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Investigation Report  
Marsh Lumber VCC  
Pamplico, South Carolina  
S&ME Project No. 1584-98-146C

PREPARED FOR:

**Marsh Furniture Company, Inc.**  
1001 South Centennial Avenue  
High Point, North Carolina 27262

PREPARED BY:

**S&ME, Inc.**  
8646 West Market Street, Suite 105  
Greensboro, North Carolina 27409

**February 25, 2020**



February 25, 2020

Marsh Furniture Company, Inc.  
1001 S. Centennial Avenue  
High Point, North Carolina 27262

Attention: Mr. Bill Bumgarner

Reference: **Investigation Report**  
**Marsh Lumber VCC**  
Pamplico, South Carolina  
S&ME Project No. 1584-98-146C

Dear Mr. Bumgarner:

S&ME, Inc. is pleased to submit this Investigation Report for the assessment activities conducted at the referenced site. This assessment describes the methods to address assessment of potential contaminant impacts as described in the above referenced VCC agreement.

S&ME appreciates the opportunity to prepare this Investigation Report. A copy of this report has also been submitted to Ms. Kim Kuhn at the South Carolina Department of Health and Environmental Control (SCDHEC). If you have questions or if you need additional information, please contact Mr. Edmund Henriques at 336.553.1209.

Sincerely,

**S&ME, Inc.**

A handwritten signature in blue ink that reads "John Whitehead" is written over a circular professional seal. The seal contains the text: "JOHN WHITEHEAD", "REGISTERED", "No. 892", "SOUTH CAROLINA", and "PROFESSIONAL GEOLOGIST".

John Whitehead  
Senior Geologist  
jwhitehead@smeinc.com

A handwritten signature in blue ink that reads "Edmund Q.B. Henriques".

Edmund Q.B. Henriques  
Senior Project Manager  
[ehenriques@smeinc.com](mailto:ehenriques@smeinc.com)

cc: Ms. Kim Kuhn, SCDHEC, 2600 Bull Street, Columbia, SC 29201-1708





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## 1.0 Executive Summary

The Marsh Lumber site is located in the town of Pamplico, South Carolina. The property is zoned industrial and occupied by Marsh Lumber operations. The surround area is characterized by a mixture of residential and light industrial parcels. Multiple and extensive environmental assessment have been completed at the Marsh Lumber site over the past 29 years. Most of the assessments work completed relates to the discovery, assessment, and remediation of PCP dissolved in groundwater beneath a portion of the site. The site assessment activities conducted have determined the source, nature, and extent of PCP. Soil impacted by PCP and possible PCP degradation compounds are limited to a relatively small area in the former Green Chain Area, with reported concentrations that were less than EPA Regional Screening Levels for Industrial Soil. Groundwater impacts were delimited to the water table aquifer, contained within the property boundary, and delimited to points prior to groundwater reaching the local shallow groundwater discharge point, an unnamed tributary to Big Swamp Branch.

The water table aquifer at the site is not known to be used as an underground source of drinking water. The updated water well receptor survey indicated the Town of Pamplico provides water to residents and businesses. The Town's potable water system draw water from a deeper aquifer that is substantially deeper than the PCP impacted surficial aquifer at the Marsh Lumber site. Active water supply wells identified are generally located approximately 1/2 mile or more from the Marsh Lumber site. Given that potable water is provided by the Town of Pamplico, the potential future use of the shallow aquifer in the immediate vicinity of the site as a drinking water source is presumed to be low.

Two Bio-sparging pilot tests have been performed, both resulted in in-situ reductions of PCP concentrations, indicating bio-sparging as a viable remedial alternative for PCP. Trends in PCP concentrations over time suggest that the PCP groundwater plume is relatively stable, with concentration trends generally declining over time.

The site assessment phase is now complete. This report summarizes the multiple site assessments conducted and provides a foundation for the pending Feasibility Study.



## 2.0 Introduction

### 2.1 Site Location and Setting

The subject Marsh Lumber property is located at 119 Sixth Avenue, Pamplico, Florence County, South Carolina. The Property includes approximately 15 acres of an approximate 28 acre parcel identified by the County of Florence as Tax Map Series Number 60005-01-003 (the property does not include the portion of the parcel east of the railroad tracks). The current owner is listed as Marsh Furniture Company, Inc. (MARSH). The property is zoned industrial and occupied by MARSH operations. **Figure 1** depicts the site location on portions of the Pamplico North, SC and Pamplico South, SC, 7.5 minute series, USGS Topographic Maps dated 2014. **Figure 2** was prepared from scans of 1988 As-Built survey drawings depicting the parcel outline and historic site buildings.

The site is in an area characterized by a mixture of residential and light industrial parcels. Based on a review of the Florence County, South Carolina G.I.S. website, the subject site is zoned light industrial. To the north across 7<sup>th</sup> Avenue, the site is bordered by a light industrial parcel containing a vacant building. To the east across the Seaboard Coast Line Railroad parcel is a Town of Pamplico maintenance operations building and vacant parcels, which are zoned light industrial. The area to the south across East 6<sup>th</sup> Avenue is composed of residential and light industrial properties. To the west across Marsh Road / N. Walnut Street are the Woodside Cemetery, a vacant woodland parcel, and a few residential parcels. **Figure 3** provides an aerial photograph covering the Marsh Lumber site and vicinity.

### 2.2 Site History

The following provides a condensed summary of relevant site history.

- On May 17, 1946, MARSH acquired the property from H.M Propst. The former owners had operated a plywood mill on the Property prior to MARSH's acquisition in 1946.
- MARSH's initial activities on the property included operation of a plywood mill up until the 1960s. Marsh constructed and began operation of the first sawmill in 1953. Following 1953, MARSH activities on the property have included lumber handling and storage, saw and dimension milling, and lumber treating and drying. The lumber treatment for the purpose of preventing mold and insect infestation included the use of a dip tank containing liquid sodium pentachlorophenol (PCP) and a drip pad located in an area called the "Green Chain Area." This was a common process for lumber mills during this period.
- The use of PCP-containing products was discontinued by MARSH in 1986 prior to EPA listing of certain wood preserving wastes as hazardous under RCRA in 1990 and the promulgation of RCRA regulation of drip pads in 1991.
- MARSH sawmill operations and associated non-PCP wood treatment activities ceased in 2007. Subsequently, the sawmill building and associated structures were dismantled.
- MARSH currently operates a dimension mill on the subject site. MARSH receives lumber for processing which is already kiln dried, and there is no treatment of lumber at the site.



## 2.3 Incident History

Multiple and extensive environmental assessment have been completed at the site over the past 29 years. Most of the assessments work completed relates to the discovery, assessment, and remediation of PCP dissolved in groundwater beneath a portion of the site. The following provides a brief summary of relevant incident history.

- In 1991 a Preliminary Environmental Site Assessment (ESA) performed on behalf of MARSH identified the Green Chain Area, shop area, and former underground storage tank (UST) areas as potential areas of concern.
- In 1992, a soil and groundwater assessment was initiated in the three areas of concern identified in the 1991 ESA.
  1. Shop Area: In 1992 and 1993, Total Petroleum Hydrocarbons (TPH) were detected in the soil in the shop area; however, petroleum constituents were not detected in the groundwater.
  2. Former UST: In 1992, benzene, toluene, ethylbenzene and xylenes were detected in the soil at the former UST area and groundwater results indicated benzene, toluene, and ethylbenzene in this area. The notice of this release was forwarded to SCDHEC's UST section in September 1993. Further assessment of the UST release was conducted between 2002 and 2004. The UST incident was closed by SCDHEC in 2004 and the monitoring wells were properly abandoned.
  3. Green Chain Area: Beginning in 1992, the soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, tentatively identified compounds, and the eight Resource Conservation and Recovery Act (RCRA) metals. Multiple soil samples were collected in the Green Chain Area and the treated wood storage area to assess source and secondary source area contamination. The soil samples were analyzed for base-neutral/acid extractables (no target compounds including PCP were detected) and metals (no results exceeding background). Several tentatively identified compounds (TICs) were reported, however. PCP was detected in the groundwater at concentrations exceeding the Maximum Contaminant Levels.
- Subsequent to 1993, MARSH conducted assessments to identify the source, nature and extent of PCP contamination at the site and has implemented remedial measures to address the contamination.
- January 1998, SCDHEC issues a Consent Order to MARSH
- June 1999, a Site Assessment Report was submitted to SCDHEC.
- In 2000, SCDHEC approves semi-annual surface water and groundwater monitoring.
- January 2007, SCDHEC requests an additional down-gradient sentinel well.
- March 2009, MARSH initiated the first bio-sparg pilot test to determine whether this would be a viable remedy for reducing PCP concentrations.
- In March 2013, MARSH was invited by SCDHEC to enter the Department's voluntary cleanup contract (VCC) program in order to reach a CERCLA-quality cleanup at the site.
- In May 2016, MARSH entered into VCC 16-5858-RP with SCDHEC, which involved the assessment phase of work for the PCP incident.
- In 2016 South Carolina Department of Transportation (SCDOT) agreed to relocate the storm water drain line which traverses the site and re-route the line within the road right-of-way.



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- In October 2016 a second bio-sparge pilot test was initiated to further evaluate the technology as a viable remedy for reducing PCP concentrations. The pilot test was modified in 2018, to include five additional bio-sparge injection wells. Pilot testing continues to date.
- Between 1998 and 2019, multiple additional soil and groundwater assessment activities to refine an understanding of the source, nature and extent of PCP contamination at the site.

The VCC 16-5858-RP, which covers the PCP incident, is the subject of this investigation report.

### 2.4 PCP Abatement History

MARSH reported that the use of PCP at the facility was discontinued sometime around 1986. The replacement wood-treatment process products do not contain PCP and were reportedly biodegradable. A concrete pad was constructed beneath the Green Chain Area conveyor and a portion of the temporary wood drying/storage area sometime around 1987 to 1988. The concrete drip pad beneath the Green Chain was reportedly designed to channel residual wood treatment chemical to a sump pump where excess liquids were pumped back into a storage unit in the dip tank area. These facility improvements were designed to reduce the potential for future releases of dip tank wood treatment chemicals to the ground surface. Abatement efforts such as in-situ soil remediation and/or soil removal actions were not initiated due to the absence of reported concentrations of PCP in soil samples within the Green Chain area and treated wood storage areas. Sawmill operations and associated non-PCP wood treatment activities ceased in December 2007. The sawmill building and Green Chain Area were subsequently demolished.

As discussed elsewhere herein, S&ME initiated bio-sparge pilot testing to examine the potential effectiveness of the methodology for the reduction of PCP in shallow groundwater. The bio-sparge pilot tests conducted reduced PCP concentrations in shallow groundwater within the test areas.

### 2.5 Constituents of Interest

Historic operations at the site included treatment of lumber for use in cabinet manufacturing. Green lumber freshly cut from logs moved from the sawmill by conveyor into what was referred to as the Green Chain Area. In this area, a chain conveyor moved lumber through a dip tank where the lumber was momentarily submerged, brought above the chemical bath, and allowed to drip dry. There was greater than 100 feet of conveyor chain drying area. The treated lumber was then manually removed from the chain conveyor and stacked on a concrete pad adjacent to the conveyor. The stacks of lumber were then kiln dried for use in the manufacturing operations.

MARSH reported that historic Green Chain Area operations used Permatox 10-S and Kop-Coat Inc. NP-1 in the wood treatment process. Permatox 10-S reportedly contains 25% to 35% (by weight), sodium PCP which is classified by the United States Environmental Protection Agency (EPA) as a hazardous waste (Hazardous Waste Code = F027). Use of PCP containing products was discontinued in 1986 prior to EPA listing certain wood preserving wastes as hazardous under RCRA in 1990 and promulgation of RCRA regulations of drip pads in 1991.

Safety Data Sheets for Permatox 10-S listed sodium tetraborax (borax) and aliphatic hydrocarbon solvents (mineral spirits) as additional constituents. Treatment with Permatox 10-C was performed for the purpose of preventing mold and insect infestation of cut lumber. MARSH is not aware of any historic site use of wood-preservatives with



formulations involving metals, such as arsenic, chromium, copper commonly used by industries performing other types of wood treatment.

The following provides a summary of several physical and chemical characteristics of PCP.

- Specific gravity = 1.98 (which makes pure pentachlorophenol heavier than water, which has a specific gravity of 1.00)
- Solubility = 0.001% (relatively insoluble)
- Pentachlorophenol is a biodegradable compound that has a reported half-life of weeks to months.

The assessment conducted identified no other constituents of interest (COI).

