug/L	50	48.7	97	70-130	
Trichlorofluoromethane	ug/L	50	46.4	93	70-130	
Vinyl acetate	ug/L	100	140	140	70-130 L1	
Vinyl chloride	ug/L	50	63.9	128	70-130	
Xylene (Total)	ug/L	150	160	106	70-130	
1,2-Dichloroethane-d4 (S)	%			105	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Parameter	Units	3239278		3239279		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92534013002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	420	468	105	117	73-134	11	30	
1,1,1-Trichloroethane	ug/L	ND	400	400	446	474	111	118	82-143	6	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	410	469	103	117	70-136	13	30	
1,1,2-Trichloroethane	ug/L	ND	400	400	429	459	107	115	70-135	7	30	
1,1-Dichloroethane	ug/L	ND	400	400	452	488	113	122	70-139	8	30	
1,1-Dichloroethene	ug/L	ND	400	400	468	498	117	124	70-154	6	30	
1,1-Dichloropropene	ug/L	ND	400	400	426	455	106	114	70-149	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	400	400	366	436	92	109	70-135	17	30	
1,2,3-Trichloropropane	ug/L	ND	400	400	405	456	101	114	71-137	12	30	
1,2,4-Trichlorobenzene	ug/L	ND	400	400	366	421	91	105	73-140	14	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	439	516	110	129	65-134	16	30	
1,2-Dichlorobenzene	ug/L	ND	400	400	413	460	103	115	70-133	11	30	
1,2-Dichloroethane	ug/L	ND	400	400	410	433	103	108	70-137	5	30	
1,2-Dichloropropane	ug/L	ND	400	400	439	461	110	115	70-140	5	30	
1,3-Dichlorobenzene	ug/L	ND	400	400	389	458	97	115	70-135	16	30	
1,3-Dichloropropane	ug/L	ND	400	400	432	479	108	120	70-143	10	30	
1,4-Dichlorobenzene	ug/L	ND	400	400	394	460	98	115	70-133	16	30	
2,2-Dichloropropane	ug/L	ND	400	400	306	315	76	79	61-148	3	30	
2-Butanone (MEK)	ug/L	ND	800	800	803	869	100	109	60-139	8	30	
2-Chlorotoluene	ug/L	ND	400	400	405	511	101	128	70-144	23	30	
2-Hexanone	ug/L	ND	800	800	818	904	102	113	65-138	10	30	
4-Chlorotoluene	ug/L	ND	400	400	399	484	100	121	70-137	19	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	822	970	103	121	65-135	17	30	
Acetone	ug/L	ND	800	800	920	984	115	123	60-148	7	30	
Benzene	ug/L	2050	400	400	2390	2620	84	142	70-151	9	30	
Bromobenzene	ug/L	ND	400	400	436	527	109	132	70-136	19	30	
Bromochloromethane	ug/L	ND	400	400	448	465	112	116	70-141	4	30	
Bromodichloromethane	ug/L	ND	400	400	428	451	107	113	70-138	5	30	
Bromoform	ug/L	ND	400	400	418	462	105	115	63-130	10	30	
Bromomethane	ug/L	ND	400	400	493	504	123	126	15-152	2	30	
Carbon tetrachloride	ug/L	ND	400	400	429	452	107	113	70-143	5	30	
Chlorobenzene	ug/L	ND	400	400	428	477	107	119	70-138	11	30	
Chloroethane	ug/L	ND	400	400	496	503	124	126	52-163	1	30	
Chloroform	ug/L	ND	400	400	438	457	110	114	70-139	4	30	
Chloromethane	ug/L	ND	400	400	367	393	92	98	41-139	7	30	
cis-1,2-Dichloroethene	ug/L	ND	400	400	446	473	112	118	70-141	6	30	
cis-1,3-Dichloropropene	ug/L	ND	400	400	388	424	97	106	70-137	9	30	
Dibromochloromethane	ug/L	ND	400	400	431	495	108	124	70-134	14	30	
Dibromomethane	ug/L	ND	400	400	424	447	106	112	70-138	5	30	
Dichlorodifluoromethane	ug/L	ND	400	400	287	305	72	76	47-155	6	30 v3	
Diisopropyl ether	ug/L	ND	400	400	424	451	105	112	63-144	6	30	
Ethylbenzene	ug/L	532	400	400	930	1060	100	132	66-153	13	30	
Hexachloro-1,3-butadiene	ug/L	ND	400	400	360	407	90	102	65-149	12	30	
m&p-Xylene	ug/L	443	800	800	1250	1410	101	121	69-152	12	30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3239278		3239279		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92534013002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Methyl-tert-butyl ether	ug/L	144	400	400	536	572	98	107	54-156	7	30		
Methylene Chloride	ug/L	ND	400	400	457	481	114	120	42-159	5	30		
Naphthalene	ug/L	413	400	400	695	840	71	107	61-148	19	30		
o-Xylene	ug/L	35.4	400	400	442	495	102	115	70-148	11	30		
p-Isopropyltoluene	ug/L	ND	400	400	397	466	99	117	70-146	16	30		
Styrene	ug/L	ND	400	400	409	466	102	117	70-135	13	30		
Tetrachloroethene	ug/L	ND	400	400	394	450	98	113	59-143	13	30		
Toluene	ug/L	52.1	400	400	474	535	105	121	59-148	12	30		
trans-1,2-Dichloroethene	ug/L	ND	400	400	431	463	108	116	70-146	7	30		
trans-1,3-Dichloropropene	ug/L	ND	400	400	387	434	97	109	70-135	12	30		
Trichloroethene	ug/L	ND	400	400	413	446	103	111	70-147	8	30		
Trichlorofluoromethane	ug/L	ND	400	400	423	448	106	112	70-148	6	30		
Vinyl acetate	ug/L	ND	800	800	931	983	116	123	49-151	5	30		
Vinyl chloride	ug/L	ND	400	400	376	396	94	99	70-156	5	30		
Xylene (Total)	ug/L	478	1200	1200	1690	1910	101	119	63-158	12	30		
1,2-Dichloroethane-d4 (S)	%						105	102	70-130				
4-Bromofluorobenzene (S)	%						95	93	70-130				
Toluene-d8 (S)	%						98	98	70-130				

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

QC Batch: 615494 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92531096001, 92531096003, 92531096004

METHOD BLANK: 3238936 Matrix: Solid
Associated Lab Samples: 92531096001, 92531096003, 92531096004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	04/22/21 12:27	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	04/22/21 12:27	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	04/22/21 12:27	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	04/22/21 12:27	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	04/22/21 12:27	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	04/22/21 12:27	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	04/22/21 12:27	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	04/22/21 12:27	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	04/22/21 12:27	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	04/22/21 12:27	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	04/22/21 12:27	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	04/22/21 12:27	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	04/22/21 12:27	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	04/22/21 12:27	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	04/22/21 12:27	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	04/22/21 12:27	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	04/22/21 12:27	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	04/22/21 12:27	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	04/22/21 12:27	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	04/22/21 12:27	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	04/22/21 12:27	
2-Butanone (MEK)	ug/kg	ND	100	24.0	04/22/21 12:27	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	04/22/21 12:27	
2-Hexanone	ug/kg	ND	50.0	4.8	04/22/21 12:27	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	04/22/21 12:27	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	04/22/21 12:27	
Acetone	ug/kg	ND	100	32.1	04/22/21 12:27	
Benzene	ug/kg	ND	5.0	2.0	04/22/21 12:27	
Bromobenzene	ug/kg	ND	5.0	1.6	04/22/21 12:27	
Bromochloromethane	ug/kg	ND	5.0	1.5	04/22/21 12:27	
Bromodichloromethane	ug/kg	ND	5.0	1.9	04/22/21 12:27	
Bromoform	ug/kg	ND	5.0	1.8	04/22/21 12:27	
Bromomethane	ug/kg	ND	10.0	7.9	04/22/21 12:27	
Carbon tetrachloride	ug/kg	ND	5.0	1.9	04/22/21 12:27	
Chlorobenzene	ug/kg	ND	5.0	0.96	04/22/21 12:27	
Chloroethane	ug/kg	ND	10.0	3.9	04/22/21 12:27	
Chloroform	ug/kg	ND	5.0	3.0	04/22/21 12:27	
Chloromethane	ug/kg	ND	10.0	4.2	04/22/21 12:27	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	04/22/21 12:27	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	04/22/21 12:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

METHOD BLANK: 3238936

Matrix: Solid

Associated Lab Samples: 92531096001, 92531096003, 92531096004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	04/22/21 12:27	
Dibromomethane	ug/kg	ND	5.0	1.1	04/22/21 12:27	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	04/22/21 12:27	
Diisopropyl ether	ug/kg	ND	5.0	1.4	04/22/21 12:27	
Ethylbenzene	ug/kg	ND	5.0	2.3	04/22/21 12:27	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	04/22/21 12:27	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	04/22/21 12:27	
m&p-Xylene	ug/kg	ND	10.0	3.4	04/22/21 12:27	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	04/22/21 12:27	
Methylene Chloride	ug/kg	ND	20.0	13.7	04/22/21 12:27	
n-Butylbenzene	ug/kg	ND	5.0	2.4	04/22/21 12:27	
n-Propylbenzene	ug/kg	ND	5.0	1.8	04/22/21 12:27	
Naphthalene	ug/kg	ND	5.0	2.6	04/22/21 12:27	
o-Xylene	ug/kg	ND	5.0	2.2	04/22/21 12:27	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	04/22/21 12:27	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	04/22/21 12:27	
Styrene	ug/kg	ND	5.0	1.3	04/22/21 12:27	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	04/22/21 12:27	
Tetrachloroethene	ug/kg	ND	5.0	1.6	04/22/21 12:27	
Toluene	ug/kg	ND	5.0	1.4	04/22/21 12:27	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	04/22/21 12:27	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	04/22/21 12:27	
Trichloroethene	ug/kg	ND	5.0	1.3	04/22/21 12:27	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	04/22/21 12:27	
Vinyl acetate	ug/kg	ND	50.0	3.6	04/22/21 12:27	
Vinyl chloride	ug/kg	ND	10.0	2.5	04/22/21 12:27	
Xylene (Total)	ug/kg	ND	10.0	2.8	04/22/21 12:27	
1,2-Dichloroethane-d4 (S)	%	103	70-130		04/22/21 12:27	
4-Bromofluorobenzene (S)	%	107	69-134		04/22/21 12:27	
Toluene-d8 (S)	%	99	70-130		04/22/21 12:27	