## 3.0 Geology and Hydrogeology

### 3.1 Geology

The subject site is located within the Atlantic Coastal Plain Physiographic Province. The coastal plain is a gently rolling flat region underlain by a wedge of unconsolidated to semi-consolidated, predominantly clastic sedimentary rocks that range in age from Cretaceous to Holocene. The sedimentary package thickens seaward from a feather edge at their up-dip limit.

Soils in this region are generally interbedded silts, sands, and clays that have been deposited during successive advances and retreats of the ocean over the past several million years. The marine deposits located near rivers and creeks have been eroded and may be overlain by alluvial deposits.

The town of Pamplico lies on one of a series of nearly level beach terraces formed in the relatively recent geologic past. These terraces have been extensively mapped and are generally identified based on surface elevation. Downtown Pamplico and the surrounding area were mapped as part of the Wicomico Terrace. Terrace deposits are typically 40 to 50 feet in thickness and overlie more ancient, consolidated or lithified strata below. The terrace soils are typically characterized by relatively sandy soils near the southeast margin of the terrace. The soils become increasingly clayey in composition proceeding to the northeast, toward the upper margin of the terrace, reflecting an archaic back-bay depositional deposit.

### 3.2 Hydrogeology

The surficial aquifer is the saturated zone that underlies the land surface and is generally very shallow in the region. It is the first aquifer to receive recharge from precipitation. This recharge water is stored in the surface aquifer as the groundwater migrates toward local discharge points (streams, lakes, or rivers). A portion of the groundwater in the surficial aquifer migrates vertically to recharge deeper, confined to semi-confined aquifers. On average, only a fraction of the surficial aquifer recharge reaches the deeper aquifers. This often reflects the influence of confining and semi-confining layers, and the substantial amount of time it takes for groundwater to reach these deeper units. The deeper aquifers tend to be less susceptible to contamination from the surface; therefore, they are more often used in the region as potable water sources.



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Topography is a major influence on regional groundwater flow in Coastal Plain aquifers. Groundwater originates as recharge from precipitation in aquifer outcrop areas. The elevation of the recharge areas, the degree of incisement of streams, and the location and extent of lowland areas largely determines the shallow groundwater flow patterns. Streams and swampy lowland areas are places where groundwater discharges either as base flow or diffuse upward leakage. Based upon the topography of the subject site, groundwater flow is anticipated to mimic topography, flowing down dip, perpendicular to topographic contour lines. On this basis, the direction of groundwater flow at the site is generally to the west/southwest toward the adjacent unnamed tributary of Big Swamp Branch. Groundwater elevation data collected during multiple prior groundwater monitoring events indicated similar shallow groundwater flow directions.

## 4.0 Water Well Survey

Groundwater represent the primary media impacted by PCP. The water table aquifer at the site is not known to be used as an underground source of drinking water (USDW). In general, the Black Creek unit is more commonly used as a USDW in the Pamplico area. As discussed in Section 5.0, a clay-rich layer underlies the dissolved PCP plume at depths ranging from 13 feet below grade to 28 feet below grade, which limited vertical migration of PCP.

Law Engineering conducted a water supply well survey in 1993. S&ME completed water well receptor updates in 1999 and 2016. The surveys indicated that the Town of Pamplico utilizes three wells for the potable water system. Well No.1 is located at River Road and Lewis Road, approximately 0.85 mile to the east southeast of the site, Well No. 2 is located at Highway 51 in Hyman, approximately 1.75 miles to the west of the subject site, and Well No. 3 is located at the corner of Trade Street and First Avenue approximately 0.46 mile to the southeast of the site. Well No. 1 and Well No. 2 are the primary wells used and the system rotates these wells off and on for rest time. Well No. 3 is reportedly active but only used as a backup. The Town of Pamplico provides water to residents and businesses within the Town limits. The Town's wells draw water from the deeper aquifer that is substantially deeper than the PCP impacted surficial aquifer at the MARSH site. Given that potable water is provided by the Town of Pamplico, the potential future use of the shallow aquifer in the immediate vicinity of MARSH as a drinking water source is presumed to be low.

**Figure 4** depicts the approximate location of water wells identified during the water well receptor survey update. The well identification numbers shown on **Figure 4** are keyed to information presented in **Table 1**. Water wells with MAP ID# FLO-1 through FLO-6 are located north of the site along Marsh Road represent rural residential properties that are located outside of the Pamplico Town limits. Wells FLO-2 through FLO-6 are located on the opposite side of the unnamed tributary to Big Swamp Branch. Three of the seven water wells listed in **Table 1** were deeper water wells. No well depth information was uncovered for the remaining four water wells listed in **Table 1**.

Historically, MARSH used an on-site water well solely to provide water for the facility's boiler and to provide water used to spray on stored logs to maintain moisture prior to processing the logs in the sawmill. The well is located adjacent to the boiler room. The on-site water supply well water was tested by S&ME numerous times, with analytical results consistently reporting no detectable concentrations of compounds on the Method 8270, acid extractable, Priority Pollutant List. Closure of the sawmill operations eliminated the need to spray water on stored logs. MARSH no longer operates the boiler; therefore, the on-site water well has been out of use for several years, and the well pump is currently inoperable.



Discharges of PCP impacted groundwater to surface waters represents a potential additional pathway to receptors. An unnamed tributary of the Big Swamp Branch traverses southern and western portions of the site. A segment of this tributary flows in a ditch in a region that is down-gradient of the PCP contaminant plume. A segment of the tributary also flows within the new storm drain conduit that follows a portion of the site perimeter along Marsh Road / N. Walnut Street and E. 6<sup>th</sup> Avenue. A relatively short segment of the tributary's open channel flow is located west of the site and represents an area of expected discharge for the water table aquifer. Section 5.5 provides a discussion of surface water quality monitoring for potential PCP impacts.

## 5.0 Methods

In 1992, Law Engineering discovered PCP in shallow groundwater beneath a portion of the site. Beginning in 1998, S&ME conducted additional site investigations to delineate the vertical and horizontal extent of the PCP groundwater contaminant plume. Recognizing the potential significance of stratigraphy on aspects of contaminant fate and transport, the assessment activities included a detailed evaluation of site stratigraphy. The collected stratigraphic data evidenced the presence of a clay-rich layer beneath portions of the site. Soil, groundwater, and surface water sampling were conducted to delineate the extent of impacts to potentially impacted media. Long term groundwater monitoring was conducted to support the potential for natural attenuation of PC and to demonstrate the stability of the groundwater plume. Assessment data was also collected to aid in evaluations of remedial alternatives for addressing the PCP contamination at the subject site.

### 5.1 Subsurface Stratigraphy

In 1998, it was recognized that the stratigraphy of the site's coastal plain sediments could influence migration and distribution of PCP in the water table aquifer. The 1993 Law Engineering investigations focused primarily on the water table aquifer, with only one boring extended deeper than 20 feet. In 1999, S&ME utilized direct push macro core sampling tools to collect soil cores for geologic descriptions at 33 probe locations. Soil core borings were generally shallow, typically extending to depths of ranging from approximately 13 feet to 29 feet below land surface (bls.), with care taken to minimize the creations of conduits through potential confining units.

Between 2005 and 2006, 11 additional probes were completed to refine the mapping of the top of the clay-rich layer. Soil samples were collected at each boring and described by a geologist. The presence or absence of the targeted clay-rich unit was noted, along with the depth to the top of the clay and the thickness of the clay unit. The assessment included collection of soil samples of the clay-rich unit at boring locations DS-1, DS-2, DS-3, DS-3A, and GP-40 for grain size analysis. The locations of soil borings and direct-push borings completed for this site assessment are depicted on **Figure 5**. The total depths for direct push borings and information regarding the clay-rich layer encountered are summarized in **Table 2**.

Observations made of soil cores obtained characterize the upper most sediments as primarily layers of silts, clays, clayey silts, sandy silts, and silty sands. Indications of distinct lateral continuity of the upper-most lithologies were not recognized between the investigated boring locations.





## 5.2 Soil Sampling and Analyses

Soil assessment activities were conducted by Law Engineering in 1992 and 1993. During January 1992, Law Engineering completed four hollow-stem auger borings (B-1, B-2, B-3 and B-4) and four shallow hand-auger boring (e.g. SS-1, SS-2, SS-3, and SS-4) to initiate an investigation into potential soil impacts. The collected soil samples were submitted for analysis by Method 8270 for the detection of SVOCs. During October 1993, Law Engineering completed four additional hand-auger borings (e.g. AS-5, AS-6, AS-7 & AS-8) in the Green Chain Area to aid in the delineation of source area soil impacts. At each of the four soil boring locations, a soil sample collected one foot below the ground surface was submitted for laboratory analyses according to Method 8270 for SVOCs and for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury).

In 2016, SCDHEC requested that the VCC assessment include the collection of a limited number of soil samples to further assess soil impacts in the former Green Chain area. Following termination of sawmill operations in 2007, the sawmill building and Green Chain concrete pad were removed. These site changes made it practical to obtain soil samples from areas previously beneath the Green Chain and conclude assessment of source area soils as a secondary source of PCP to the underlying groundwater.

S&ME collected additional soil samples during 2016, with a focus on identifying PCP soil impacts, as well as, assessing soil samples for plausible evidence of soil impacts commonly associated with other wood treatment methods. A broader assessment of site-specific naturally occurring metal concentrations was not conducted.

In September of 2016, soil sampling in the former Green Chain Area was conducted utilizing direct push drilling techniques. Three soil borings (GC-1, GC-2 and GC-3) were completed along the alignment of the former Green Chain conveyor, and one soil boring (GC-4) was completed in the adjacent former treated wood stacking area. The samples were collected by advancing the direct push sampler, as needed to collect continuous soil sample cores down to approximately six feet below land surface (bls). At each boring location, a surficial sample was collected from approximately zero to one-foot bls, and a subsurface sample was collected from approximately 5.5 to six feet bls. The soils samples from the designated depths were placed in laboratory prepared containers and placed in a cooler with ice for shipment to the analytical laboratory. Chain of Custody documentation accompanied the samples to the laboratory. Each of the soil samples was analyzed for Target Analyte Metals (TAL Metals) by various methods and SVOCs by EPA Method 8270.

The locations of Law Engineering and S&ME soil borings are depicted on **Figure 5**.

## 5.3 Groundwater Sampling and Analyses

Assessment of the extent of groundwater impacts included collection of samples using direct push discrete interval sampling tools and samples obtained from permanent monitoring wells. Considering the potential for PCP to sink in groundwater, the groundwater quality sampling strategies employed targeted collection of groundwater samples just above the clay-rich layer underlying the water table aquifer, with fewer samples collected below the clay-rich layer to assess the vertical extent. The VCC assessment focused on delineation of PCP in groundwater. SCDHEC's academic concern regarding the potential presence of metals associated with other forms of wood treatment, in site groundwater, was also assessed. The locations of monitoring wells and direct-push groundwater sample locations are provided on **Figure 6**.



### 5.3.1 *Direct Push Groundwater Sampling*

The use of a direct push discrete interval sampling tool permitted the collection of numerous groundwater quality samples within relatively short periods of time. The tool permitted the collection of groundwater quality samples representative of discrete four-foot intervals.

In 1999, S&ME utilized the discrete interval sampling tool to collect groundwater samples at 21 probe test locations, during a total of four separate phases of investigation. Select intervals were chosen for groundwater sample collection and analysis based upon the observed stratigraphic sequences, applying the hypothesis that PCP could sink within the upper aquifer due to density and preferably migrate down dip along the tops of hydraulically more restrictive stratigraphic units.

During 2006, the direct push macrocore tool was used to collect continuous cores at locations DS-1, DS-2, and DS-3D for geologic description and the identification of the previously recognized clay unit. The probe was advanced from the ground surface to select depths below the clay-rich unit for the purpose of collecting representative groundwater samples. At each probe location, a representative groundwater sample was collected for laboratory analysis using the discrete interval sampling tool. The collected samples were transferred into laboratory-prepared containers and placed on ice and transported to the analytical laboratory using proper chain-of-custody procedures. The collected groundwater samples were submitted for laboratory analysis for SVOCs by Method 8270 (acid extractables only). A licensed South Carolina well driller properly abandoned each boring following completion.

On October 31, 2017, direct push tooling was used to collect a grab groundwater sample from the lower portion of the water table aquifer at sample location GWS-1, located between monitoring well MW-3A and monitoring well MW-10. The collected sample was submitted for laboratory analysis for SVOCs by Method 8270. A licensed South Carolina well driller properly abandoned the boring following completion.