LABORATORY CONTROL SAMPLE: 3238937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1210	97	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1110	89	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1200	96	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1180	94	70-130	
1,1-Dichloroethane	ug/kg	1250	1160	93	70-130	
1,1-Dichloroethene	ug/kg	1250	1150	92	70-130	
1,1-Dichloropropene	ug/kg	1250	1140	91	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1120	89	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1190	95	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1100	88	68-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3238937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1140	92	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1160	93	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1240	99	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1100	88	70-130	
1,2-Dichloroethane	ug/kg	1250	1180	94	63-130	
1,2-Dichloropropane	ug/kg	1250	1220	97	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1160	93	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1070	85	70-130	
1,3-Dichloropropane	ug/kg	1250	1250	100	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1100	88	70-130	
2,2-Dichloropropane	ug/kg	1250	1110	89	66-130	
2-Butanone (MEK)	ug/kg	2500	2450	98	70-130	
2-Chlorotoluene	ug/kg	1250	1170	94	70-130	
2-Hexanone	ug/kg	2500	2610	104	70-130	
4-Chlorotoluene	ug/kg	1250	1140	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2470	99	70-130	
Acetone	ug/kg	2500	2430	97	69-130	
Benzene	ug/kg	1250	1210	97	70-130	
Bromobenzene	ug/kg	1250	1150	92	70-130	
Bromochloromethane	ug/kg	1250	1190	96	70-130	
Bromodichloromethane	ug/kg	1250	1200	96	69-130	
Bromoform	ug/kg	1250	1240	99	70-130	
Bromomethane	ug/kg	1250	1120	90	52-130	
Carbon tetrachloride	ug/kg	1250	1170	94	70-130	
Chlorobenzene	ug/kg	1250	1170	94	70-130	
Chloroethane	ug/kg	1250	1210	97	65-130	
Chloroform	ug/kg	1250	1100	88	70-130	
Chloromethane	ug/kg	1250	1120	90	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1200	96	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1220	98	70-130	
Dibromochloromethane	ug/kg	1250	1260	101	70-130	
Dibromomethane	ug/kg	1250	1190	95	70-130	
Dichlorodifluoromethane	ug/kg	1250	1120	89	45-156	
Diisopropyl ether	ug/kg	1250	1110	89	70-130	
Ethylbenzene	ug/kg	1250	1120	89	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1110	89	66-130	
Isopropylbenzene (Cumene)	ug/kg	1250	1160	93	70-130	
m&p-Xylene	ug/kg	2500	2400	96	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1120	89	70-130	
Methylene Chloride	ug/kg	1250	1180	95	65-130	
n-Butylbenzene	ug/kg	1250	1100	88	67-130	
n-Propylbenzene	ug/kg	1250	1120	90	70-130	
Naphthalene	ug/kg	1250	1120	90	70-130	
o-Xylene	ug/kg	1250	1190	95	70-130	
p-Isopropyltoluene	ug/kg	1250	1120	90	67-130	
sec-Butylbenzene	ug/kg	1250	1080	86	69-130	
Styrene	ug/kg	1250	1250	100	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3238937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	1090	87	67-130	
Tetrachloroethene	ug/kg	1250	1120	90	70-130	
Toluene	ug/kg	1250	1170	93	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1200	96	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1210	97	68-130	
Trichloroethene	ug/kg	1250	1140	91	70-130	
Trichlorofluoromethane	ug/kg	1250	1050	84	70-130	
Vinyl acetate	ug/kg	2500	2650	106	70-130	
Vinyl chloride	ug/kg	1250	1090	87	61-130	
Xylene (Total)	ug/kg	3750	3590	96	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			107	69-134	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3238939 3243822

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92534491002 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/kg	ND	544	544	544	565	660	104	121	70-131	15	30	
1,1,1-Trichloroethane	ug/kg	ND	544	544	544	549	615	101	113	65-133	11	30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	544	544	544	524	601	96	110	66-130	14	30	
1,1,2-Trichloroethane	ug/kg	ND	544	544	544	569	620	105	114	66-133	9	30	
1,1-Dichloroethane	ug/kg	ND	544	544	544	517	571	95	105	65-130	10	30	
1,1-Dichloroethene	ug/kg	ND	544	544	544	538	615	99	113	10-158	13	30	
1,1-Dichloropropene	ug/kg	ND	544	544	544	551	634	101	117	68-133	14	30	
1,2,3-Trichlorobenzene	ug/kg	ND	544	544	544	511	629	94	116	27-138	21	30	
1,2,3-Trichloropropane	ug/kg	ND	544	544	544	515	606	95	111	67-130	16	30	
1,2,4-Trichlorobenzene	ug/kg	ND	544	544	544	482	606	89	111	51-134	23	30	
1,2,4-Trimethylbenzene	ug/kg	ND	544	544	544	537	648	99	119	63-136	19	30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	544	544	544	460	533	85	98	32-130	15	30	
1,2-Dibromoethane (EDB)	ug/kg	ND	544	544	544	557	649	102	119	70-130	15	30	
1,2-Dichlorobenzene	ug/kg	ND	544	544	544	517	630	95	116	69-130	20	30	
1,2-Dichloroethane	ug/kg	ND	544	544	544	548	612	101	112	59-130	11	30	
1,2-Dichloropropane	ug/kg	ND	544	544	544	592	632	109	116	70-130	6	30	
1,3,5-Trimethylbenzene	ug/kg	ND	544	544	544	550	643	101	118	65-137	16	30	
1,3-Dichlorobenzene	ug/kg	ND	544	544	544	497	616	91	113	70-130	21	30	
1,3-Dichloropropane	ug/kg	ND	544	544	544	587	680	108	125	70-130	15	30	
1,4-Dichlorobenzene	ug/kg	ND	544	544	544	517	628	95	115	68-130	19	30	
2,2-Dichloropropane	ug/kg	ND	544	544	544	412	586	76	108	32-130	35	30 R1	
2-Butanone (MEK)	ug/kg	ND	1090	1090	1090	995	1070	92	99	10-136	8	30	
2-Chlorotoluene	ug/kg	ND	544	544	544	555	654	102	120	69-141	16	30	
2-Hexanone	ug/kg	ND	1090	1090	1090	1050	1190	96	109	10-144	12	30	
4-Chlorotoluene	ug/kg	ND	544	544	544	528	649	97	119	70-132	21	30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1090	1090	1090	1070	1150	98	106	25-143	8	30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3238939 3243822												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92534491002 Result	Spike Conc.	Spike Conc.	MS Result							
Acetone	ug/kg	211	1090	1090	1080	1050	80	78	10-130	2	30	
Benzene	ug/kg	ND	544	544	587	652	108	120	67-130	10	30	
Bromobenzene	ug/kg	ND	544	544	535	638	98	117	70-130	18	30	
Bromochloromethane	ug/kg	ND	544	544	526	576	97	106	69-134	9	30	
Bromodichloromethane	ug/kg	ND	544	544	556	577	102	106	64-130	4	30	
Bromoform	ug/kg	ND	544	544	521	606	96	112	62-130	15	30	
Bromomethane	ug/kg	ND	544	544	442	461	81	85	20-176	4	30	
Carbon tetrachloride	ug/kg	ND	544	544	561	616	103	113	65-140	9	30	
Chlorobenzene	ug/kg	ND	544	544	557	647	102	119	70-130	15	30	
Chloroethane	ug/kg	ND	544	544	265	270	49	50	10-130	2	30	
Chloroform	ug/kg	ND	544	544	497	543	91	100	63-130	9	30	
Chloromethane	ug/kg	ND	544	544	600	664	110	122	58-130	10	30	
cis-1,2-Dichloroethene	ug/kg	ND	544	544	545	585	100	108	66-130	7	30	
cis-1,3-Dichloropropene	ug/kg	ND	544	544	548	632	101	116	67-130	14	30	
Dibromochloromethane	ug/kg	ND	544	544	550	657	101	121	67-130	18	30	
Dibromomethane	ug/kg	ND	544	544	538	610	99	112	63-131	13	30	
Dichlorodifluoromethane	ug/kg	ND	544	544	580	742	107	136	44-180	24	30	
Diisopropyl ether	ug/kg	ND	544	544	508	550	93	101	63-130	8	30	
Ethylbenzene	ug/kg	ND	544	544	547	630	101	116	66-130	14	30	
Hexachloro-1,3-butadiene	ug/kg	ND	544	544	515	693	95	128	64-150	30	30	
Isopropylbenzene (Cumene)	ug/kg	ND	544	544	581	667	107	123	69-135	14	30	
m&p-Xylene	ug/kg	ND	1090	1090	1160	1340	107	123	60-133	14	30	
Methyl-tert-butyl ether	ug/kg	ND	544	544	502	565	92	104	65-130	12	30	
Methylene Chloride	ug/kg	ND	544	544	551	615	101	113	61-130	11	30	
n-Butylbenzene	ug/kg	ND	544	544	510	654	94	120	65-140	25	30	
n-Propylbenzene	ug/kg	ND	544	544	537	648	99	119	67-140	19	30	
Naphthalene	ug/kg	ND	544	544	505	594	93	109	15-145	16	30	
o-Xylene	ug/kg	ND	544	544	577	656	106	121	66-133	13	30	
p-Isopropyltoluene	ug/kg	ND	544	544	532	667	98	123	56-147	23	30	
sec-Butylbenzene	ug/kg	ND	544	544	534	659	98	121	65-139	21	30	
Styrene	ug/kg	ND	544	544	579	667	106	123	70-132	14	30	
tert-Butylbenzene	ug/kg	ND	544	544	531	634	98	117	62-135	18	30	
Tetrachloroethene	ug/kg	ND	544	544	542	641	100	118	70-135	17	30	
Toluene	ug/kg	3.5J	544	544	587	641	107	117	67-130	9	30	
trans-1,2-Dichloroethene	ug/kg	ND	544	544	548	610	101	112	69-130	11	30	
trans-1,3-Dichloropropene	ug/kg	ND	544	544	543	620	100	114	62-130	13	30	
Trichloroethene	ug/kg	ND	544	544	563	637	104	117	70-135	12	30	
Trichlorofluoromethane	ug/kg	ND	544	544	230	271	42	50	10-130	17	30	
Vinyl acetate	ug/kg	ND	1090	1090	1120	1310	103	120	53-130	15	30	
Vinyl chloride	ug/kg	ND	544	544	562	605	103	111	61-148	7	30	
Xylene (Total)	ug/kg	ND	1630	1630	1740	1990	106	122	63-132	14	30	
1,2-Dichloroethane-d4 (S)	%						116	118	70-130			
4-Bromofluorobenzene (S)	%						105	105	69-134			
Toluene-d8 (S)	%						100	99	70-130			

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

QC Batch: 616269 Analysis Method: EPA 8260D
QC Batch Method: EPA 5035A/5030B Analysis Description: 8260D 5035A 5030B SC
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096002

METHOD BLANK: 3243352 Matrix: Solid

Associated Lab Samples: 92531096002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	1.9	04/27/21 01:16	
1,1,1-Trichloroethane	ug/kg	ND	5.0	2.6	04/27/21 01:16	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	1.3	04/27/21 01:16	
1,1,2-Trichloroethane	ug/kg	ND	5.0	1.7	04/27/21 01:16	
1,1-Dichloroethane	ug/kg	ND	5.0	2.1	04/27/21 01:16	
1,1-Dichloroethene	ug/kg	ND	5.0	2.1	04/27/21 01:16	
1,1-Dichloropropene	ug/kg	ND	5.0	2.4	04/27/21 01:16	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	4.0	04/27/21 01:16	
1,2,3-Trichloropropane	ug/kg	ND	5.0	2.5	04/27/21 01:16	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	4.2	04/27/21 01:16	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	1.4	04/27/21 01:16	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	1.9	04/27/21 01:16	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	2.2	04/27/21 01:16	
1,2-Dichlorobenzene	ug/kg	ND	5.0	1.8	04/27/21 01:16	
1,2-Dichloroethane	ug/kg	ND	5.0	3.3	04/27/21 01:16	
1,2-Dichloropropane	ug/kg	ND	5.0	1.5	04/27/21 01:16	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	1.7	04/27/21 01:16	
1,3-Dichlorobenzene	ug/kg	ND	5.0	1.6	04/27/21 01:16	
1,3-Dichloropropane	ug/kg	ND	5.0	1.6	04/27/21 01:16	
1,4-Dichlorobenzene	ug/kg	ND	5.0	1.3	04/27/21 01:16	
2,2-Dichloropropane	ug/kg	ND	5.0	1.6	04/27/21 01:16	
2-Butanone (MEK)	ug/kg	ND	100	24.0	04/27/21 01:16	
2-Chlorotoluene	ug/kg	ND	5.0	1.8	04/27/21 01:16	
2-Hexanone	ug/kg	ND	50.0	4.8	04/27/21 01:16	
4-Chlorotoluene	ug/kg	ND	5.0	0.88	04/27/21 01:16	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	4.8	04/27/21 01:16	
Acetone	ug/kg	ND	100	32.1	04/27/21 01:16	
Benzene	ug/kg	ND	5.0	2.0	04/27/21 01:16	
Bromobenzene	ug/kg	ND	5.0	1.6	04/27/21 01:16	
Bromochloromethane	ug/kg	ND	5.0	1.5	04/27/21 01:16	
Bromodichloromethane	ug/kg	ND	5.0	1.9	04/27/21 01:16	
Bromoform	ug/kg	ND	5.0	1.8	04/27/21 01:16	
Bromomethane	ug/kg	ND	10.0	7.9	04/27/21 01:16	
Carbon tetrachloride	ug/kg	ND	5.0	1.9	04/27/21 01:16	
Chlorobenzene	ug/kg	ND	5.0	0.96	04/27/21 01:16	
Chloroethane	ug/kg	ND	10.0	3.9	04/27/21 01:16	
Chloroform	ug/kg	ND	5.0	3.0	04/27/21 01:16	
Chloromethane	ug/kg	ND	10.0	4.2	04/27/21 01:16	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	1.7	04/27/21 01:16	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	1.4	04/27/21 01:16	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