### 5.3.2 *Monitoring Well Sampling*

The groundwater sample collection methods utilized by Law Engineering involved sampling wells with bailers. Beginning in 1998, S&ME initiated groundwater sample collection using peristaltic pumps. The open end of polyethylene tubing attached to silicone tubing at the pump was positioned in the lowermost portion of well screen interval. Approximately three well volumes were purged prior to sample collection. Beginning in 2016, sampling methods were modified to include low-flow sampling protocols. Accordingly, each well was purged with a peristaltic pump using low flow rates. During purging, groundwater was monitored for pH, temperature, conductivity, dissolved oxygen (DO), oxidation reduction potential (ORP) and turbidity, using a flow-through cell and YSI Pro (or equivalent) meter. At a minimum, the time interval between field parameter measurements was the time required for one complete exchange of the volume of water in the flow-through cell. Sample collection generally commenced when changes in those readings fluctuated within  $\pm 10\%$  or less. For turbidity, a target value of less than or equal to 10 Nephelometric Turbidity Units (NTU) was used as a guide for sample collection. Professional judgement was utilized in cases where the target NTU value was not achieved but other field parameter readings were stable. **Table 3** provides a summary of well construction details.

The vast majority of groundwater samples collected as part of the assessment were analyzed for SVOCs by Method 8270, with PCP as the primary consistent of concern. Additional analytes and parameters were assessed





when relevant, exclusively as indicator parameters for monitored natural attenuation and/or indicators of biologic degradation of PCP.

It is documented that Method 8270 cannot achieve the Maximum Contaminant Level (MCL) for PCP established at 1 µg/L. Research of alternate analytical methods indicated that Method 8151 could achieve a reporting limit of 1 µg/L or less for PCP; however, this analytical test method does not report other potential PCP breakdown compounds. Considering the prevailing project monitoring goals, Method 8270 was historically considered appropriate for assessing the extent of PCP and potential PCP breakdown compounds; therefore, it was specified in each approved VCC Work Plan. It was recognized that substitution of analytical Method 8151 for Method 8270 during assessment and pilot testing would introduce an extraneous variable into the pilot test study.

Recognizing that at the end of pilot test and prior to selection of the final remedy, the assessment must delineate the extent of the PCP plume to the level of the PCP MCL; a select number of monitoring wells, mostly along the horizontal limits of the PCP plume were initially chosen for the collection of samples for analyses by both Method 8270 and Method 8151. The subsequent groundwater monitoring event incorporated groundwater samples collected and submitted for analyses by both Method 8270 and Method 8151 for the assessment of extents of PCP.

To resolve SCDHEC concerns regarding the potential presence of metals associated with other forms of wood treatment, monitoring wells MW-3A, MW-14, and BSW-2 were selected for the assessment of metals in groundwater. Located down-gradient of the former Green Chain, monitoring well MW-3A represented an area of historically high PCP concentrations. Monitoring well BSW-2 is located between the Green Chain Area and monitoring well MW-3. Monitoring well MW-14 represented another area of higher dissolved PCP concentration in an area where the clay-rich layer forms a notable topographic low.

On February 21, 2017, groundwater samples were obtained from monitoring wells MW-3A, MW-14, and BSW-2. The collected samples were analyzed for TAL Metals. Due to unresolvable higher than normal turbidity observed at monitoring well MW-14, the wells was replaced. On June 7, 2017, a groundwater sample was collected from replacement monitoring well MW-14A and analyzed for TAL Metals.

## **5.4 Shallow Groundwater Flow and Select Aquifer Parameters**

### *5.4.1 Shallow Groundwater Flow Direction*

As previously discussed herein, topography is a major influence on regional groundwater flow in Coastal Plain aquifers. Groundwater originates as recharge from precipitation in aquifer outcrop areas. The elevation of recharge areas, the degree of incisement of streams, and the location and extent of lowland areas largely determines the groundwater flow patterns. Streams and swampy lowland areas are places where groundwater discharges either as base flow or diffuse upward as leakage. Based upon the topography, groundwater flow is anticipated to mimic surface topography, flowing down dip, perpendicular to topographic contour lines. On this basis, shallow groundwater flow within the study area was expected to migrate southwest, toward the adjacent unnamed tributary of Big Swamp Branch.

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During each groundwater monitoring event, depth to groundwater was measured utilizing an electric water level indicator. The depth to groundwater was measured from the established top of casing elevation and was recorded to the nearest 0.01-foot. The depth to groundwater data was subtracted from the top of casing elevation to provide a relative groundwater elevation. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevations for each well gauged, which is then utilized in the development of drawings depicting contours of the calculated groundwater elevation data obtained. Groundwater contour maps were relied upon to predict shallow groundwater flow patterns.

### 5.4.2 *Hydraulic Conductivity and Seepage Velocity Estimates*

In-situ hydraulic conductivity tests, as rising head slug tests were performed by S&ME on wells MW-1, MW-3A, MW-10, MW-17, MW-22, and MW-23. The test results were analyzed using the Bouwer and Rice method, used to calculate hydraulic conductivity values for water table aquifer at these locations.

The groundwater elevations calculated for the March 14, 2018, monitoring event were utilized to assess local groundwater gradients in the vicinity of monitoring wells assessed for in-situ hydraulic conductivity. This monitoring event was selected, given that it involved gauging depths to groundwater at monitoring wells with hydraulic conductivity data. The groundwater gradient at each well was calculated assuming a constant groundwater gradient along the flow line between adjacent groundwater elevation contours or between the well and the nearest contour. Groundwater flow lines were drawn through each well based upon the groundwater elevation data collected during this monitoring event.

Calculated hydraulic conductivity estimates and groundwater gradient values, plus estimated effective porosity values were used in the preparation of groundwater seepage velocity calculations. The data collected was used to estimate the range of groundwater seepage velocities for the water table aquifer in the study area.

## 5.5 **Surface Water Sampling and Analyses**

The collection of surface water samples at points along the unnamed tributary of the Big Swamp Branch, located along the southern and western portions of the site began with the December 19, 2005 monitoring event. On site, a segment of the stream flows within a storm drain conduit and other segments exist as open channel flow. A portion of the tributary's open channel flow is down-gradient of the PCP plume, an area of expected shallow groundwater discharge. The surface water sample location SW-1 represents the water quality up-gradient of the PCP contaminant plume. Surface water sample location SW-2 represent surface water quality near the expected discharge area for the shallow groundwater PCP plume. Sample location SW-3 is approximately 200 feet down stream of location SW-2, just prior to the stream leaving the site. A fourth surface water sample location, referred to as SW-4, was added to the assessment on June 30, 2013. Sample location SW-4 represents surface water quality at the point water leaves the piped stream segment, down-stream of sample location SW-1. The surface water sample locations are shown in **Figure 6**

Surface water samples were collected by carefully dipping a sample container into the surface water. Upon collection, each sample was transferred in laboratory prepared containers, placed in a cooler with ice, and submitted to a subcontract laboratory for analysis according to Method 8270.



## 6.0 Results

### 6.1 Site Stratigraphy

The uppermost stratigraphic unit at the site consist primarily of an unconsolidated package of sediments primarily classified as silts, clays, clayey silts, sandy silts, and silty sands. The lithologic descriptions do not suggest any distinct lateral continuity of most lithologies. The uppermost stratigraphic unit overlies a relatively continuous clay-rich layer commonly occurring at approximately  $\pm 18$  feet below land surface (bls.), which overlies a distinct gray semi-consolidated, calcareous, fossiliferous, silty sand unit. **Appendix I** contains geologic cross-sections prepared for previously submitted assessment reports, depicting the stratigraphy of the study area.

The assessment of the clay-rich layer verified lateral continuity of the layer beneath the study area. The thickness of the clay-rich layer varies, and it appears to pinch and swell on a local scale as one might expect in an archaic *back-bay* sedimentary deposit. The clay-rich layer does exhibit some variability in clay and sand content. In some locations the material may be described as a clayey sand rather than a sandy clay. A review of the particle size analyses preformed suggest that some samples contained up to 45% fine-grained sand (e.g.  $\sim 0.425$  mm to  $\sim 0.075$  mm). This holds true for samples that were field textured as somewhat plastic and could be rolled into thin ribbons, suggesting a clay soil type. The particle size analysis data suggested that field-based descriptions may tend to underestimate the fine sand content in the clay-rich layer beneath the study area.

In the studied area the clay-rich layer forms the bottom of the water table aquifer. Based upon groundwater analytical data obtained during the 1999 investigations, the clay-rich layer appeared to limit the vertical migration of dissolved phase PCP in the groundwater beneath the studied area. The site conceptual model at that time considered that undulations in the top of the clay-rich layer could influence the migration of dissolved-phase PCP in the water table aquifer, possibly providing migration pathways that might deviated from those expected based solely on hydraulic gradients.

The approximate elevations of the top of clay-rich layer was plotted and found to exhibit varying topography, as depicted in **Figure 7**. Two noteworthy low points in the top of the clay-rich layer were discovered. One in the vicinity of monitoring well MW-1 at the Green Chain Area and the other in the vicinity of monitoring well MW-13A. As discussed later in Section 6.3.2, the distribution of groundwater PCP concentrations may corroborate the existence of a preferential flow path associated with the slope(s) of the top of the clay-rich layer. For example, typical groundwater gradients observed would infer migration from the Green Chain Area, generally westward toward the unnamed tributary to Big Swamp Branch. Deviating from this were the relatively high PCP concentrations observed in the vicinity of monitoring well MW-14/MW-14A, located somewhat cross-gradient of anticipate groundwater flow based on observed piezometric heads. It was theorized that the PCP hot-spot which occurred at monitoring well MW-14/MW-14A may be due to some PCP migrating in groundwater toward the topographic low in the top of clay-rich layer near monitoring well MW-13.

## 6.2 Soil Sample Analytical Results

### 6.2.1 Metals

The soil sample analytical results were compared to the Residential and Industrial, Regional Screening Levels (RSL) and to the protection of groundwater site screening levels (Groundwater SSLs) published by the EPA and commonly used by SCDHEC to evaluate contaminant concentrations at VCC sites.

**Table 4** provides a summary of the 1993 Law Engineer soil sample analytical for the 8-RCRA Metals (totals) and provides for comparison corresponding RSLs. Barium, chromium, lead, mercury, and silver were detected in the soil at one or more of the sampled locations. The detected concentrations do not exceed listed Residential Soil or Industrial Soil screening levels.

MARSH is not aware of any historic site use of wood-preservatives with formulations based on metals. Based upon the Safety Data Sheets for former wood treatment products used on site, none of the metals detected in 1993 are listed as constituents of the former wood treatment products. Based upon the available information regarding the wood treatment processes and the analytical results received, S&ME concluded that detected total metal concentrations likely represent naturally occurring levels.

Limited soil sampling was performed in 2016, as requested by SCDHEC. **Table 5** provides a summary of the metals (totals) and their concentrations detected in each soil sample obtained in September 2016. For comparison, the table also provides corresponding EPA RSLs, if listed. The laboratory analytical results were screened against EPA RSL for both hypothetical industrial and residential receptors. The following provides a summary of reported concentrations greater than one or more of the referenced soil screening levels.

- Arsenic concentration reported for each near surface soil interval (0.5-1-foot bls.) was greater than the corresponding Residential Soil screening level but less than the Industrial Soil screening level. The arsenic concentration reported for deeper soil interval (5.5 – six feet bls.) sample GC-2-6, was also greater than the Residential Soil screening level.
- Arsenic concentrations reported for the deeper soil interval at sample locations GC-3-6 and GC-4-6, detected arsenic concentrations slightly greater than the corresponding Industrial Soil screening level.

It is important to note that EPA RSLs are risk-based screening concentrations and EPA indicates that they not necessarily cleanup standards and should not be applied for that purpose.

Since the soil assessment did not include an assessment of site-specific naturally occurring metal concentrations, the reported total metal concentrations were compared with background concentrations reported in *Elements In South Carolina Inferred Background Soil and Stream Sediment Samples*, by Judy Conova 1999. The total metal concentrations reported in **Table 4 and Table 5** generally fell within the ranges of published background concentrations for coastal plain sediments, or state-wide concentrations if a coastal plain reference was not published. Furthermore, the total metals concentrations reported for soil samples do not provide plausible evidence of soil impacted by metals associated with other common wood treatment methods. This finding is consistent with known historic site use activities. Acknowledging that the objective of the soil assessment was to examine the Green Chain area for evidence of soil impacted by metals associated with other common wood



treatment methods, no additional assessment of total metals in soils was warranted or preformed. SCDHEC has agreed with this finding. **Figure 5** depict the soil sample locations.

### 6.2.2 *Semi-Volatile Organic Compounds*

Law Engineering data summarized in **Table 4** and **Table 6** documents analytical results of soil samples analyzed for SVOCs. PCP was not detected in the samples collected. As summarized in **Table 6**, several tentatively identified compounds (TICs) were reported; however, none of the TICs have corresponding RSLs.