METHOD BLANK: 3243352

Matrix: Solid

Associated Lab Samples: 92531096002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromochloromethane	ug/kg	ND	5.0	2.8	04/27/21 01:16	
Dibromomethane	ug/kg	ND	5.0	1.1	04/27/21 01:16	
Dichlorodifluoromethane	ug/kg	ND	10.0	2.2	04/27/21 01:16	
Diisopropyl ether	ug/kg	ND	5.0	1.4	04/27/21 01:16	
Ethylbenzene	ug/kg	ND	5.0	2.3	04/27/21 01:16	
Hexachloro-1,3-butadiene	ug/kg	ND	10.0	8.2	04/27/21 01:16	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	1.7	04/27/21 01:16	
m&p-Xylene	ug/kg	ND	10.0	3.4	04/27/21 01:16	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.9	04/27/21 01:16	
Methylene Chloride	ug/kg	ND	20.0	13.7	04/27/21 01:16	
n-Butylbenzene	ug/kg	ND	5.0	2.4	04/27/21 01:16	
n-Propylbenzene	ug/kg	ND	5.0	1.8	04/27/21 01:16	
Naphthalene	ug/kg	ND	5.0	2.6	04/27/21 01:16	
o-Xylene	ug/kg	ND	5.0	2.2	04/27/21 01:16	
p-Isopropyltoluene	ug/kg	ND	5.0	2.5	04/27/21 01:16	
sec-Butylbenzene	ug/kg	ND	5.0	2.2	04/27/21 01:16	
Styrene	ug/kg	ND	5.0	1.3	04/27/21 01:16	
tert-Butylbenzene	ug/kg	ND	5.0	1.8	04/27/21 01:16	
Tetrachloroethene	ug/kg	ND	5.0	1.6	04/27/21 01:16	
Toluene	ug/kg	ND	5.0	1.4	04/27/21 01:16	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	1.8	04/27/21 01:16	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	1.7	04/27/21 01:16	
Trichloroethene	ug/kg	ND	5.0	1.3	04/27/21 01:16	
Trichlorofluoromethane	ug/kg	ND	5.0	2.8	04/27/21 01:16	
Vinyl acetate	ug/kg	ND	50.0	3.6	04/27/21 01:16	
Vinyl chloride	ug/kg	ND	10.0	2.5	04/27/21 01:16	
Xylene (Total)	ug/kg	ND	10.0	2.8	04/27/21 01:16	
1,2-Dichloroethane-d4 (S)	%	106	70-130		04/27/21 01:16	
4-Bromofluorobenzene (S)	%	105	69-134		04/27/21 01:16	
Toluene-d8 (S)	%	98	70-130		04/27/21 01:16	

LABORATORY CONTROL SAMPLE: 3243353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1250	1190	95	70-130	
1,1,1-Trichloroethane	ug/kg	1250	1130	90	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	1250	1180	94	70-130	
1,1,2-Trichloroethane	ug/kg	1250	1160	93	70-130	
1,1-Dichloroethane	ug/kg	1250	1150	92	70-130	
1,1-Dichloroethene	ug/kg	1250	1160	93	70-130	
1,1-Dichloropropene	ug/kg	1250	1120	89	70-130	
1,2,3-Trichlorobenzene	ug/kg	1250	1150	92	65-130	
1,2,3-Trichloropropane	ug/kg	1250	1200	96	70-130	
1,2,4-Trichlorobenzene	ug/kg	1250	1090	87	68-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3243353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1250	1130	90	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	1250	1200	96	70-130	
1,2-Dibromoethane (EDB)	ug/kg	1250	1240	100	70-130	
1,2-Dichlorobenzene	ug/kg	1250	1130	91	70-130	
1,2-Dichloroethane	ug/kg	1250	1180	94	63-130	
1,2-Dichloropropane	ug/kg	1250	1160	93	70-130	
1,3,5-Trimethylbenzene	ug/kg	1250	1130	90	70-130	
1,3-Dichlorobenzene	ug/kg	1250	1110	89	70-130	
1,3-Dichloropropane	ug/kg	1250	1260	101	70-130	
1,4-Dichlorobenzene	ug/kg	1250	1080	86	70-130	
2,2-Dichloropropane	ug/kg	1250	1040	83	66-130	
2-Butanone (MEK)	ug/kg	2500	2490	100	70-130	
2-Chlorotoluene	ug/kg	1250	1180	94	70-130	
2-Hexanone	ug/kg	2500	2650	106	70-130	
4-Chlorotoluene	ug/kg	1250	1150	92	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	2500	2460	99	70-130	
Acetone	ug/kg	2500	2470	99	69-130	
Benzene	ug/kg	1250	1160	93	70-130	
Bromobenzene	ug/kg	1250	1160	93	70-130	
Bromochloromethane	ug/kg	1250	1180	95	70-130	
Bromodichloromethane	ug/kg	1250	1070	86	69-130	
Bromoform	ug/kg	1250	1230	99	70-130	
Bromomethane	ug/kg	1250	1000	80	52-130	
Carbon tetrachloride	ug/kg	1250	1120	90	70-130	
Chlorobenzene	ug/kg	1250	1150	92	70-130	
Chloroethane	ug/kg	1250	1030	83	65-130	
Chloroform	ug/kg	1250	1050	84	70-130	
Chloromethane	ug/kg	1250	1080	86	55-130	
cis-1,2-Dichloroethene	ug/kg	1250	1150	92	70-130	
cis-1,3-Dichloropropene	ug/kg	1250	1170	93	70-130	
Dibromochloromethane	ug/kg	1250	1280	102	70-130	
Dibromomethane	ug/kg	1250	1200	96	70-130	
Dichlorodifluoromethane	ug/kg	1250	1220	98	45-156	
Diisopropyl ether	ug/kg	1250	1100	88	70-130	
Ethylbenzene	ug/kg	1250	1070	85	70-130	
Hexachloro-1,3-butadiene	ug/kg	1250	1080	87	66-130	
Isopropylbenzene (Cumene)	ug/kg	1250	1110	89	70-130	
m&p-Xylene	ug/kg	2500	2300	92	70-130	
Methyl-tert-butyl ether	ug/kg	1250	1130	90	70-130	
Methylene Chloride	ug/kg	1250	1200	96	65-130	
n-Butylbenzene	ug/kg	1250	1060	85	67-130	
n-Propylbenzene	ug/kg	1250	1090	87	70-130	
Naphthalene	ug/kg	1250	1180	95	70-130	
o-Xylene	ug/kg	1250	1140	91	70-130	
p-Isopropyltoluene	ug/kg	1250	1120	89	67-130	
sec-Butylbenzene	ug/kg	1250	1070	86	69-130	
Styrene	ug/kg	1250	1200	96	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3243353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/kg	1250	1100	88	67-130	
Tetrachloroethene	ug/kg	1250	1110	89	70-130	
Toluene	ug/kg	1250	1130	90	70-130	
trans-1,2-Dichloroethene	ug/kg	1250	1150	92	70-130	
trans-1,3-Dichloropropene	ug/kg	1250	1160	93	68-130	
Trichloroethene	ug/kg	1250	1120	89	70-130	
Trichlorofluoromethane	ug/kg	1250	1050	84	70-130	
Vinyl acetate	ug/kg	2500	2670	107	70-130	
Vinyl chloride	ug/kg	1250	1030	82	61-130	
Xylene (Total)	ug/kg	3750	3440	92	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			104	69-134	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 3243355

Parameter	Units	92535044005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	825	785	95	70-131	
1,1,1-Trichloroethane	ug/kg	ND	825	735	89	65-133	
1,1,2,2-Tetrachloroethane	ug/kg	ND	825	716	87	66-130	
1,1,2-Trichloroethane	ug/kg	ND	825	751	91	66-133	
1,1-Dichloroethane	ug/kg	ND	825	717	87	65-130	
1,1-Dichloroethene	ug/kg	ND	825	737	89	10-158	
1,1-Dichloropropene	ug/kg	ND	825	726	88	68-133	
1,2,3-Trichlorobenzene	ug/kg	ND	825	732	89	27-138	
1,2,3-Trichloropropane	ug/kg	ND	825	706	86	67-130	
1,2,4-Trichlorobenzene	ug/kg	ND	825	688	83	51-134	
1,2,4-Trimethylbenzene	ug/kg	ND	825	720	87	63-136	
1,2-Dibromo-3-chloropropane	ug/kg	ND	825	662	80	32-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	825	777	94	70-130	
1,2-Dichlorobenzene	ug/kg	ND	825	731	89	69-130	
1,2-Dichloroethane	ug/kg	ND	825	749	91	59-130	
1,2-Dichloropropane	ug/kg	ND	825	780	95	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	825	734	89	65-137	
1,3-Dichlorobenzene	ug/kg	ND	825	706	86	70-130	
1,3-Dichloropropane	ug/kg	ND	825	819	99	70-130	
1,4-Dichlorobenzene	ug/kg	ND	825	702	85	68-130	
2,2-Dichloropropane	ug/kg	ND	825	570	69	32-130	
2-Butanone (MEK)	ug/kg	ND	1650	1340	81	10-136	
2-Chlorotoluene	ug/kg	ND	825	761	92	69-141	
2-Hexanone	ug/kg	ND	1650	1410	86	10-144	
4-Chlorotoluene	ug/kg	ND	825	726	88	70-132	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1650	1380	84	25-143	
Acetone	ug/kg	ND	1650	1230	75	10-130	
Benzene	ug/kg	ND	825	783	95	67-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

MATRIX SPIKE SAMPLE:	3243355	92535044005	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromobenzene	ug/kg	ND	825	732	89	70-130	
Bromochloromethane	ug/kg	ND	825	701	85	69-134	
Bromodichloromethane	ug/kg	ND	825	679	82	64-130	
Bromoform	ug/kg	ND	825	704	85	62-130	
Bromomethane	ug/kg	ND	825	517	63	20-176	
Carbon tetrachloride	ug/kg	ND	825	722	88	65-140	
Chlorobenzene	ug/kg	ND	825	762	92	70-130	
Chloroethane	ug/kg	ND	825	336	41	10-130	
Chloroform	ug/kg	ND	825	677	82	63-130	
Chloromethane	ug/kg	ND	825	801	97	58-130	
cis-1,2-Dichloroethene	ug/kg	ND	825	724	88	66-130	
cis-1,3-Dichloropropene	ug/kg	ND	825	727	88	67-130	
Dibromochloromethane	ug/kg	ND	825	791	96	67-130	
Dibromomethane	ug/kg	ND	825	750	91	63-131	
Dichlorodifluoromethane	ug/kg	ND	825	819	99	44-180	
Diisopropyl ether	ug/kg	ND	825	664	81	63-130	
Ethylbenzene	ug/kg	ND	825	726	88	66-130	
Hexachloro-1,3-butadiene	ug/kg	ND	825	693	84	64-150	
Isopropylbenzene (Cumene)	ug/kg	ND	825	747	91	69-135	
m&p-Xylene	ug/kg	ND	1650	1530	93	60-133	
Methyl-tert-butyl ether	ug/kg	ND	825	671	81	65-130	
Methylene Chloride	ug/kg	ND	825	737	89	61-130	
n-Butylbenzene	ug/kg	ND	825	658	80	65-140	
n-Propylbenzene	ug/kg	ND	825	719	87	67-140	
Naphthalene	ug/kg	ND	825	707	86	15-145	
o-Xylene	ug/kg	ND	825	766	93	66-133	
p-Isopropyltoluene	ug/kg	ND	825	718	87	56-147	
sec-Butylbenzene	ug/kg	ND	825	713	87	65-139	
Styrene	ug/kg	ND	825	767	93	70-132	
tert-Butylbenzene	ug/kg	ND	825	731	89	62-135	
Tetrachloroethene	ug/kg	ND	825	698	85	70-135	
Toluene	ug/kg	10.6	825	759	91	67-130	
trans-1,2-Dichloroethene	ug/kg	ND	825	717	87	69-130	
trans-1,3-Dichloropropene	ug/kg	ND	825	713	86	62-130	
Trichloroethene	ug/kg	ND	825	752	91	70-135	
Trichlorofluoromethane	ug/kg	ND	825	321	39	10-130	
Vinyl acetate	ug/kg	ND	1650	1540	93	53-130	
Vinyl chloride	ug/kg	ND	825	732	89	61-148	
Xylene (Total)	ug/kg	ND	2470	2290	93	63-132	
1,2-Dichloroethane-d4 (S)	%				115	70-130	
4-Bromofluorobenzene (S)	%				105	69-134	
Toluene-d8 (S)	%				99	70-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

SAMPLE DUPLICATE: 3243354

Parameter	Units	92535044004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
2-Hexanone	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Diisopropyl ether	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

SAMPLE DUPLICATE: 3243354

Parameter	Units	92535044004 Result	Dup Result	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	ND		30	
o-Xylene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Toluene	ug/kg	19.8	19.5	2	30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl acetate	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	104	101			
4-Bromofluorobenzene (S)	%	105	105			
Toluene-d8 (S)	%	100	99			

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

QC Batch: 616001	Analysis Method: EPA 8270E
QC Batch Method: EPA 3546	Analysis Description: 8270E MSSV PAH by SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096001, 92531096003, 92531096004

METHOD BLANK: 3241818 Matrix: Solid

Associated Lab Samples: 92531096001, 92531096003, 92531096004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzo(a)pyrene	ug/kg	ND	10.0	1.0	04/25/21 10:53	
2-Fluorobiphenyl (S)	%	55	31-130		04/25/21 10:53	
Nitrobenzene-d5 (S)	%	56	32-130		04/25/21 10:53	
Terphenyl-d14 (S)	%	53	24-130		04/25/21 10:53	

LABORATORY CONTROL SAMPLE: 3241819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	ug/kg	33.2	26.5	80	44-130	
2-Fluorobiphenyl (S)	%			75	31-130	
Nitrobenzene-d5 (S)	%			76	32-130	
Terphenyl-d14 (S)	%			72	24-130	

MATRIX SPIKE SAMPLE: 3241820

Parameter	Units	92531096001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	ug/kg	10.4J	39.1	30.9	52	10-130	H3
2-Fluorobiphenyl (S)	%				69	31-130	
Nitrobenzene-d5 (S)	%				63	32-130	
Terphenyl-d14 (S)	%				51	24-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

QC Batch: 616170	Analysis Method: EPA 8270E
QC Batch Method: EPA 3546	Analysis Description: 8270E MSSV PAH by SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096002

METHOD BLANK: 3242661 Matrix: Solid
Associated Lab Samples: 92531096002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzo(a)pyrene	ug/kg	ND	9.8	1.0	04/26/21 16:32	
2-Fluorobiphenyl (S)	%	59	31-130		04/26/21 16:32	
Nitrobenzene-d5 (S)	%	57	32-130		04/26/21 16:32	
Terphenyl-d14 (S)	%	55	24-130		04/26/21 16:32	

LABORATORY CONTROL SAMPLE & LCSD: 3242662		3242663									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Benzo(a)pyrene	ug/kg	32.8	25.0	23.3	76	71	44-130	7	30		
2-Fluorobiphenyl (S)	%				88	82	31-130				
Nitrobenzene-d5 (S)	%				87	80	32-130				
Terphenyl-d14 (S)	%				78	74	24-130				

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

QC Batch:	615749	Analysis Method:	EPA 8270E
QC Batch Method:	EPA 3546	Analysis Description:	8270E Solid MSSV Microwave
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096001, 92531096002, 92531096003, 92531096004

METHOD BLANK: 3240199 Matrix: Solid
Associated Lab Samples: 92531096001, 92531096002, 92531096003, 92531096004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	327	115	04/26/21 07:19	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	327	155	04/26/21 07:19	
2,4,5-Trichlorophenol	ug/kg	ND	327	150	04/26/21 07:19	
2,4,6-Trichlorophenol	ug/kg	ND	327	135	04/26/21 07:19	
2,4-Dichlorophenol	ug/kg	ND	327	128	04/26/21 07:19	
2,4-Dimethylphenol	ug/kg	ND	327	136	04/26/21 07:19	
2,4-Dinitrophenol	ug/kg	ND	1630	1010	04/26/21 07:19	
2,4-Dinitrotoluene	ug/kg	ND	327	126	04/26/21 07:19	
2,6-Dinitrotoluene	ug/kg	ND	327	120	04/26/21 07:19	
2-Chloronaphthalene	ug/kg	ND	327	130	04/26/21 07:19	
2-Chlorophenol	ug/kg	ND	327	123	04/26/21 07:19	
2-Methylnaphthalene	ug/kg	ND	327	131	04/26/21 07:19	
2-Methylphenol(o-Cresol)	ug/kg	ND	327	134	04/26/21 07:19	
2-Nitroaniline	ug/kg	ND	1630	267	04/26/21 07:19	
2-Nitrophenol	ug/kg	ND	327	142	04/26/21 07:19	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	327	132	04/26/21 07:19	
3,3'-Dichlorobenzidine	ug/kg	ND	653	221	04/26/21 07:19	IL
3-Nitroaniline	ug/kg	ND	1630	256	04/26/21 07:19	
4,6-Dinitro-2-methylphenol	ug/kg	ND	653	305	04/26/21 07:19	
4-Bromophenylphenyl ether	ug/kg	ND	327	126	04/26/21 07:19	
4-Chloro-3-methylphenol	ug/kg	ND	653	230	04/26/21 07:19	
4-Chloroaniline	ug/kg	ND	653	256	04/26/21 07:19	
4-Chlorophenylphenyl ether	ug/kg	ND	327	122	04/26/21 07:19	
4-Nitroaniline	ug/kg	ND	653	249	04/26/21 07:19	
4-Nitrophenol	ug/kg	ND	1630	632	04/26/21 07:19	
Acenaphthene	ug/kg	ND	327	115	04/26/21 07:19	
Acenaphthylene	ug/kg	ND	327	115	04/26/21 07:19	
Aniline	ug/kg	ND	327	128	04/26/21 07:19	
Anthracene	ug/kg	ND	327	107	04/26/21 07:19	
Benzo(a)anthracene	ug/kg	ND	327	109	04/26/21 07:19	
Benzo(b)fluoranthene	ug/kg	ND	327	109	04/26/21 07:19	
Benzo(g,h,i)perylene	ug/kg	ND	327	127	04/26/21 07:19	
Benzo(k)fluoranthene	ug/kg	ND	327	115	04/26/21 07:19	
Benzoic Acid	ug/kg	ND	1630	702	04/26/21 07:19	
Benzyl alcohol	ug/kg	ND	653	248	04/26/21 07:19	
bis(2-Chloroethoxy)methane	ug/kg	ND	327	136	04/26/21 07:19	
bis(2-Chloroethyl) ether	ug/kg	ND	327	123	04/26/21 07:19	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	327	127	04/26/21 07:19	
Butylbenzylphthalate	ug/kg	ND	327	138	04/26/21 07:19	
Chrysene	ug/kg	ND	327	119	04/26/21 07:19	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

METHOD BLANK: 3240199 Matrix: Solid
Associated Lab Samples: 92531096001, 92531096002, 92531096003, 92531096004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Di-n-butylphthalate	ug/kg	ND	327	110	04/26/21 07:19	
Di-n-octylphthalate	ug/kg	ND	327	129	04/26/21 07:19	
Dibenz(a,h)anthracene	ug/kg	ND	327	126	04/26/21 07:19	
Dibenzofuran	ug/kg	ND	327	118	04/26/21 07:19	
Diethylphthalate	ug/kg	ND	327	120	04/26/21 07:19	
Dimethylphthalate	ug/kg	ND	327	119	04/26/21 07:19	
Fluoranthene	ug/kg	ND	327	112	04/26/21 07:19	
Fluorene	ug/kg	ND	327	115	04/26/21 07:19	
Hexachlorobenzene	ug/kg	ND	327	128	04/26/21 07:19	
Hexachlorocyclopentadiene	ug/kg	ND	327	187	04/26/21 07:19	
Hexachloroethane	ug/kg	ND	327	125	04/26/21 07:19	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	327	129	04/26/21 07:19	
Isophorone	ug/kg	ND	327	146	04/26/21 07:19	
N-Nitroso-di-n-propylamine	ug/kg	ND	327	123	04/26/21 07:19	
N-Nitrosodimethylamine	ug/kg	ND	327	110	04/26/21 07:19	
N-Nitrosodiphenylamine	ug/kg	ND	327	116	04/26/21 07:19	
Nitrobenzene	ug/kg	ND	327	151	04/26/21 07:19	
Pentachlorophenol	ug/kg	ND	653	320	04/26/21 07:19	
Phenanthrene	ug/kg	ND	327	107	04/26/21 07:19	
Phenol	ug/kg	ND	327	146	04/26/21 07:19	
Pyrene	ug/kg	ND	327	133	04/26/21 07:19	
Pyridine	ug/kg	ND	327	103	04/26/21 07:19	
2,4,6-Tribromophenol (S)	%	74	18-130		04/26/21 07:19	
2-Fluorobiphenyl (S)	%	69	19-130		04/26/21 07:19	
2-Fluorophenol (S)	%	67	18-130		04/26/21 07:19	
Nitrobenzene-d5 (S)	%	70	21-130		04/26/21 07:19	
Phenol-d6 (S)	%	68	18-130		04/26/21 07:19	
Terphenyl-d14 (S)	%	69	15-130		04/26/21 07:19	