In 2007, the sawmill building and Green Chain concrete pad were removed. To conclude the assessment of soils in the Green Chain area as secondary source of PCP to the underlying groundwater, eight soil samples were collected during September 2016. **Table 7** provides a summary of 2016 analytical results for SVOCs by Method 8270 and provides corresponding RSLs for comparison.

- PCP was detected in sample GC-2-1, representing the 0.5 to one foot bls interval at probe location GC-2. The detected concentration was less than the corresponding Industrial Soil screening level and greater than the corresponding Residential Soil screening level. PCP was not detected in the deeper sample (GC-2-6) representing 5.5 feet to six feet bls. Note that probe location GC-2 is in close proximity of monitoring well MW-1, which has historically reported PCP concentrations in the groundwater as less than the method reporting limit.
- 2, 3, 4, 6-Tetrachlorophenol was detected in sample GC-1-1, representing the 0.5 to one foot bls interval at probe location GC-1. The detected concentration was greater than the corresponding Residential Soil screening level but less than the Industrial Soil screening level. 2, 3, 4, 6-Tetrachlorophenol was not detected in the deeper sample (GC-2-6) representing 5.5 feet to six feet bls. This compound is a probable first-order PCP degradation daughter compound.
- No other SVOCs were detected in the remaining soil samples.

Probe location GC-1 was at the former PCP dip tank and probe location GC-2 was approximately 68 feet northwest of the former dip tank, down the alignment of the former Green Chain drip pad. Based on the sampling conducted, the extent of soil impacted by SVOCs at concentrations greater than corresponding Residential Soil screening levels but less than the Industrial Soil screening levels is limited. Given the paucity of SVOC detections in soil samples, the industrial land use of the site, and the absence of a SVOC concentration greater than the corresponding EPA RSL for Industrial Soil, a drawing depicting the SVOC detections was not prepared. Soil sample locations are depicted on **Figure 5**.

## 6.3 **Groundwater Analytical Results**

### 6.3.1 *Metals*

Analytical results samples obtained from monitoring wells MW-3A, BSW-2, and MW-14 during February 2017 are summarized in **Table 8**. The analytical results were compared with EPA Region IV, Regional Screening Levels for Tap water (RSL –Tap Water) and the EPA Maximum Contaminant Levels (MCLs). Analytical results for monitoring well MW-3A and BSW-2 reported no TAL Metals concentration greater than or equal to the corresponding RLS-Tap Water screening levels or MCLs. Whereas, the detected concentrations for aluminum, arsenic, lead and

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mercury at monitoring well MW-14 were greater than the RSL for Tap Water. The detected concentration for lead at well MW-14 was greater than the MCL for lead. S&ME concluded that the relatively high field turbidity level reported for monitoring well MW-14 may have induced a false positive bias into the analytical results. Based on this hypothesis, retesting was performed prior to reliance on the analytical results for site decision making.

Monitoring well MW-14 was replaced with monitoring well MW-14A, capable of producing groundwater samples with a turbidity considered acceptable at <10 NTU. Analytical results for the June 7, 2017, sampling of monitoring well MW-14A reported concentrations for each detected metal that were lower than those reported at monitoring well MW-14 in February 2017. Analytical results for a duplicate sample obtained at monitoring well MW-14A on June 7, 2017, reported similar concentrations for each metal. No metals concentration greater than or equal to the corresponding RLS-Tap Water screening levels or MCLs were reported. Of particular note was the lead (total) concentration reported as less than the reporting limit of 5 micrograms per liter ( $\mu\text{g/L}$ ) and less than the corresponding MCL. Weighing all relevant factors, S&ME considers the February 2017 analytical results for monitoring well MW-14 invalid for decision making due to high sample turbidity. The June 7, 2017 analytical result were considered valid for site decision making.

Based on the analytical results obtained for groundwater samples collected from monitoring wells located in areas of known current or historic high PCP concentrations, TAL metals are not considered groundwater constituents of potential concern.

### 6.3.2 *Semi-Volatile Organics*

**Table 9** provides a summary of the SVOC groundwater analytical results obtained from direct push grab samples obtained during 1999. They provided a solid basis for the preliminary vertical and horizontal delineation of the PCP plume. **Table 10** provides a summary of the SVOC groundwater analytical results for the most recent sampling events completed during July 2019 and October 29, 2019. This table also includes some historic analytical results for select monitoring wells with sampling conducted during the VCC assessment phases. **Table 11** provides additional historic groundwater data dating back into 1992.

For the July 2019 monitoring event analytical results for SVOCs by Method 8270 reported the following detections:

- PCP was detected in monitoring well MW-15 at concentrations of 46.6  $\mu\text{g/L}$ .
- PCP was detected in monitoring well MW-22 at concentrations of 83.8  $\mu\text{g/L}$ .
- PCP was detected in monitoring well MW-25 at concentrations of 40.2  $\mu\text{g/L}$ .
- PCP was detected in monitoring well MW-28 at concentrations of 371  $\mu\text{g/L}$ .

**Table 10** also provides a summary of the PCP results by Method 8151, which provides a detection limit of less than 1  $\mu\text{g/L}$  for PCP. For most sampled locations where PCP was detected, Method 8151 reported an equal or lower PCP concentration when compared with the results obtained by Method 8270. Use of Method 8151 began in February 2019; thus, the data set is very small compared with the Method 8270 data set. An informal comparison of PCP concentrations reported by both methods indicates general agreement between the two differing methods, with some exceptions. On October 29, 2019, monitoring wells MW-10 and MW-15 were resampled and submitted for analysis by Method 8270 and Method 8151, to examine an apparent inconsistency





between the two methods. For monitoring well MW-10, the October 2019 PCP concentration reported by Method 8151 agreed with the July 2019 PCP concentration, whereas the PCP was reported as not detected by Method 8270 for both events. For monitoring well MW-15, the October 2019 PCP analytical results by Method 8151 verified the non-detection of PCP in July 2019, suggesting that the July 2109 PCP concentration of 46.6 µg/L by Method 8270 was an anomaly. **Appendix II** provides the laboratory analytical reports for the July 2019 and October 2019 groundwater monitoring events.

The 2019 groundwater analytical data for Method 8151 defined the horizontal extent of PCP. PCP was reported as less than 1 µg/L by Method 8151 at monitoring wells MW-3, MW-11, MW-13A, MW-14, MW-15, MW-16, MW-18B, MW-19, MW-20, MW-21, MW-23, MW-24, and MW-26 which delimited the plume to the subject site. The water table aquifer impacts are delimited on-site and do not reach the on-site surface water receptor, Big Swamp Branch, as indicated by analytical results for monitoring well MW-18B. **Figure 8** depicts a conservative estimate of a 1 µg/L PCP isoconcentration line for the PCP plume, based on the Method 8151 analytical results. **Figure 9** and **Figure 10** provides cross-sections A-A' and B-B' depicting subsurface stratigraphy and recent groundwater PCP concentrations at each monitoring well shown.

The vertical extent of PCP in groundwater was previously defined by analytical data for monitoring well MW-8, and grab samples obtained from direct push tools at sample locations GP-1-30, GP-2-24, DS-1, DS-2, and DS-3D. The laterally continuous clay-rich layer at depth is thought to reasonably restrict the vertical migration of the contaminant below this layer.

## 6.4 Shallow Groundwater Flow and Migration

### 6.4.1 *Estimated Groundwater Flow Direction*

As previously discussed herein, topography is a major influence on regional groundwater flow in Coastal Plain aquifers. Groundwater originates as recharge from precipitation. The elevation of recharge areas, the degree of incisement of streams, and the location and extent of lowland areas largely determines the groundwater flow patterns. Streams and swampy lowland areas are places where groundwater discharges either as base flow or diffuse upward as leakage. Based upon the topography of the subject site, groundwater flow is anticipated to mimic surface topography, flowing down dip, perpendicular to topographic contour lines. On this basis, the anticipated direction of groundwater within the study area was toward the southwest, toward the adjacent unnamed tributary of Big Swamp Branch.

During each groundwater monitoring event, depth to groundwater data was collected. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevations at the monitoring wells. **Table 12** provides a summary of the current and historic groundwater elevation data. **Figure 11** depicts the groundwater surface contour map prepared using the annual monitoring event data collected in February 2019. The groundwater contours suggest that groundwater flow in the water table aquifer would generally migrate toward the west. This flow direction is generally consistent most prior monitoring events. Groundwater elevation contour drawings prepared for the numerous monitoring events have shown some variations in estimated flow directions, but none are considered significant.



#### 6.4.2 *Hydraulic Conductivity and Seepage Velocity Estimates*

In situ hydraulic conductivity tests were performed by S&ME on wells MW-1, MW-3A, MW-10, MW-17, MW-22, and MW-23. These rising head slug test results were analyzed using the Bouwer and Rice method, used to calculate hydraulic conductivity values for water table aquifer at these locations. The data from these tests yielded hydraulic conductivity values summarized in **Table 13**. The hydraulic conductivity values obtained ranging from 0.245 feet/day at monitoring well MW-3A to 3.183 feet/day at monitoring well MW-13.

The groundwater elevations calculated for the March 14, 2018, monitoring event were utilized to assess local groundwater gradients in the vicinity of monitoring wells assessed for hydraulic conductivity. This monitoring event was selected, given that it involved gauging depths to groundwater at most monitoring wells with hydraulic conductivity estimates. Groundwater gradients estimates are summarized in **Table 13**.

Calculated hydraulic conductivity, gradient values, and estimates of effective porosity were used to calculate seepage velocity estimates. A 30 percent effective porosity value was selected for these calculations. It is recognized that effective porosity values will vary with the various sediments that make up the water table aquifer. As summarized in **Table 13**, the calculated groundwater velocities ranged from 0.009 feet/day to 0.132 feet/day.

### 6.5 **Surface Water Analytical Results**

**Table 14** provides a summary of historic surface water analytical results. Analytical results from the February 2019 monitoring event reported no SVOCs were detected at surface water sample locations SW-1, SW-2, SW-3 and SW-4. Historically, PCP was detected in samples collected at SW-2 during the July 2006 monitoring event, and SW-3 during the July 2006 and May 2013 monitoring events. Analytical results for confirmation samples collected following these detections of PCP did not detect PCP in the samples collected.

No other targeted compounds have been detected in surface water samples collected from SW-1 through SW-4 dating back to the December 2005 sampling event. This finding is consistent with the delineation of PCP in groundwater at points up-gradient of the stream, a local groundwater discharge point.

It should be noted that a portion of the Town's storm water lines previously traversed the Marsh property, including a segment which was above the PCP groundwater plume. In 2017, the South Carolina Department of Transportation and Town of Pamplico installed new storm water lines. The new storm water line was routed along portions of East 6th Avenue and North Walnut Street, beyond the limits of the PCP groundwater plume. The old segment of the storm water line was abandoned by grouting the up-gradient and down-gradient ends, removal of remaining pipe segments, backfilling the pipe excavation with overburden soil and clean off-site soil, and compaction of soil placed in the excavation using the backhoe bucket. Relocation of the storm water lines was performed to manage a scenario of hypothetical seepage of groundwater into the storm water pipe, at pipe joints, during periods of temporary high water table typically associated with short term high rainfall events.



## 7.0 Bio-Sparge Pilot Testing

Through literature research, it was previously recognized that bio-sparging could be a viable remedial option for the reduction of PCP in shallow groundwater. Literature reviewed indicated that there are microorganisms capable of biodegrading PCP despite its toxicity with prospects better when PCP is present in lower concentrations. The success of biodegradation depends on the presence and survival of degrader microorganisms in the subsurface environment. Published literature reviewed for bio-sparging of PCP in groundwater revealed very limited details regarding expected daughter compounds and reliable indicator parameters for an aerobic degradation pathway. Accordingly, the pilot testing conducted for this project focused primarily on evaluating changes in PCP concentrations over time, localized changes in PCP distribution, and the collection of certain field and laboratory parameters representing possible bio-degradation indicators and/or indicators of potentially suitable aquifer conditions for aerobic biodegradation.

Two bio-sparge pilot tests were performed at the site. The following sections provide a brief summary of the two pilot tests. Prior assessment reports provided additional background and discussion of data received, which is not repeated in this report.