LABORATORY CONTROL SAMPLE: 3240200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1640	1350	82	54-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	1640	1340	81	38-130	
2,4,5-Trichlorophenol	ug/kg	1640	1410	86	49-130	
2,4,6-Trichlorophenol	ug/kg	1640	1370	83	50-130	
2,4-Dichlorophenol	ug/kg	1640	1380	84	51-130	
2,4-Dimethylphenol	ug/kg	1640	1390	85	53-130	
2,4-Dinitrophenol	ug/kg	8220	7110	86	39-130	
2,4-Dinitrotoluene	ug/kg	1640	1310	79	53-130	
2,6-Dinitrotoluene	ug/kg	1640	1310	79	55-130	
2-Chloronaphthalene	ug/kg	1640	1290	79	48-130	
2-Chlorophenol	ug/kg	1640	1310	79	54-130	
2-Methylnaphthalene	ug/kg	1640	1350	82	57-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3240200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylphenol(o-Cresol)	ug/kg	1640	1340	81	50-130	
2-Nitroaniline	ug/kg	3290	2890	88	49-130	
2-Nitrophenol	ug/kg	1640	1400	85	50-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	1640	1340	81	50-130	
3,3'-Dichlorobenzidine	ug/kg	3290	2540	77	47-130	IL
3-Nitroaniline	ug/kg	3290	2770	84	45-130	
4,6-Dinitro-2-methylphenol	ug/kg	3290	3170	96	50-142	
4-Bromophenylphenyl ether	ug/kg	1640	1450	88	55-130	
4-Chloro-3-methylphenol	ug/kg	3290	2750	84	52-130	
4-Chloroaniline	ug/kg	3290	2540	77	49-130	
4-Chlorophenylphenyl ether	ug/kg	1640	1360	83	53-130	
4-Nitroaniline	ug/kg	3290	2550	78	51-130	
4-Nitrophenol	ug/kg	8220	7020	85	40-130	
Acenaphthene	ug/kg	1640	1390	84	56-130	
Acenaphthylene	ug/kg	1640	1400	85	58-130	
Aniline	ug/kg	1640	1190	72	44-130	
Anthracene	ug/kg	1640	1400	85	60-130	
Benzo(a)anthracene	ug/kg	1640	1450	88	59-130	
Benzo(b)fluoranthene	ug/kg	1640	1460	89	54-130	
Benzo(g,h,i)perylene	ug/kg	1640	1470	89	59-130	
Benzo(k)fluoranthene	ug/kg	1640	1460	89	54-130	
Benzoic Acid	ug/kg	8220	5600	68	19-130	
Benzyl alcohol	ug/kg	3290	2620	80	50-130	
bis(2-Chloroethoxy)methane	ug/kg	1640	1340	82	55-130	
bis(2-Chloroethyl) ether	ug/kg	1640	1360	83	53-130	
bis(2-Ethylhexyl)phthalate	ug/kg	1640	1440	88	58-130	
Butylbenzylphthalate	ug/kg	1640	1490	90	46-138	
Chrysene	ug/kg	1640	1450	88	57-130	
Di-n-butylphthalate	ug/kg	1640	1400	85	57-130	
Di-n-octylphthalate	ug/kg	1640	1420	86	57-130	
Dibenz(a,h)anthracene	ug/kg	1640	1440	87	60-130	
Dibenzofuran	ug/kg	1640	1320	80	54-130	
Diethylphthalate	ug/kg	1640	1350	82	55-130	
Dimethylphthalate	ug/kg	1640	1360	83	57-130	
Fluoranthene	ug/kg	1640	1380	84	57-130	
Fluorene	ug/kg	1640	1370	83	56-130	
Hexachlorobenzene	ug/kg	1640	1380	84	53-130	
Hexachlorocyclopentadiene	ug/kg	1640	1260	77	23-130	
Hexachloroethane	ug/kg	1640	1280	78	48-130	
Indeno(1,2,3-cd)pyrene	ug/kg	1640	1490	91	61-130	
Isophorone	ug/kg	1640	1360	82	49-130	
N-Nitroso-di-n-propylamine	ug/kg	1640	1300	79	52-130	
N-Nitrosodimethylamine	ug/kg	1640	1350	82	45-130	
N-Nitrosodiphenylamine	ug/kg	1640	1440	87	56-130	
Nitrobenzene	ug/kg	1640	1330	81	50-130	
Pentachlorophenol	ug/kg	3290	2980	91	33-130	
Phenanthrene	ug/kg	1640	1430	87	60-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

LABORATORY CONTROL SAMPLE: 3240200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol	ug/kg	1640	1310	79	54-130	
Pyrene	ug/kg	1640	1520	92	61-130	
Pyridine	ug/kg	1640	1030	63	35-130	
2,4,6-Tribromophenol (S)	%			92	18-130	
2-Fluorobiphenyl (S)	%			81	19-130	
2-Fluorophenol (S)	%			78	18-130	
Nitrobenzene-d5 (S)	%			81	21-130	
Phenol-d6 (S)	%			78	18-130	
Terphenyl-d14 (S)	%			78	15-130	

MATRIX SPIKE SAMPLE: 3240201

Parameter	Units	92534135002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	ND	2160	1690	78	30-130	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	2160	1680	77	30-130	
2,4,5-Trichlorophenol	ug/kg	ND	2160	1790	83	26-130	
2,4,6-Trichlorophenol	ug/kg	ND	2160	1730	80	23-130	
2,4-Dichlorophenol	ug/kg	ND	2160	1700	79	29-130	
2,4-Dimethylphenol	ug/kg	ND	2160	1740	80	13-130	
2,4-Dinitrophenol	ug/kg	ND	10800	4430	41	10-131	
2,4-Dinitrotoluene	ug/kg	ND	2160	1670	77	28-130	
2,6-Dinitrotoluene	ug/kg	ND	2160	1670	77	36-130	
2-Chloronaphthalene	ug/kg	ND	2160	1710	79	27-130	
2-Chlorophenol	ug/kg	ND	2160	1650	76	29-130	
2-Methylnaphthalene	ug/kg	ND	2160	1700	78	29-130	
2-Methylphenol(o-Cresol)	ug/kg	ND	2160	1640	76	20-130	
2-Nitroaniline	ug/kg	ND	4340	3660	84	29-130	
2-Nitrophenol	ug/kg	ND	2160	1760	81	26-130	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	2160	1600	74	10-176	
3,3'-Dichlorobenzidine	ug/kg	ND	4340	3370	78	15-130 IL	
3-Nitroaniline	ug/kg	ND	4340	3530	81	28-130	
4,6-Dinitro-2-methylphenol	ug/kg	ND	4340	3790	87	15-132	
4-Bromophenylphenyl ether	ug/kg	ND	2160	1820	84	35-130	
4-Chloro-3-methylphenol	ug/kg	ND	4340	3310	76	30-130	
4-Chloroaniline	ug/kg	ND	4340	3220	74	28-130	
4-Chlorophenylphenyl ether	ug/kg	ND	2160	1700	79	32-130	
4-Nitroaniline	ug/kg	ND	4340	3330	77	30-130	
4-Nitrophenol	ug/kg	ND	10800	8520	79	17-130	
Acenaphthene	ug/kg	ND	2160	1790	82	29-130	
Acenaphthylene	ug/kg	ND	2160	1790	83	31-130	
Aniline	ug/kg	ND	2160	1540	71	10-130	
Anthracene	ug/kg	ND	2160	1780	82	33-130	
Benzo(a)anthracene	ug/kg	ND	2160	1790	83	32-130	
Benzo(b)fluoranthene	ug/kg	ND	2160	1690	78	33-130	
Benzo(g,h,i)perylene	ug/kg	ND	2160	1920	89	28-130	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP
Pace Project No.: 92531096

MATRIX SPIKE SAMPLE: 3240201		92534135002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Benzo(k)fluoranthene	ug/kg	ND	2160	1690	78	31-130	
Benzoic Acid	ug/kg	ND	10800	ND	1	10-130	M1
Benzyl alcohol	ug/kg	ND	4340	3170	73	31-130	
bis(2-Chloroethoxy)methane	ug/kg	ND	2160	1680	78	30-130	
bis(2-Chloroethyl) ether	ug/kg	ND	2160	1760	81	68-130	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	2160	1770	82	40-130	
Butylbenzylphthalate	ug/kg	ND	2160	1780	82	40-130	
Chrysene	ug/kg	ND	2160	1810	83	30-130	
Di-n-butylphthalate	ug/kg	ND	2160	1800	83	41-130	
Di-n-octylphthalate	ug/kg	ND	2160	1810	84	42-130	
Dibenz(a,h)anthracene	ug/kg	ND	2160	1850	85	27-130	
Dibenzofuran	ug/kg	ND	2160	1700	78	32-130	
Diethylphthalate	ug/kg	ND	2160	1710	79	40-130	
Dimethylphthalate	ug/kg	ND	2160	1740	80	37-130	
Fluoranthene	ug/kg	ND	2160	1810	83	26-130	
Fluorene	ug/kg	ND	2160	1740	80	31-130	
Hexachlorobenzene	ug/kg	ND	2160	1730	80	29-130	
Hexachlorocyclopentadiene	ug/kg	ND	2160	1590	73	10-130	
Hexachloroethane	ug/kg	ND	2160	1660	77	21-130	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	2160	1930	89	28-130	
Isophorone	ug/kg	ND	2160	1700	79	32-130	
N-Nitroso-di-n-propylamine	ug/kg	ND	2160	1580	73	31-130	
N-Nitrosodimethylamine	ug/kg	ND	2160	1720	79	20-130	
N-Nitrosodiphenylamine	ug/kg	ND	2160	1860	86	32-130	
Nitrobenzene	ug/kg	ND	2160	1730	80	25-130	
Pentachlorophenol	ug/kg	ND	4340	3720	86	10-130	
Phenanthrene	ug/kg	ND	2160	1850	85	34-130	
Phenol	ug/kg	ND	2160	1590	73	14-130	
Pyrene	ug/kg	ND	2160	1790	82	31-130	
Pyridine	ug/kg	ND	2160	1440	67	10-130	
2,4,6-Tribromophenol (S)	%				83	18-130	
2-Fluorobiphenyl (S)	%				76	19-130	
2-Fluorophenol (S)	%				73	18-130	
Nitrobenzene-d5 (S)	%				76	21-130	
Phenol-d6 (S)	%				69	18-130	
Terphenyl-d14 (S)	%				64	15-130	

SAMPLE DUPLICATE: 3240202

Parameter	Units	92534135002	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
1-Methylnaphthalene	ug/kg	ND	ND		30	
2,2'-Oxybis(1-chloropropane)	ug/kg	ND	ND		30	
2,4,5-Trichlorophenol	ug/kg	ND	ND		30	
2,4,6-Trichlorophenol	ug/kg	ND	ND		30	
2,4-Dichlorophenol	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