### 7.1 Summary of Bio-Sparge Pilot Test#1

During 2008, MARSH presented to SCDHEC a conceptual bio-sparge pilot test. MARSH prepared and obtained from SCDHEC a Permit to Construct one Class V.A.-I injection well for the bio-sparge pilot test. During 2009, the first pilot test was initiated in the area down-gradient of the Green Chain Area and up-gradient of monitoring well MW-3, in what was the core of the shallow groundwater PCP plume. The pilot test was designed with a focus on assessing localized changes in dissolved oxygen (DO) concentrations and PCP concentrations. During the March 2009 baseline start-up sampling event and subsequent monitoring events, groundwater analytical results for monitoring well BSW-2, located approximately 18 feet from injection point BSW-1, reported that PCP was not detected. The non-detection of PCP prevented an assessment of potential PCP concentration reductions close to the injection well, although the data verified non-detection of PCP immediately down-gradient of the Green Chain. The pilot test field data collected indicated that bio-sparging increased in-situ DO concentrations in the vicinity of the sparge well. Groundwater analytical results obtained provided no definitive evidence of bio-sparge induced migration of PCP in the shallow groundwater. It was noteworthy that since 2009, PCP concentrations declined by 98% at monitoring well MW-3, located approximately 40 feet down-gradient of injection well BSW-1. Groundwater analytical results for monitoring well MW-3 provided evidence of sustained PCP reductions at monitoring well MW-3, which persisted beyond termination of pilot test #1 in 2013. **Figure 12** depicts relevant monitoring well and injection well locations.

### 7.2 Summary of Bio-Sparge Pilot Test#2

Recognizing the success of the first long-term bio-sparge pilot test, a second bio-sparge pilot test was conducted in the region up-gradient of monitoring well MW-14, which represented a known core of the dissolved-phase PCP plume. The goal was to collect data from a long-term pilot test that could be utilized in the ensuing analysis of remedial alternatives.

The approved VCC Work Plan included this second long-term bio-sparge pilot test. For this bio-sparge pilot test, SCDHEC issued a Permit to Construct one Class V.A.-I injection well (bio-sparge well BSW-3) in accordance with

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UIC Permit #SCHE03020255M, dated June 27, 2016. Bio-sparging Pilot Test #2 was initiated on October 24, 2016, following the October 17, 2016 issuance of the permit to operate by SCDHEC.

Monitoring wells MW-10, MW-14/MW-14A, MW-15, MW-21, MW-22 and MW-23 represented the original pilot test #2 monitoring network, utilized to assess changes in groundwater PCP concentrations and the potential for localized bio-sparge induced PCP migration, with well BSW-3 as the injection well (see **Figure 12**). In addition, monitoring groundwater for SVOCs by Method 8270, groundwater samples obtained were also analyzed for alkalinity, chloride, and total organic carbon (TOC), as potential indicator parameters.

During 2017, additional monitoring wells were installed to refine delineation of the extent of PCP in groundwater in the vicinity of monitoring wells MW-14/MW-14A and MW-22 located within the core of the pilot test area. The additional assessment improved delineation of PCP within the pilot test study area, which in turn guided the decision to add five bio-sparge injection wells and revise the pilot test groundwater monitoring plan.

Based on a Work Plan approved by SCDHEC, the pilot test program was expanded to include five additional bio-sparge wells to enhance the area of groundwater treatment, manage dissolved phase PCP within the test area, and monitoring for PCP concentration changes. A new system control panel was installed, and subgrade air-lines were installed between the new bio-sparge system control panel and the new bio-sparge wells. On May 18, 2018, the Permit to Operate five new wells and to convert one existing well (BSW-3) as Class V.A.-1 wells was received from SCDHEC. On May 25, 2018, operation of the expanded bio-sparge pilot test wells system was commenced. The *Annual Water Quality Monitoring Report* dated April 24, 2018, included groundwater analytical data that provided the baseline for the expanded bio-sparge pilot test.

### 7.2.1 Summary of July 2019 Groundwater Analytical Results

**Table 10** provides a summary of analytical results and field parameters obtained for the pilot test. The following provides a brief discussion of PCP concentrations for the July 2019 monitoring event and inferred trends in PCP concentrations over time. **Appendix III** provides time vs PCP concentration graphs for select monitoring wells.

- The PCP concentration at monitoring well MW-14A remained less than the Method 8270 MDL of 3.5 µg/L, down from the 214 µg/L prior to pilot testing. Analytical results by Method 8151 reported PCP as less than 0.53 µg/L. This well is approximately 15 feet from the closest injection well.
- The PCP concentration at monitoring well MW-28 rebounded following prior declines. The most recent concentration approximates the baseline PCP concentration. Conversely, the February 2019 PCP concentration represented an estimated 57% reduction when compared with the baseline. The Method 8151 concentration for PCP was 310 µg/L, which is lower than 371 µg/L PCP reported by Method 8270. This well is approximately 30 feet north of the closest injection well.
- The PCP concentration at monitoring well MW-21 remained less than the Method 8270 MDL of 3.5 µg/L and less than the estimated 16.5 µg/L detected prior to pilot testing. The Method 8151 concentration for PCP was an estimated 0.51 µg/L. This well is approximately 46 feet north of the closest injection well.
- The PCP concentration at monitoring well MW-22 appeared to increase following the initiation of the pilot test, followed by an overall trend of declining concentrations. The July 2019 PCP concentration represents an estimated 71% reduction when compared with the concentration reported for December 12, 2016. The



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- Method 8151 concentration for PCP was 130 µg/L, which is greater than the PCP concentration reported by Method 8270. This well is approximately 68 feet east of the closest injection well.
- A persistent reduction in PCP concentrations has been observed for monitoring well MW-25. The July 2019 concentration represents an estimated 73% reduction when compared with the baseline concentration. The Method 8151 concentration for PCP was 42 µg/L, which compared favorably with the 40.2 µg/L PCP concentration reported by Method 8270. This well is 45 feet south of the closest injection well.
  - PCP was not detected at monitoring well MW-27 during the July 2019 and four prior monitoring events, which suggests a sustained decrease in the PCP concentrations. The July 2019 Method 8151 PCP concentration was 2.5 µg/L, which is less than the 3.5 µg/L MDL for PCP by Method 8270. This well is 45 feet south of the closest injection well.

Groundwater samples obtained from select monitoring wells in the vicinity of the pilot test in July 2019 were also analyzed for alkalinity, chloride, and TOC, as potential indicator parameters. The spatial distribution of concentrations for each potential indicator parameter was examined for recognizable zonal patterns, which may indicate in-situ bio-degradation or conditions favorable for biodegradation of PCP. No obvious zonal patterns for chloride and TOC were recognized. A review of recent and historic alkalinity concentrations and their spatial distribution revealed that alkalinity was lower at monitoring wells in areas of previously documented PCP impacts. Alkalinity was higher in areas beyond the PCP plume, for example monitoring wells MW-13A, MW-15, MW-18B, MW-19, MW-23, MW-24, and MW-30. Bicarbonate ( $\text{HCO}_3$ ) contributes substantially to alkalinity in groundwater. The zone of reduced alkalinity, if linked to reduced bicarbonate, may be indicative of past anaerobic bio-degradation by way of manganese reduction and/or iron reduction.

On March 14, 2018, groundwater samples were collected from monitoring wells MW-21 and MW-22 and submitted to Microbial Insights, Inc. for laboratory analyses for dechlorinating bacteria. On December 18, 2019, groundwater samples were collected from monitoring wells MW-14A and MW-22 and submitted to Microbial Insights, Inc. for laboratory analyses for dechlorinating bacteria. The analytical results indicated:

- The presence of Dehalococcoides and Desulfitobacterium in groundwater at monitoring well MW-22 on March 14, 2018,
- The presence of Dehalococcoides in groundwater at monitoring well MW-14A and Desulfitobacterium in groundwater at monitoring well MW-22 on December 18, 2019.

Extensive bacteria analyses were not part of the pilot testing program; however, the limited analytical results received were helpful and indicate that dechlorinating bacteria were present in the area of the second Pilot Test.

With regards to groundwater field parameters, bio-sparging involves increasing in-situ DO to stimulate aerobic biological activity. Based on the field data for the February 2019 monitoring event, site wide DO levels in the water table aquifer were generally less than 1 µg/L often on the order of 0.1 to 0.5 µg/L. The DO level at monitoring well MW-14A, located approximately 15 feet from injection well BSW-3 was 8.3 µg/L. Based on the available DO data, the area of influence for bio-sparge injection well BSW-3 extends greater than 15 feet from BSW-3 in the direction of monitoring well MW-14A and less than 30 feet from injection well BSW-3 in the direction of monitoring well MW-28. The observed DO levels at monitoring well MW-25 up-gradient of sparge well BSW-6, monitoring well MW-26 cross-gradient of sparge well BSW-6, and monitoring well MW-28 up-





gradient of sparge well BSW-3 have not shown anticipated increases in DO. The area of direct influence for these referenced sparge wells may be smaller than expected or have a less than uniform shapes.

### 7.2.2 *Summary of Bio-Sparge Pilot Test#2 Findings*

Analytical results received for the July 2019 monitoring event continue to suggest an overall decline in PCP concentrations in the water table aquifer in the vicinity of bio-sparge pilot test area. Observed changes in PCP concentrations over time at monitoring wells MW-14A, MW-22, MW-25, and MW-27 remain the most noteworthy indicators that the pilot test has resulted in generally consistent reductions in PCP concentrations. Analytical data for the July 2019 event suggests that PCP concentrations have been reduced to less than 1 µg/L at monitoring well MW-14A. PCP concentrations reductions of greater than 50% were indicated for monitoring wells MW-22, MW-25, and MW-27. PCP concentrations have oscillated at monitoring well MW-28, with the July 2019 analytical results suggestive of a rebound in PCP concentrations. The data collected provides no definitive indicators of bio-sparging simply displacing PCP causing it to migrate by dispersion. The 2017 assessment activities added multiple monitoring wells positioned thoughtfully at locations and distances about the sparge well network for the detection of PCP migration during the pilot.

## 8.0 Conceptual Site Model (CSM)

### 8.1 Contaminant Source, Fate, and Transport

Prior to sometime around 1986, PCP was utilized to treat saw cut green lumber as it exited the former sawmill. Treatment occurred in the dip-tank located in the Green Chain Area. The most probable location for losses of PCP to soil likely occurred at the dip tank and along the former Green Chain Area. PCP reaching the soil could leach from through the relatively thin vadose zone soils, ultimately reaching the underlying water table aquifer. Based on soil sample analytical results obtained, PCP impacts to soil were of limited extent; as a result, they represent a limited secondary source of PCP to the underlying aquifer.

Originating at the Green Chain Area, a dissolved-phase PCP should migrate with shallow groundwater beneath the site, with the unnamed tributary to Big Swamp Branch, located in the western portion of the site, the likely discharge point for the water table aquifer. Since PCP has a density greater than water, any free-phase or dissolved phase PCP could migrate vertically and/or laterally, influenced by subsurface stratigraphy and the orientation of the stratigraphic units, rather than following the direction of anticipated groundwater flow, based on pressure gradients.

The water table aquifer in the study area is composed of interbedded layers of silts, clays, clayey silts, sandy silts, and silty sands, with no distinct lateral continuity of the upper most layers. Aquifers composed of layered sediments often exhibit greater vertical than horizontal anisotropy. The water table aquifer overlies a relatively continuous clay-rich layer commonly occurring at approximately ±18 feet bls., which overlies a distinct gray semi-consolidated, calcareous, fossiliferous, silty sand unit. The clay-rich layer exhibited lateral continuity beneath the study area and forms the base of the water table aquifer. Higher vertical vs horizontal anisotropy imposed by the clay-rich layer has limited the vertical migration of PCP from the water table aquifer, into the underlying aquifer. The non-detection of PCP below the clay-rich layer supports this element of the CSM.

## Investigation Report Marsh Lumber VCC

Pamplico, South Carolina

S&ME Project No. 1584-98-146C



The working site conceptual model considered that undulations in the top of the clay-rich layer could influence the migration of dissolved-phase PCP in the water table aquifer, possibly providing migration pathways that deviated from those estimated based solely on hydraulic gradients. The approximate elevations of the top of clay-rich layer was plotted and found to exhibit varying topography (see **Figure 7**). Two noteworthy low points in the top of the clay-rich layer were discovered. One in the vicinity of monitoring well MW-1 at the former Green Chain Area and the other in the vicinity of monitoring well MW-13A.

The distribution of groundwater PCP concentrations appears to corroborate the existence of a preferential flow path associated with the topography of the top of the clay-rich layer. The CSM theorized that the PCP hot-spot which occurred at monitoring well MW-14/MW-14A may be due to some PCP migrating in groundwater toward a topographic low in the top of clay-rich layer near monitoring well MW-13, rather than westward toward the unnamed tributary to Big Swamp Branch based solely on hydraulic gradients.

Based on PCP concentration trends over time, the PCP plume appears to be generally stable if not naturally attenuating before it reaches a potential receptor, surface waters of Big Swamp Branch.

## 8.2 Preliminary Risk Assessment

In developing this preliminary risk assessment, it was assumed that the future use of the site will remain industrial. The site investigations performed identified PCP as the constituent of potential concern. Media with confirmed PCP impacts are soil and groundwater. The following summarizes documented impacts to these media.