SAMPLE DUPLICATE: 3240202

Parameter	Units	92534135002 Result	Dup Result	RPD	Max RPD	Qualifiers
2,4-Dimethylphenol	ug/kg	ND	ND		30	
2,4-Dinitrophenol	ug/kg	ND	ND		30	
2,4-Dinitrotoluene	ug/kg	ND	ND		30	
2,6-Dinitrotoluene	ug/kg	ND	ND		30	
2-Chloronaphthalene	ug/kg	ND	ND		30	
2-Chlorophenol	ug/kg	ND	ND		30	
2-Methylnaphthalene	ug/kg	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/kg	ND	ND		30	
2-Nitroaniline	ug/kg	ND	ND		30	
2-Nitrophenol	ug/kg	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	ND		30	
3,3'-Dichlorobenzidine	ug/kg	ND	ND		30	IL
3-Nitroaniline	ug/kg	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/kg	ND	ND		30	
4-Bromophenylphenyl ether	ug/kg	ND	ND		30	
4-Chloro-3-methylphenol	ug/kg	ND	ND		30	
4-Chloroaniline	ug/kg	ND	ND		30	
4-Chlorophenylphenyl ether	ug/kg	ND	ND		30	
4-Nitroaniline	ug/kg	ND	ND		30	
4-Nitrophenol	ug/kg	ND	ND		30	
Acenaphthene	ug/kg	ND	ND		30	
Acenaphthylene	ug/kg	ND	ND		30	
Aniline	ug/kg	ND	ND		30	
Anthracene	ug/kg	ND	ND		30	
Benzo(a)anthracene	ug/kg	ND	ND		30	
Benzo(b)fluoranthene	ug/kg	ND	ND		30	
Benzo(g,h,i)perylene	ug/kg	ND	ND		30	
Benzo(k)fluoranthene	ug/kg	ND	ND		30	
Benzoic Acid	ug/kg	ND	ND		30	
Benzyl alcohol	ug/kg	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/kg	ND	ND		30	
bis(2-Chloroethyl) ether	ug/kg	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	ND		30	
Butylbenzylphthalate	ug/kg	ND	ND		30	
Chrysene	ug/kg	ND	ND		30	
Di-n-butylphthalate	ug/kg	ND	ND		30	
Di-n-octylphthalate	ug/kg	ND	ND		30	
Dibenz(a,h)anthracene	ug/kg	ND	ND		30	
Dibenzofuran	ug/kg	ND	ND		30	
Diethylphthalate	ug/kg	ND	ND		30	
Dimethylphthalate	ug/kg	ND	ND		30	
Fluoranthene	ug/kg	ND	ND		30	
Fluorene	ug/kg	ND	ND		30	
Hexachlorobenzene	ug/kg	ND	ND		30	
Hexachlorocyclopentadiene	ug/kg	ND	ND		30	
Hexachloroethane	ug/kg	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	ND		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

SAMPLE DUPLICATE: 3240202

Parameter	Units	92534135002 Result	Dup Result	RPD	Max RPD	Qualifiers
Isophorone	ug/kg	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/kg	ND	ND		30	
N-Nitrosodimethylamine	ug/kg	ND	ND		30	
N-Nitrosodiphenylamine	ug/kg	ND	ND		30	
Nitrobenzene	ug/kg	ND	ND		30	
Pentachlorophenol	ug/kg	ND	ND		30	
Phenanthrene	ug/kg	ND	ND		30	
Phenol	ug/kg	ND	ND		30	
Pyrene	ug/kg	ND	ND		30	
Pyridine	ug/kg	ND	ND		30	
2,4,6-Tribromophenol (S)	%	69	69			
2-Fluorobiphenyl (S)	%	65	67			
2-Fluorophenol (S)	%	63	63			
Nitrobenzene-d5 (S)	%	66	68			
Phenol-d6 (S)	%	63	65			
Terphenyl-d14 (S)	%	60	61			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

QC Batch:	615599	Analysis Method:	SW-846
QC Batch Method:	SW-846	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92531096001, 92531096002, 92531096003, 92531096004

SAMPLE DUPLICATE: 3239497

Parameter	Units	92531096001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.5	12.9	12	25	N2

SAMPLE DUPLICATE: 3239498

Parameter	Units	92534511002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	90.8	90.8	0	25	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1 Analysis conducted outside the EPA method holding time.

H3 Sample was received or analysis requested beyond the recognized method holding time.

IL This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

v1 The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

v3 The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FORMER BRAMLETTE MGP

Pace Project No.: 92531096

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92531096001	RI-SB-31_SO_0.5-1.0_20210317	EPA 3546	616001	EPA 8270E	616024
92531096002	RI-SB-31_SO_5.5-6.0_20210317	EPA 3546	616170	EPA 8270E	616306
92531096003	RI-SB-32_SO_0.5-1.0_20210317	EPA 3546	616001	EPA 8270E	616024
92531096004	RI-SB-32_SO_5.5-6.0_20210317	EPA 3546	616001	EPA 8270E	616024
92531096001	RI-SB-31_SO_0.5-1.0_20210317	EPA 3546	615749	EPA 8270E	616064
92531096002	RI-SB-31_SO_5.5-6.0_20210317	EPA 3546	615749	EPA 8270E	616064
92531096003	RI-SB-32_SO_0.5-1.0_20210317	EPA 3546	615749	EPA 8270E	616064
92531096004	RI-SB-32_SO_5.5-6.0_20210317	EPA 3546	615749	EPA 8270E	616064
92531096005	TRIP BLANK	EPA 8260D	615558		
92531096001	RI-SB-31_SO_0.5-1.0_20210317	EPA 5035A/5030B	615494	EPA 8260D	615540
92531096002	RI-SB-31_SO_5.5-6.0_20210317	EPA 5035A/5030B	616269	EPA 8260D	616422
92531096003	RI-SB-32_SO_0.5-1.0_20210317	EPA 5035A/5030B	615494	EPA 8260D	615540
92531096004	RI-SB-32_SO_5.5-6.0_20210317	EPA 5035A/5030B	615494	EPA 8260D	615540
92531096001	RI-SB-31_SO_0.5-1.0_20210317	SW-846	615599		
92531096002	RI-SB-31_SO_5.5-6.0_20210317	SW-846	615599		
92531096003	RI-SB-32_SO_0.5-1.0_20210317	SW-846	615599		
92531096004	RI-SB-32_SO_5.5-6.0_20210317	SW-846	615599		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

SYnterra

Project #:

WO# : 92531096

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *4-5-21 UE*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: IR Gun ID: *921064* Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp: *1.7* Correction Factor: Add/Subtract (°C) *0.0*°C

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *1.7*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No *3/21*

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <i>SL, WT</i>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92531096

PM: KLH1

Due Date: 04/09/21

CLIENT: 92-Duke Ener

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																					3								
2																						3							
3																						3							
4																						3							
5																2													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

July 09, 2021

Todd Plating
SynTerra
148 River St
Taylors, SC 29687

RE: Project: Bram MGP
Pace Project No.: 92547702

Dear Todd Plating:

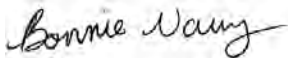
Enclosed are the analytical results for sample(s) received by the laboratory on July 02, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Bram MGP
Pace Project No.: 92547702

Pace Analytical Services Charlotte

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Bram MGP
Pace Project No.: 92547702

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92547702001	R1-SB-13 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702002	R1-SB-14 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702003	R1-SB-15 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702004	R1-SB-16 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702005	R1-SB-17 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702006	R1-SB-18 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702007	R1-SB-19 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702008	R1-SB-20 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702009	R1-SB-21 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702010	R1-SB-22 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702011	R1-SB-23 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702012	R1-SB-24 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702013	R1-SB-25 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702014	R1-SB-26 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702015	R1-SB-27 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702016	R1-SB-28 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702017	R1-SB-29 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702018	R1-SB-30 (0.5-1)	EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C
92547702019	R1-SB-31 (0.5-1)	EPA 8270E	SEM	5	PASI-C

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SAMPLE ANALYTE COUNT

Project: Bram MGP

Pace Project No.: 92547702

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92547702020	R1-SB-32 (0.5-1)	SW-846	KDF	1	PASI-C
		EPA 8270E	SEM	5	PASI-C
92547702021	R1-SB-33 (0.5-1)	SW-846	KDF	1	PASI-C
		EPA 8270E	SEM	5	PASI-C
92547702022	R1-SB-34 (0.5-1)	SW-846	KDF	1	PASI-C
		EPA 8270E	SEM	5	PASI-C
92547702023	R1-SB-35 (0.5-1)	SW-846	KDF	1	PASI-C
		EPA 8270E	SEM	5	PASI-C
92547702024	R1-SB-36 (0.5-1)	SW-846	KDF	1	PASI-C
		EPA 8270E	SEM	5	PASI-C
		SW-846	KDF	1	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-13 (0.5-1) **Lab ID: 92547702001** Collected: 06/30/21 14:05 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 10:50	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 10:50	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	56	%	31-130	1	07/07/21 21:12	07/08/21 10:50	321-60-8	
Nitrobenzene-d5 (S)	54	%	32-130	1	07/07/21 21:12	07/08/21 10:50	4165-60-0	
Terphenyl-d14 (S)	63	%	24-130	1	07/07/21 21:12	07/08/21 10:50	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	14.9	%	0.10	1		07/07/21 16:06		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-14 (0.5-1) **Lab ID: 92547702002** Collected: 06/30/21 14:17 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.11	mg/kg	0.012	1	07/07/21 21:12	07/08/21 11:34	50-32-8	
Dibenz(a,h)anthracene	0.027	mg/kg	0.012	1	07/07/21 21:12	07/08/21 11:34	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	74	%	31-130	1	07/07/21 21:12	07/08/21 11:34	321-60-8	
Nitrobenzene-d5 (S)	65	%	32-130	1	07/07/21 21:12	07/08/21 11:34	4165-60-0	
Terphenyl-d14 (S)	75	%	24-130	1	07/07/21 21:12	07/08/21 11:34	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	15.8	%	0.10	1		07/07/21 16:07		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-15 (0.5-1) **Lab ID: 92547702003** Collected: 06/30/21 14:25 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	4.5	mg/kg	0.12	10	07/07/21 21:12	07/08/21 12:19	50-32-8	
Dibenz(a,h)anthracene	0.64	mg/kg	0.12	10	07/07/21 21:12	07/08/21 12:19	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	0	%	31-130	10	07/07/21 21:12	07/08/21 12:19	321-60-8	D3,S4
Nitrobenzene-d5 (S)	0	%	32-130	10	07/07/21 21:12	07/08/21 12:19	4165-60-0	S4
Terphenyl-d14 (S)	0	%	24-130	10	07/07/21 21:12	07/08/21 12:19	1718-51-0	S4
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	13.2	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-16 (0.5-1) **Lab ID: 92547702004** Collected: 06/30/21 14:41 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 12:41	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 12:41	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	46	%	31-130	1	07/07/21 21:12	07/08/21 12:41	321-60-8	
Nitrobenzene-d5 (S)	59	%	32-130	1	07/07/21 21:12	07/08/21 12:41	4165-60-0	
Terphenyl-d14 (S)	31	%	24-130	1	07/07/21 21:12	07/08/21 12:41	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	12.8	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-17 (0.5-1) **Lab ID: 92547702005** Collected: 06/30/21 14:57 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 13:03	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 13:03	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	39	%	31-130	1	07/07/21 21:12	07/08/21 13:03	321-60-8	
Nitrobenzene-d5 (S)	57	%	32-130	1	07/07/21 21:12	07/08/21 13:03	4165-60-0	
Terphenyl-d14 (S)	36	%	24-130	1	07/07/21 21:12	07/08/21 13:03	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	18.2	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-18 (0.5-1) **Lab ID: 92547702006** Collected: 06/30/21 15:09 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 13:25	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 13:25	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	110	%	31-130	1	07/07/21 21:12	07/08/21 13:25	321-60-8	
Nitrobenzene-d5 (S)	126	%	32-130	1	07/07/21 21:12	07/08/21 13:25	4165-60-0	
Terphenyl-d14 (S)	60	%	24-130	1	07/07/21 21:12	07/08/21 13:25	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	18.3	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-19 (0.5-1) **Lab ID: 92547702007** Collected: 06/30/21 15:21 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.21	mg/kg	0.014	1	07/07/21 21:12	07/08/21 13:47	50-32-8	
Dibenz(a,h)anthracene	0.032	mg/kg	0.014	1	07/07/21 21:12	07/08/21 13:47	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	56	%	31-130	1	07/07/21 21:12	07/08/21 13:47	321-60-8	
Nitrobenzene-d5 (S)	53	%	32-130	1	07/07/21 21:12	07/08/21 13:47	4165-60-0	
Terphenyl-d14 (S)	60	%	24-130	1	07/07/21 21:12	07/08/21 13:47	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	27.6	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-20 (0.5-1) **Lab ID: 92547702008** Collected: 06/30/21 15:35 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 14:10	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 14:10	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	59	%	31-130	1	07/07/21 21:12	07/08/21 14:10	321-60-8	
Nitrobenzene-d5 (S)	78	%	32-130	1	07/07/21 21:12	07/08/21 14:10	4165-60-0	
Terphenyl-d14 (S)	51	%	24-130	1	07/07/21 21:12	07/08/21 14:10	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	7.2	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-21 (0.5-1) **Lab ID: 92547702009** Collected: 06/30/21 15:43 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 14:32	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 14:32	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	36	%	31-130	1	07/07/21 21:12	07/08/21 14:32	321-60-8	
Nitrobenzene-d5 (S)	49	%	32-130	1	07/07/21 21:12	07/08/21 14:32	4165-60-0	
Terphenyl-d14 (S)	55	%	24-130	1	07/07/21 21:12	07/08/21 14:32	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	17.2	%	0.10	1		07/07/21 16:07		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-22 (0.5-1) **Lab ID: 92547702010** Collected: 06/30/21 15:53 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.086	mg/kg	0.012	1	07/07/21 21:12	07/08/21 14:54	50-32-8	
Dibenz(a,h)anthracene	0.015	mg/kg	0.012	1	07/07/21 21:12	07/08/21 14:54	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	65	%	31-130	1	07/07/21 21:12	07/08/21 14:54	321-60-8	
Nitrobenzene-d5 (S)	62	%	32-130	1	07/07/21 21:12	07/08/21 14:54	4165-60-0	
Terphenyl-d14 (S)	70	%	24-130	1	07/07/21 21:12	07/08/21 14:54	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	15.1	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-23 (0.5-1) **Lab ID: 92547702011** Collected: 06/30/21 16:01 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.59	mg/kg	0.030	2	07/07/21 21:12	07/08/21 15:17	50-32-8	
Dibenz(a,h)anthracene	0.080	mg/kg	0.030	2	07/07/21 21:12	07/08/21 15:17	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	57	%	31-130	2	07/07/21 21:12	07/08/21 15:17	321-60-8	D3
Nitrobenzene-d5 (S)	53	%	32-130	2	07/07/21 21:12	07/08/21 15:17	4165-60-0	
Terphenyl-d14 (S)	59	%	24-130	2	07/07/21 21:12	07/08/21 15:17	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	31.9	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-24 (0.5-1) **Lab ID: 92547702012** Collected: 06/30/21 16:10 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 15:39	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.011	1	07/07/21 21:12	07/08/21 15:39	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	44	%	31-130	1	07/07/21 21:12	07/08/21 15:39	321-60-8	
Nitrobenzene-d5 (S)	57	%	32-130	1	07/07/21 21:12	07/08/21 15:39	4165-60-0	
Terphenyl-d14 (S)	38	%	24-130	1	07/07/21 21:12	07/08/21 15:39	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	13.6	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-25 (0.5-1) **Lab ID: 92547702013** Collected: 06/30/21 16:04 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.044	mg/kg	0.015	1	07/07/21 21:12	07/08/21 16:01	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.015	1	07/07/21 21:12	07/08/21 16:01	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	47	%	31-130	1	07/07/21 21:12	07/08/21 16:01	321-60-8	
Nitrobenzene-d5 (S)	56	%	32-130	1	07/07/21 21:12	07/08/21 16:01	4165-60-0	
Terphenyl-d14 (S)	53	%	24-130	1	07/07/21 21:12	07/08/21 16:01	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	33.5	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-26 (0.5-1) **Lab ID: 92547702014** Collected: 06/30/21 15:52 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.014	1	07/07/21 21:12	07/08/21 16:23	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.014	1	07/07/21 21:12	07/08/21 16:23	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	38	%	31-130	1	07/07/21 21:12	07/08/21 16:23	321-60-8	
Nitrobenzene-d5 (S)	48	%	32-130	1	07/07/21 21:12	07/08/21 16:23	4165-60-0	
Terphenyl-d14 (S)	82	%	24-130	1	07/07/21 21:12	07/08/21 16:23	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	27.4	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-27 (0.5-1) **Lab ID: 92547702015** Collected: 06/30/21 15:44 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.050	mg/kg	0.012	1	07/07/21 21:12	07/08/21 16:46	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 16:46	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	51	%	31-130	1	07/07/21 21:12	07/08/21 16:46	321-60-8	
Nitrobenzene-d5 (S)	54	%	32-130	1	07/07/21 21:12	07/08/21 16:46	4165-60-0	
Terphenyl-d14 (S)	61	%	24-130	1	07/07/21 21:12	07/08/21 16:46	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	16.0	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-28 (0.5-1) **Lab ID: 92547702016** Collected: 06/30/21 15:30 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.13	mg/kg	0.013	1	07/07/21 21:12	07/08/21 17:08	50-32-8	
Dibenz(a,h)anthracene	0.026	mg/kg	0.013	1	07/07/21 21:12	07/08/21 17:08	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	46	%	31-130	1	07/07/21 21:12	07/08/21 17:08	321-60-8	
Nitrobenzene-d5 (S)	40	%	32-130	1	07/07/21 21:12	07/08/21 17:08	4165-60-0	
Terphenyl-d14 (S)	51	%	24-130	1	07/07/21 21:12	07/08/21 17:08	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	22.5	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-29 (0.5-1) **Lab ID: 92547702017** Collected: 06/30/21 15:14 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.042	mg/kg	0.012	1	07/07/21 21:12	07/08/21 17:31	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 17:31	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	56	%	31-130	1	07/07/21 21:12	07/08/21 17:31	321-60-8	
Nitrobenzene-d5 (S)	57	%	32-130	1	07/07/21 21:12	07/08/21 17:31	4165-60-0	
Terphenyl-d14 (S)	74	%	24-130	1	07/07/21 21:12	07/08/21 17:31	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	19.9	%	0.10	1		07/07/21 16:08		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-30 (0.5-1) **Lab ID: 92547702018** Collected: 06/30/21 15:04 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.013	1	07/07/21 21:12	07/08/21 17:53	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.013	1	07/07/21 21:12	07/08/21 17:53	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	36	%	31-130	1	07/07/21 21:12	07/08/21 17:53	321-60-8	
Nitrobenzene-d5 (S)	54	%	32-130	1	07/07/21 21:12	07/08/21 17:53	4165-60-0	
Terphenyl-d14 (S)	45	%	24-130	1	07/07/21 21:12	07/08/21 17:53	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	21.7	%	0.10	1		07/07/21 17:01		N2

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ANALYTICAL RESULTS

Project: Bram MGP
Pace Project No.: 92547702

Sample: R1-SB-31 (0.5-1) **Lab ID: 92547702019** Collected: 06/30/21 14:54 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.21	mg/kg	0.025	2	07/07/21 21:12	07/08/21 18:15	50-32-8	
Dibenz(a,h)anthracene	0.034	mg/kg	0.025	2	07/07/21 21:12	07/08/21 18:15	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	58	%	31-130	2	07/07/21 21:12	07/08/21 18:15	321-60-8	D3
Nitrobenzene-d5 (S)	50	%	32-130	2	07/07/21 21:12	07/08/21 18:15	4165-60-0	
Terphenyl-d14 (S)	66	%	24-130	2	07/07/21 21:12	07/08/21 18:15	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	18.7	%	0.10	1		07/07/21 17:01		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-32 (0.5-1) **Lab ID: 92547702020** Collected: 06/30/21 14:42 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.025	mg/kg	0.012	1	07/07/21 21:12	07/08/21 18:38	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:12	07/08/21 18:38	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	40	%	31-130	1	07/07/21 21:12	07/08/21 18:38	321-60-8	
Nitrobenzene-d5 (S)	56	%	32-130	1	07/07/21 21:12	07/08/21 18:38	4165-60-0	
Terphenyl-d14 (S)	42	%	24-130	1	07/07/21 21:12	07/08/21 18:38	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	17.7	%	0.10	1		07/07/21 17:01		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-33 (0.5-1) **Lab ID: 92547702021** Collected: 06/30/21 14:30 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.050	mg/kg	0.012	1	07/07/21 21:15	07/08/21 10:27	50-32-8	M1
Dibenz(a,h)anthracene	ND	mg/kg	0.012	1	07/07/21 21:15	07/08/21 10:27	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	62	%	31-130	1	07/07/21 21:15	07/08/21 10:27	321-60-8	
Nitrobenzene-d5 (S)	61	%	32-130	1	07/07/21 21:15	07/08/21 10:27	4165-60-0	
Terphenyl-d14 (S)	78	%	24-130	1	07/07/21 21:15	07/08/21 10:27	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	20.0	%	0.10	1		07/07/21 17:01		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-34 (0.5-1) **Lab ID: 92547702022** Collected: 06/30/21 14:20 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.015	1	07/07/21 21:15	07/08/21 19:22	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.015	1	07/07/21 21:15	07/08/21 19:22	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	45	%	31-130	1	07/07/21 21:15	07/08/21 19:22	321-60-8	
Nitrobenzene-d5 (S)	47	%	32-130	1	07/07/21 21:15	07/08/21 19:22	4165-60-0	
Terphenyl-d14 (S)	42	%	24-130	1	07/07/21 21:15	07/08/21 19:22	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	33.6	%	0.10	1		07/07/21 17:01		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-35 (0.5-1) **Lab ID: 92547702023** Collected: 06/30/21 14:14 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	ND	mg/kg	0.013	1	07/07/21 21:15	07/08/21 20:07	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.013	1	07/07/21 21:15	07/08/21 20:07	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	39	%	31-130	1	07/07/21 21:15	07/08/21 20:07	321-60-8	
Nitrobenzene-d5 (S)	56	%	32-130	1	07/07/21 21:15	07/08/21 20:07	4165-60-0	
Terphenyl-d14 (S)	42	%	24-130	1	07/07/21 21:15	07/08/21 20:07	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	26.7	%	0.10	1		07/07/21 17:02		N2

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ANALYTICAL RESULTS

Project: Bram MGP

Pace Project No.: 92547702

Sample: R1-SB-36 (0.5-1) **Lab ID: 92547702024** Collected: 06/30/21 14:08 Received: 07/02/21 11:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV MW PAH by SIM		Analytical Method: EPA 8270E Preparation Method: EPA 3546 Pace Analytical Services - Charlotte						
Benzo(a)pyrene	0.018	mg/kg	0.011	1	07/07/21 21:15	07/08/21 20:29	50-32-8	
Dibenz(a,h)anthracene	ND	mg/kg	0.011	1	07/07/21 21:15	07/08/21 20:29	53-70-3	
Surrogates								
2-Fluorobiphenyl (S)	44	%	31-130	1	07/07/21 21:15	07/08/21 20:29	321-60-8	
Nitrobenzene-d5 (S)	51	%	32-130	1	07/07/21 21:15	07/08/21 20:29	4165-60-0	
Terphenyl-d14 (S)	44	%	24-130	1	07/07/21 21:15	07/08/21 20:29	1718-51-0	
Percent Moisture		Analytical Method: SW-846 Pace Analytical Services - Charlotte						
Percent Moisture	12.3	%	0.10	1		07/07/21 17:02		N2