- No SVOCs were detected at concentrations that exceeded the corresponding EPA RSL for industrial soils. Detected SVOC concentrations were generally 50% or more below the industrial soil RSLs. Surficial soil impacts are limited to the location of the former dip-tank in the Green Chain Area
- PCP has been detected in groundwater at concentrations that exceed the corresponding MCL. As discussed in Section 6.5, surface water analytical results provide no confirmed PCP impacts to surface waters in the vicinity of the expected discharge area for the water table aquifer.

**Table 15** provides a chart depicting a preliminary conceptual model. Considering the limited extent of soil PCP impacts and the industrial usage of the site, site worker exposure scenarios are unlikely; and if warranted, could be managed with institutional controls. Considering the relatively flat site topography and sandy soils, surface runoff from PCP impacted soils is an unlikely transport mechanism. Human ingestion or dermal exposure to PCP in groundwater as a drinking water source is the primary exposure route. Considering that the PCP plume is contained within the subject site and the nearest known active water supply wells are approximately 0.5 mile away, the human receptor pathway is currently incomplete.

## 9.0 Conclusions

The Marsh Lumber site is occupied by active industrial facility, with industrial operations at the site dating back prior to 1946. The site assessment activities conducted have determined the source, nature, and extent of PCP at the MARSH site. Soil impacted by PCP and possible PCP degradation compounds are limited to a relatively small area in the former Green Chain Area, with reported concentrations that were less than EPA RSL for Industrial Soil. Groundwater impacts were delimited to the water table aquifer, contained within the property boundary, and



**Investigation Report**  
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delimited to points prior to groundwater reaching the local shallow groundwater discharge point, an unnamed tributary to Big Swamp Branch. Surface water sampling conducted to date has yielded no confirmed impacts to surface waters down-gradient and adjacent to the PCP groundwater plume.

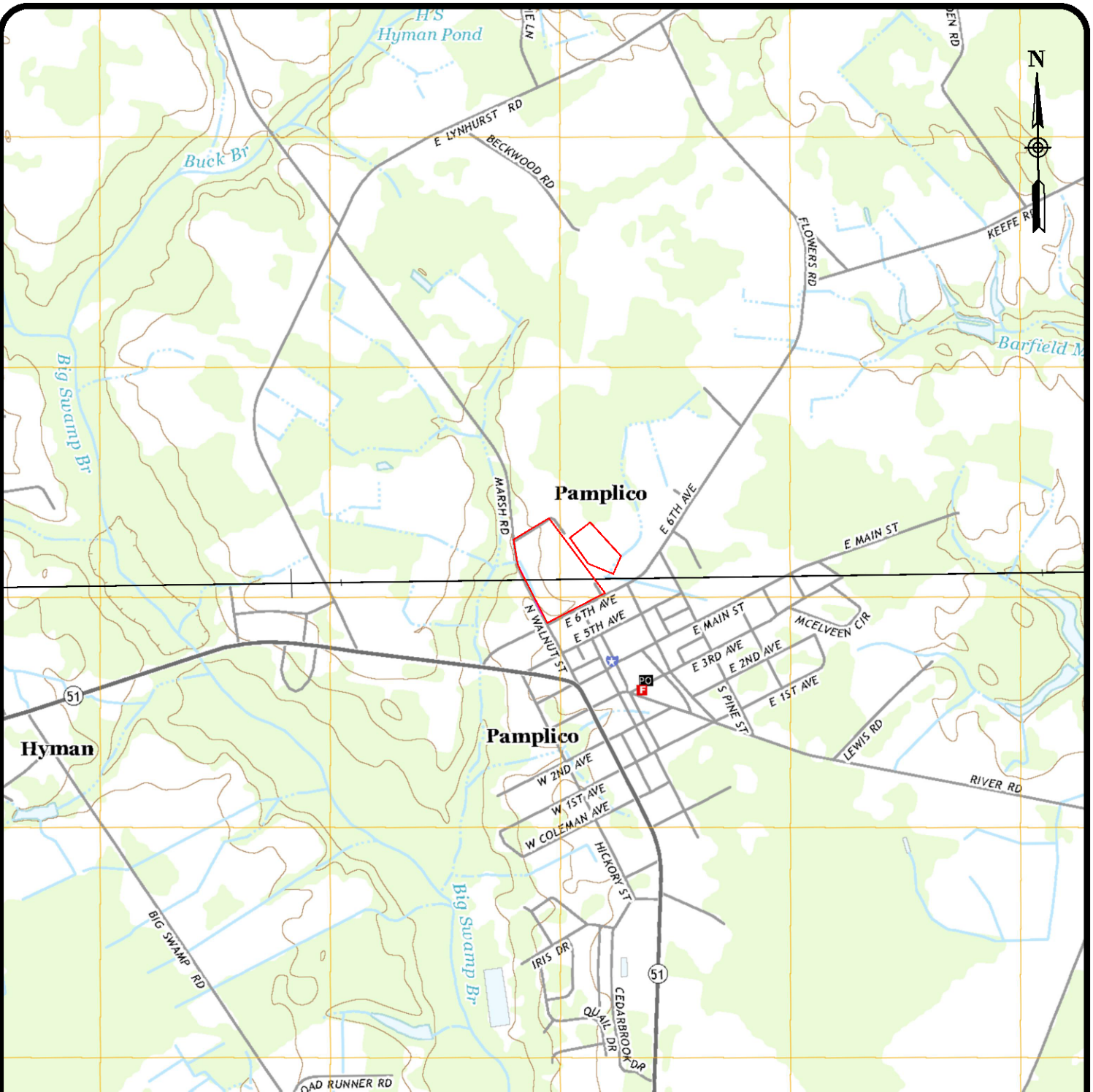
With the support of the Town of Pamplico and South Carolina Department of Transportation, the Town's storm water line that historically traversed a portion of the site was relocated. Relocation of the storm water lines was performed to manage a scenario of hypothetical seepage of groundwater into the storm water pipe, at pipe joints, during periods of temporary high water table typically associated with short term high rainfall events.

The water table aquifer at the site is not known to be used as an underground source of drinking water. The updated water well receptor survey indicated the Town of Pamplico provides water to residents and businesses. The Town's potable water system draw water from the deeper aquifer that is substantially deeper than the PCP impacted surficial aquifer at the MARSH site. Active water supply wells identified are generally located approximately 1/2 mile or more from the MARSH site. Given that potable water is provided by the Town of Pamplico, the potential future use of the shallow aquifer in the immediate vicinity of MARSH as a drinking water source is presumed to be low.

Two Bio-sparging pilot tests have been performed, both resulted in in-situ reductions of PCP concentrations, indicating bio-sparging as a viable remedial alternative for PCP. Trends in PCP concentrations over time suggest that the PCP groundwater plume is relatively stable, with concentration trends generally declining over time.

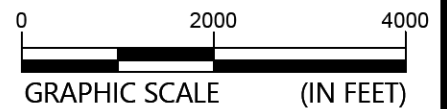
The site assessment phase is now complete. This report summarizes the multiple site assessments conducted and provides a foundation for the pending Feasibility Study





Drawing Path: Q:\1584\98\98-146 - MARSH LUMBER\C-2-20 Summary Report\Figures 1 & 11.dwg

SOURCE: PAMPICO NORTH, SC AND PAMPICO SOUTH, SC, 7.5-MINUTE SERIES, USGS TOPOGRAPHIC MAPS (2014).



### AREA TOPOGRAPHIC MAP

MARSH LUMBER  
PAMPICO, SOUTH CAROLINA

SCALE:  
AS SHOWN  
DATE:  
FEB. 2020  
PROJECT NUMBER  
1584-98-146C

FIGURE NO.

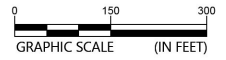
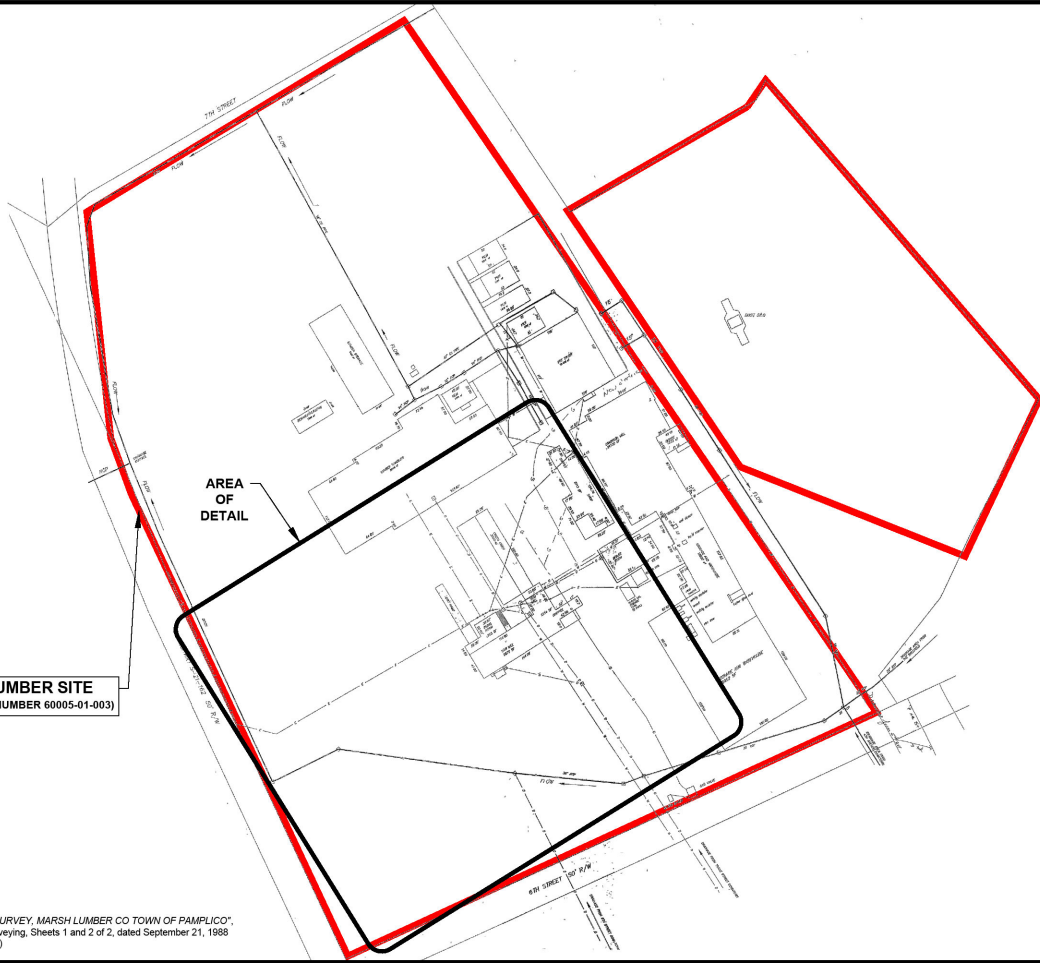
**1**



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**MARSH LUMBER SITE**  
(TAXMAP SERIES NUMBER 60005-01-003)

Reference: "AS - BUILT SURVEY, MARSH LUMBER CO TOWN OF PAMPLICO",  
by Prosser Surveying, Sheets 1 and 2 of 2, dated September 21, 1988  
(Revised 10/95)



**HISTORIC SITE SURVEY**

MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA

SCALE:
AS SHOWN
DATE:
FEB. 2020
PROJECT NUMBER:
1584-98-146C
FIGURE NO.:

**2**



Drawing path: C:\1584\98-146 - MARSH LUMBER CO\_20 Summary Report\Figure 3.dwg



VICINITY MAP

MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA

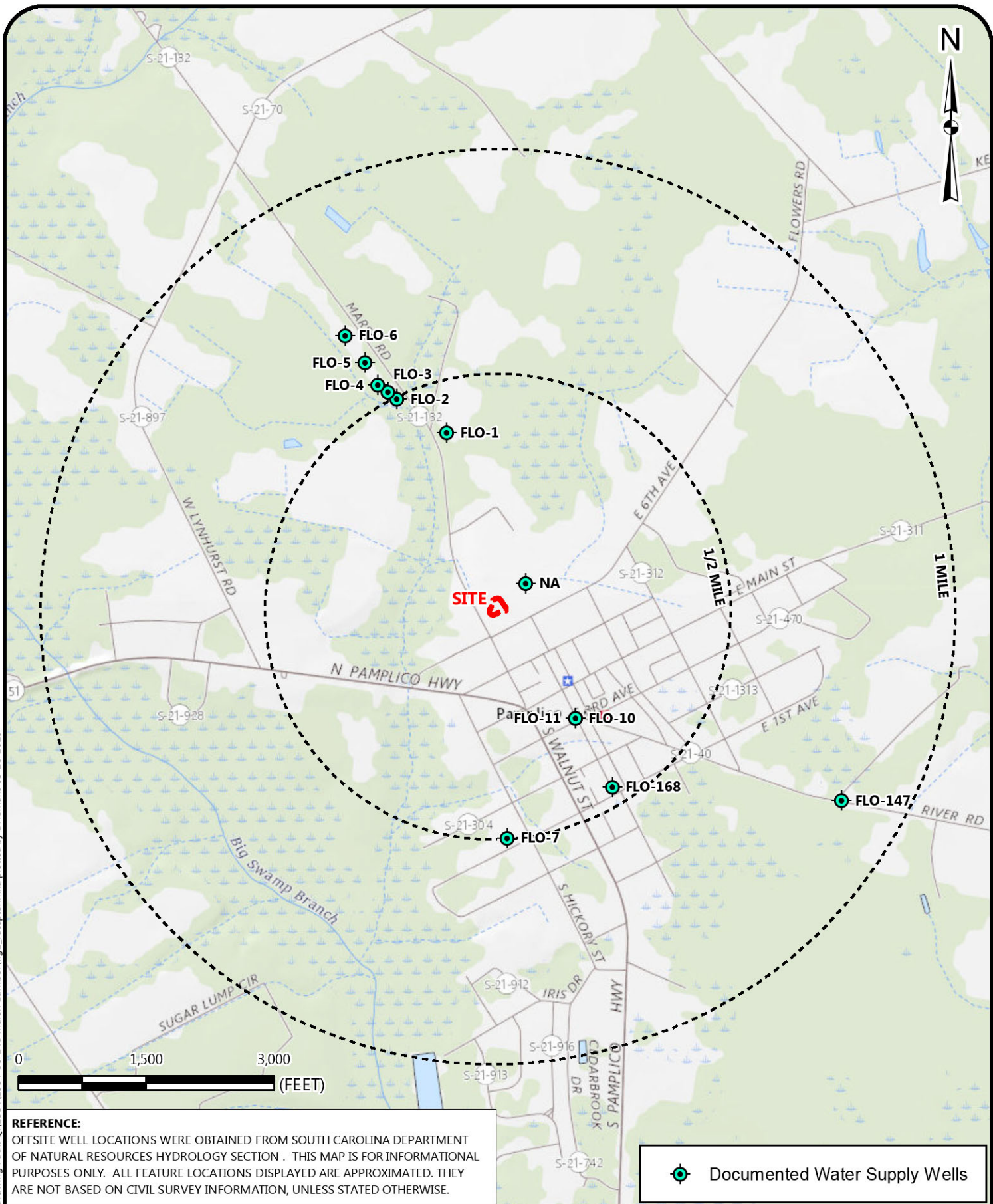
SCALE:	AS SHOWN
DATE:	FEB. 2020
PROJECT NUMBER:	1584-98-146C
FIGURE NO.:	3

3


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Drawing Path: Q:\1584\1584-98-146 Marsh Lumber\fig2\_receptor.mxd plotted by DHomans 03-26-2019

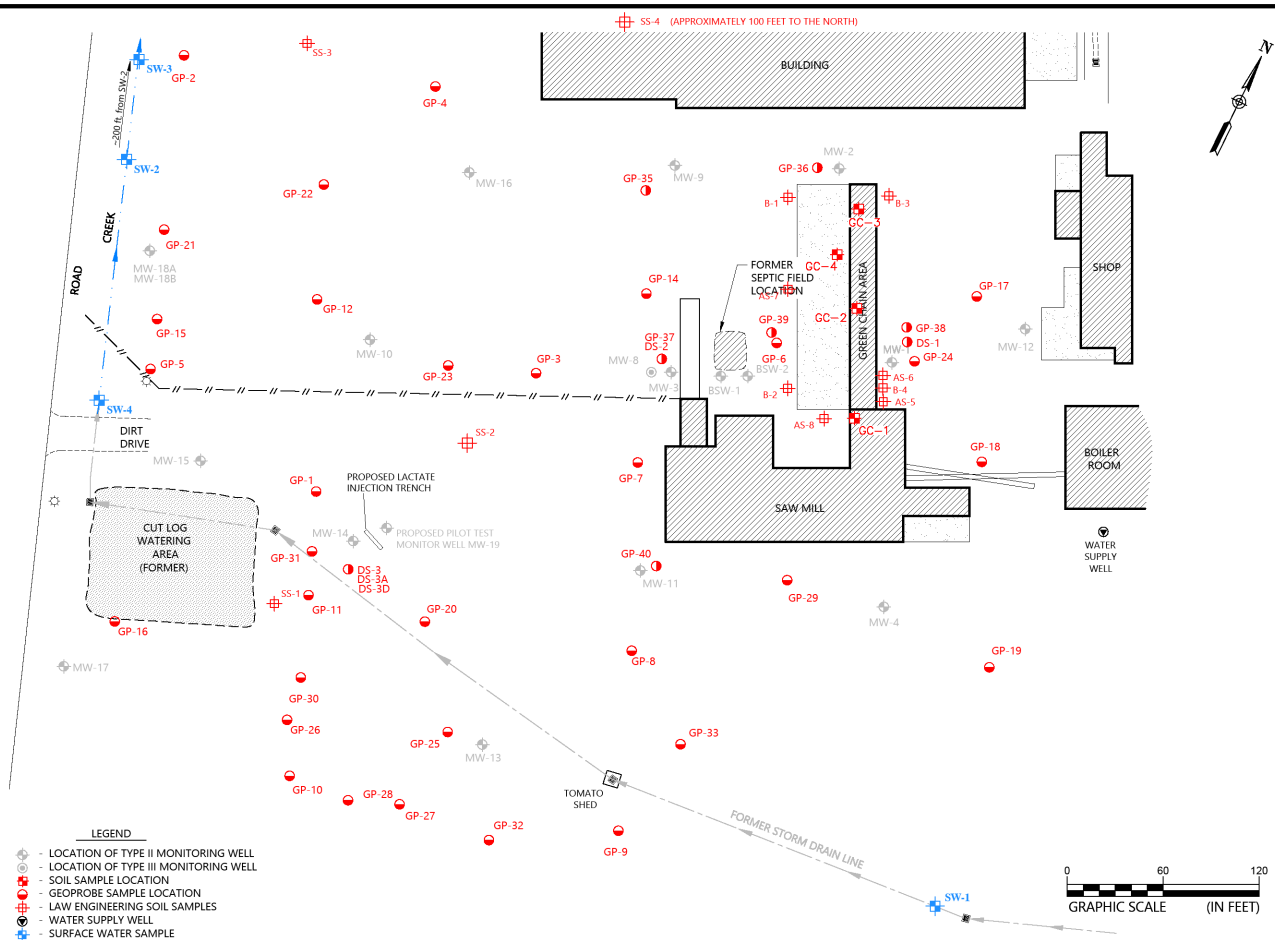


**REFERENCE:**  
 OFFSITE WELL LOCATIONS WERE OBTAINED FROM SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES HYDROLOGY SECTION . THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

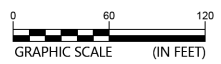
 Documented Water Supply Wells

	<b>WATER WELL RECEPTOR SURVEY</b>		SCALE: 1" = 1,500'	FIGURE NO.
	MARSH LUMBER COMPANY PAMPLICO, SOUTH CAROLINA		DATE: 3-26-19 PROJECT NUMBER 1584-98-146C	<b>4</b>

Drawing path: C:\1584\98-146 - MARSH LUMBER CO-20 Summary Report\Figures 5 & 6.dwg



- LEGEND**
- - LOCATION OF TYPE II MONITORING WELL
  - - LOCATION OF TYPE III MONITORING WELL
  - - SOIL SAMPLE LOCATION
  - - GEOPROBE SAMPLE LOCATION
  - ⊕ - LAW ENGINEERING SOIL SAMPLES
  - ⊕ - WATER SUPPLY WELL
  - ⊕ - SURFACE WATER SAMPLE