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Bram MGP
Pace Project No.: 92547702

QC Batch: 631967 Analysis Method: EPA 8270E
QC Batch Method: EPA 3546 Analysis Description: 8270E MSSV PAH by SIM
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92547702001, 92547702002, 92547702003, 92547702004, 92547702005, 92547702006, 92547702007, 92547702008, 92547702009, 92547702010, 92547702011, 92547702012, 92547702013, 92547702014, 92547702015, 92547702016, 92547702017, 92547702018, 92547702019, 92547702020

METHOD BLANK: 3319949 Matrix: Solid
Associated Lab Samples: 92547702001, 92547702002, 92547702003, 92547702004, 92547702005, 92547702006, 92547702007, 92547702008, 92547702009, 92547702010, 92547702011, 92547702012, 92547702013, 92547702014, 92547702015, 92547702016, 92547702017, 92547702018, 92547702019, 92547702020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzo(a)pyrene	mg/kg	ND	0.0099	07/08/21 08:59	
Dibenz(a,h)anthracene	mg/kg	ND	0.0099	07/08/21 08:59	
2-Fluorobiphenyl (S)	%	48	31-130	07/08/21 08:59	
Nitrobenzene-d5 (S)	%	47	32-130	07/08/21 08:59	
Terphenyl-d14 (S)	%	58	24-130	07/08/21 08:59	

LABORATORY CONTROL SAMPLE: 3319950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	mg/kg	0.034	0.024	73	44-130	
Dibenz(a,h)anthracene	mg/kg	0.034	0.027	82	58-130	
2-Fluorobiphenyl (S)	%			67	31-130	
Nitrobenzene-d5 (S)	%			75	32-130	
Terphenyl-d14 (S)	%			85	24-130	

MATRIX SPIKE SAMPLE: 3319951

Parameter	Units	92547702001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	mg/kg	ND	0.039	0.027	63	10-130	
Dibenz(a,h)anthracene	mg/kg	ND	0.039	0.024	60	10-130	
2-Fluorobiphenyl (S)	%				70	31-130	
Nitrobenzene-d5 (S)	%				68	32-130	
Terphenyl-d14 (S)	%				74	24-130	

SAMPLE DUPLICATE: 3319952

Parameter	Units	92547702002 Result	Dup Result	RPD	Qualifiers
Benzo(a)pyrene	mg/kg	0.11	0.092	19	
Dibenz(a,h)anthracene	mg/kg	0.027	0.022	19	
2-Fluorobiphenyl (S)	%	74	73		
Nitrobenzene-d5 (S)	%	65	69		
Terphenyl-d14 (S)	%	75	80		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Bram MGP
Pace Project No.: 92547702

QC Batch: 631968 Analysis Method: EPA 8270E
QC Batch Method: EPA 3546 Analysis Description: 8270E MSSV PAH by SIM
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92547702021, 92547702022, 92547702023, 92547702024

METHOD BLANK: 3319953 Matrix: Solid
Associated Lab Samples: 92547702021, 92547702022, 92547702023, 92547702024

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzo(a)pyrene	mg/kg	ND	0.0098	07/08/21 09:43	
Dibenz(a,h)anthracene	mg/kg	ND	0.0098	07/08/21 09:43	
2-Fluorobiphenyl (S)	%	58	31-130	07/08/21 09:43	
Nitrobenzene-d5 (S)	%	66	32-130	07/08/21 09:43	
Terphenyl-d14 (S)	%	81	24-130	07/08/21 09:43	

LABORATORY CONTROL SAMPLE: 3319954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	mg/kg	0.033	0.023	71	44-130	
Dibenz(a,h)anthracene	mg/kg	0.033	0.026	79	58-130	
2-Fluorobiphenyl (S)	%			65	31-130	
Nitrobenzene-d5 (S)	%			72	32-130	
Terphenyl-d14 (S)	%			87	24-130	

MATRIX SPIKE SAMPLE: 3319955

Parameter	Units	92547702021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	mg/kg	0.050	0.041	0.039	-28	10-130	M1
Dibenz(a,h)anthracene	mg/kg	ND	0.041	0.018	18	10-130	
2-Fluorobiphenyl (S)	%				70	31-130	
Nitrobenzene-d5 (S)	%				69	32-130	
Terphenyl-d14 (S)	%				65	24-130	

SAMPLE DUPLICATE: 3319956

Parameter	Units	92547702022 Result	Dup Result	RPD	Qualifiers
Benzo(a)pyrene	mg/kg	ND	.0066J		
Dibenz(a,h)anthracene	mg/kg	ND	ND		
2-Fluorobiphenyl (S)	%	45	42		
Nitrobenzene-d5 (S)	%	47	56		
Terphenyl-d14 (S)	%	42	44		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Bram MGP
Pace Project No.: 92547702

QC Batch:	631943	Analysis Method:	SW-846
QC Batch Method:	SW-846	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92547702001, 92547702002, 92547702003, 92547702004, 92547702005, 92547702006, 92547702007, 92547702008, 92547702009, 92547702010, 92547702011, 92547702012, 92547702013, 92547702014, 92547702015, 92547702016, 92547702017

SAMPLE DUPLICATE: 3319737

Parameter	Units	92547548001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	20.8	20.9	1	N2

SAMPLE DUPLICATE: 3319738

Parameter	Units	92548032002 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	33.1	32.7	1	N2

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QUALITY CONTROL DATA

Project: Bram MGP
Pace Project No.: 92547702

QC Batch:	631955	Analysis Method:	SW-846
QC Batch Method:	SW-846	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92547702018, 92547702019, 92547702020, 92547702021, 92547702022, 92547702023, 92547702024

SAMPLE DUPLICATE: 3319850

Parameter	Units	92547702018 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	21.7	21.8	1	N2

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Bram MGP
Pace Project No.: 92547702

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bram MGP
Pace Project No.: 92547702

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92547702001	R1-SB-13 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702002	R1-SB-14 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702003	R1-SB-15 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702004	R1-SB-16 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702005	R1-SB-17 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702006	R1-SB-18 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702007	R1-SB-19 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702008	R1-SB-20 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702009	R1-SB-21 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702010	R1-SB-22 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702011	R1-SB-23 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702012	R1-SB-24 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702013	R1-SB-25 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702014	R1-SB-26 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702015	R1-SB-27 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702016	R1-SB-28 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702017	R1-SB-29 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702018	R1-SB-30 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702019	R1-SB-31 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702020	R1-SB-32 (0.5-1)	EPA 3546	631967	EPA 8270E	632047
92547702021	R1-SB-33 (0.5-1)	EPA 3546	631968	EPA 8270E	632048
92547702022	R1-SB-34 (0.5-1)	EPA 3546	631968	EPA 8270E	632048
92547702023	R1-SB-35 (0.5-1)	EPA 3546	631968	EPA 8270E	632048
92547702024	R1-SB-36 (0.5-1)	EPA 3546	631968	EPA 8270E	632048
92547702001	R1-SB-13 (0.5-1)	SW-846	631943		
92547702002	R1-SB-14 (0.5-1)	SW-846	631943		
92547702003	R1-SB-15 (0.5-1)	SW-846	631943		
92547702004	R1-SB-16 (0.5-1)	SW-846	631943		
92547702005	R1-SB-17 (0.5-1)	SW-846	631943		
92547702006	R1-SB-18 (0.5-1)	SW-846	631943		
92547702007	R1-SB-19 (0.5-1)	SW-846	631943		
92547702008	R1-SB-20 (0.5-1)	SW-846	631943		
92547702009	R1-SB-21 (0.5-1)	SW-846	631943		
92547702010	R1-SB-22 (0.5-1)	SW-846	631943		
92547702011	R1-SB-23 (0.5-1)	SW-846	631943		
92547702012	R1-SB-24 (0.5-1)	SW-846	631943		
92547702013	R1-SB-25 (0.5-1)	SW-846	631943		
92547702014	R1-SB-26 (0.5-1)	SW-846	631943		
92547702015	R1-SB-27 (0.5-1)	SW-846	631943		
92547702016	R1-SB-28 (0.5-1)	SW-846	631943		
92547702017	R1-SB-29 (0.5-1)	SW-846	631943		
92547702018	R1-SB-30 (0.5-1)	SW-846	631955		
92547702019	R1-SB-31 (0.5-1)	SW-846	631955		
92547702020	R1-SB-32 (0.5-1)	SW-846	631955		
92547702021	R1-SB-33 (0.5-1)	SW-846	631955		
92547702022	R1-SB-34 (0.5-1)	SW-846	631955		
92547702023	R1-SB-35 (0.5-1)	SW-846	631955		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bram MGP
Pace Project No.: 92547702

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92547702024	R1-SB-36 (0.5-1)	SW-846	631955		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
Page 1 of 2
Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Synterra
Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Project #: **WO# : 92547702**

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 7/2/21

Packing Material: Bubble Wrap Bubble Bags None Other
Thermometer: IR Gun ID: 43T071 Type of Ice: Wet Blue None

Biological Tissue Frozen?
 Yes No N/A

Cooler Temp: 3.3 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 3.3

USDA Regulated Soil (N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

Field Data Required? Yes No

COMMENTS/SAMPLE DISCREPANCY

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

W0# : 92547702

PM: BV

Due Date: 07/07/21

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHG

CLIENT : 92-SYNTERRA

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.



WO# : 92547702
PM: BV **Due Date: 07/07/21**
CLIENT : 92-SYNTERRA

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
 Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg
 **Bottom half of box is to list number of bottles

Project

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PM: BV **Due Date: 07/07/21**
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Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 85176

Client: Syn Terra
Address: 148 Raven St
City: Clemson State: SC Zip Code: 29689

Report to Contact: Tom Pralig

Telephone No. / E-mail: 8270E SIM

Sampler's Signature: [Signature]

Analysis (Attach list where space is needed): Polating @ Syn Terra Corp. Inc

Page 3 of 3

Project Name: Brow Hill MGP

Printed Name: Tom Pralig

Laboratory Lot Number

Project No.: 00273100.04

P.O. No.

Sample ID / Description: (Containers for each sample may be combined on one line.)

Date

Time

Matrix: G=Grab C=Composite
 Aqueous Solid Non-Aqueous

No. of Containers by Preservative Type

H2SO4 HNO3 HCl NaOH 5035 Kit

8270E SIM

Remarks / Cooler I.D.

R1-SB-33 (0.5-1)
R1-SB-34 (0.5-1)
R1-SB-35 (0.5-1)
R1-SB-36 (0.5-1)

11/20/12
1470
1470
1414
1408

G G G G G

X X X X X

X X X X X

021
022
023
024

Report Benzene + Pyrene + Diben 2(a,h) Anthracene only. (Low level)

Turn Around Time Required (Prior lab approval required for expedited TAT.)
 Standard Rush (Specify) 48 Hr

Sample Disposed: Return to Client Disposed by Lab

Possible Hazard Identification: Non-hazard Flammable Skin Irritant Poison Unknown

OC Requirements (Specify)

1. Relinquished by: [Signature] Date: 11/20/12 Time: 1057
2. Relinquished by: [Signature] Date: 12-2-21 Time: 1115
3. Relinquished by: [Signature] Date: 12-2-21 Time: 1340
4. Relinquished by: [Signature] Date: 12/2 Time: 1340

1. Received by: [Signature] Date: 11/20/12 Time: 1057
2. Received by: [Signature] Date: 12-2-21 Time: 1115
3. Received by: [Signature] Date: 12-2-21 Time: 1340
4. Laboratory received by: [Signature] Date: 12/2 Time: 1340

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on ice (Circle) Yes No Ice Pack

Receipt Temp. 3.3 °C