**SOIL SAMPLE LOCATION MAP**

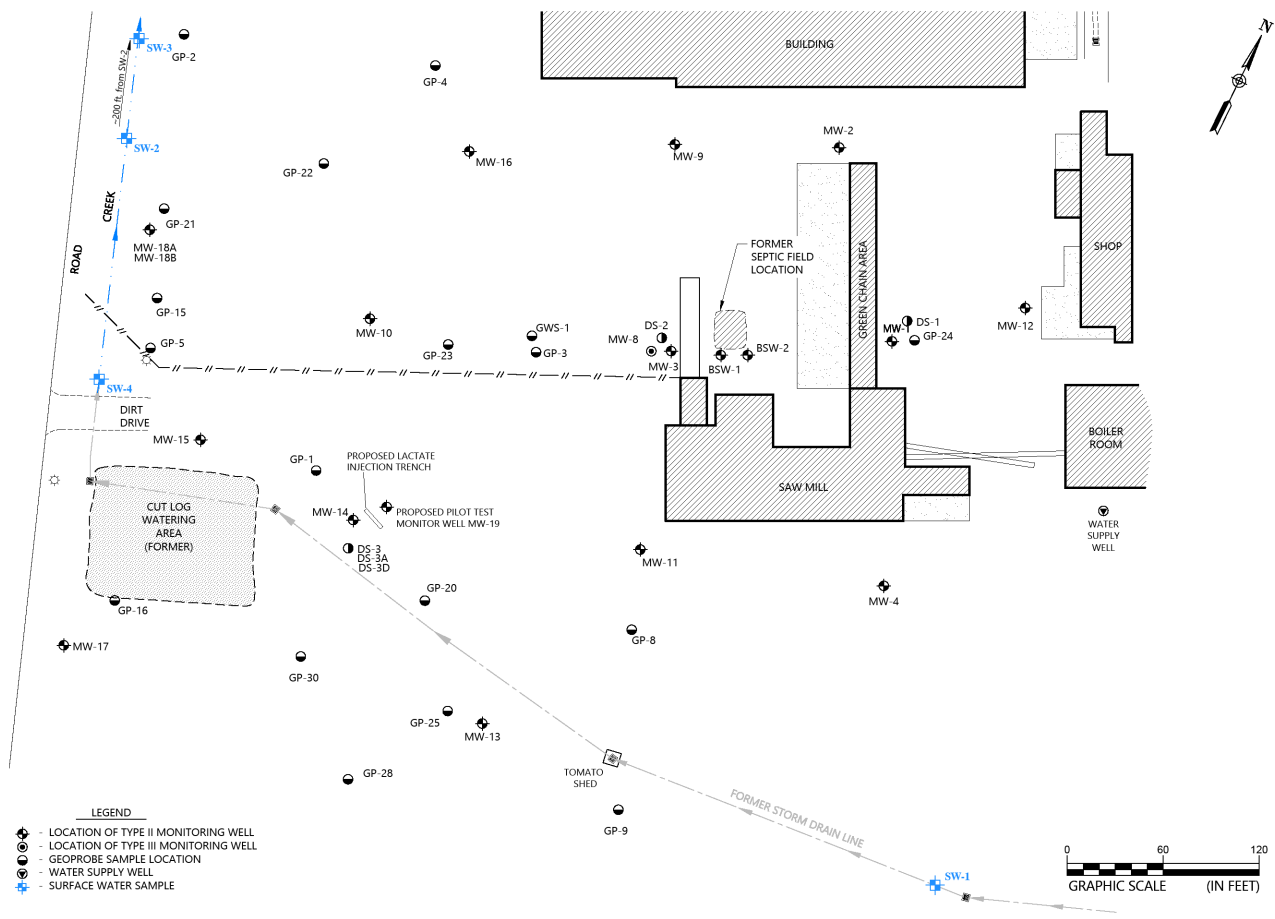
MARSH LUMBER COMPANY  
PAMPICO, SOUTH CAROLINA


SCALE:	AS SHOWN
DATE:	FEB. 2020
PROJECT NUMBER:	1584-98-146C
FIGURE NO.:	5

5

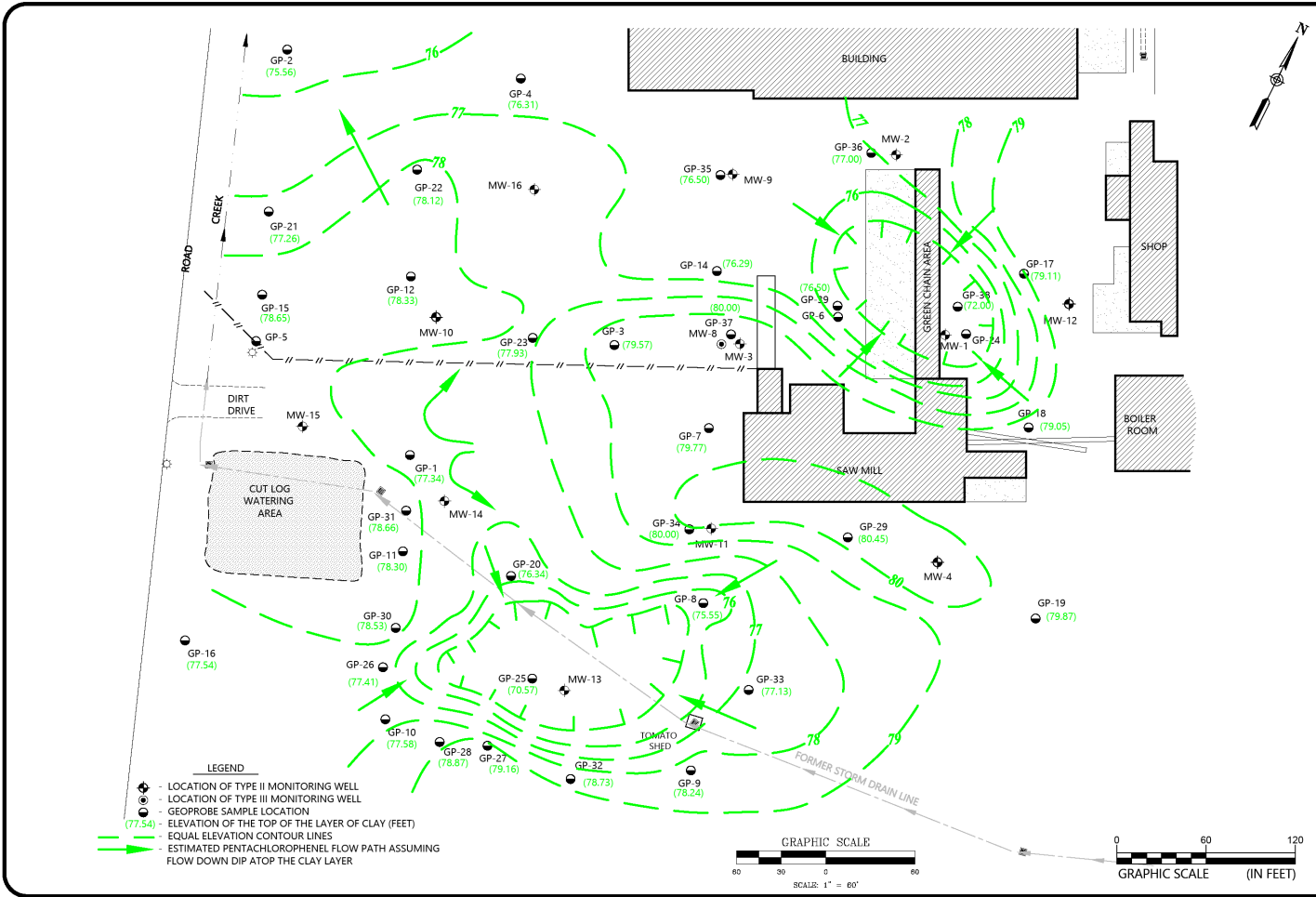


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<b>GROUNDWATER SAMPLE LOCATIONS</b>	
MARSH LUMBER COMPANY PAMPILCO, SOUTH CAROLINA	
SCALE: AS SHOWN	
DATE: FEB. 2020	
PROJECT NUMBER: 1584-98-146C	
FIGURE NO. <b>6</b>	

Drawing path: C:\1584\98-146 - MARSH LUMBER CO-20 Summary Report\Figure 7.dwg



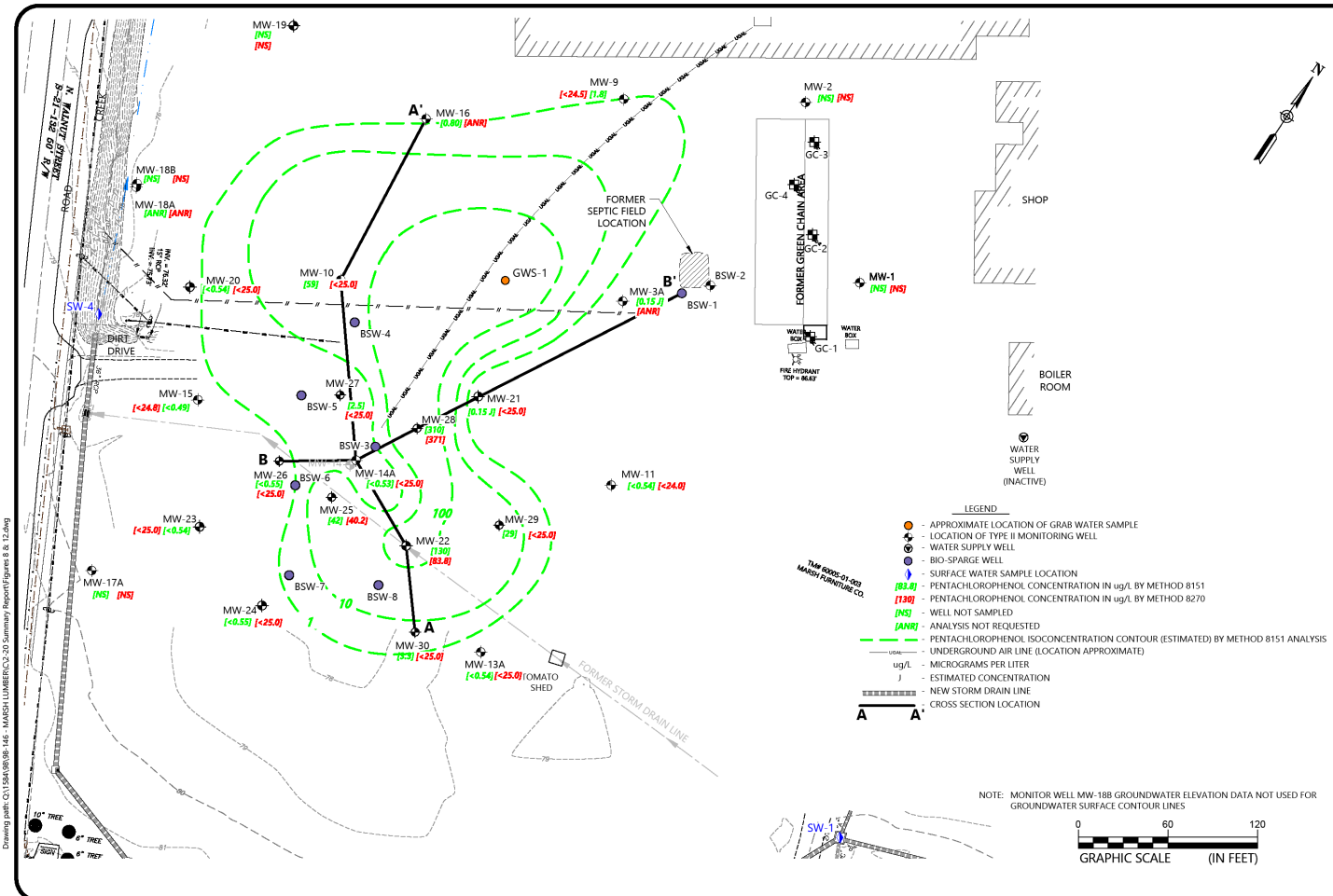
TOP OF CLAY CONTOUR MAP

MARSH LUMBER COMPANY  
PAMPICO, SOUTH CAROLINA

SCALE:
AS SHOWN
DATE:
FEB. 2020
PROJECT NUMBER:
1584-98-146C
FIGURE NO.

7





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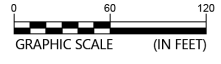


**GROUNDWATER PCP CONTOUR MAP (JULY 2019 & OCTOBER 2019)**

MARSH LUMBER  
PAMPILCO, SOUTH CAROLINA

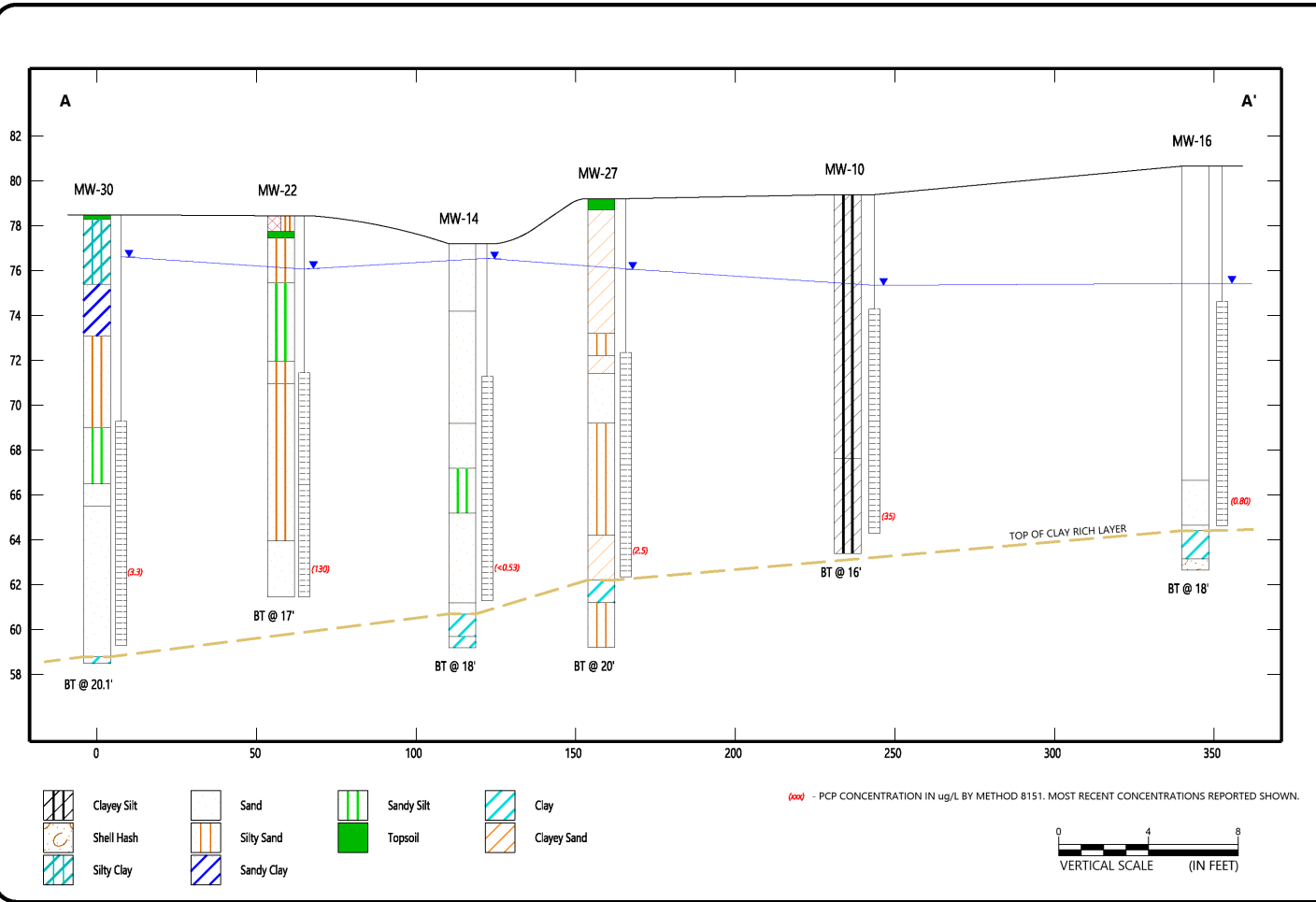
- LEGEND**
- - APPROXIMATE LOCATION OF GRAB WATER SAMPLE
  - - LOCATION OF TYPE II MONITORING WELL
  - ⊕ - WATER SUPPLY WELL
  - ⊖ - BIO-SPARGE WELL
  - ⬇ - SURFACE WATER SAMPLE LOCATION
  - [83.4] - PENTACHLOROPHENOL CONCENTRATION IN ug/L BY METHOD 8151
  - [130] - PENTACHLOROPHENOL CONCENTRATION IN ug/L BY METHOD 8270
  - [NS] - WELL NOT SAMPLED
  - [ANR] - ANALYSIS NOT REQUESTED
  - - PENTACHLOROPHENOL ISOCONCENTRATION CONTOUR (ESTIMATED) BY METHOD 8151 ANALYSIS
  - - UNDERGROUND AIR LINE (LOCATION APPROXIMATE)
  - ug/L - MICROGRAMS PER LITER
  - ] - ESTIMATED CONCENTRATION
  - - NEW STORM DRAIN LINE
  - - CROSS SECTION LOCATION

NOTE: MONITOR WELL MW-188 GROUNDWATER ELEVATION DATA NOT USED FOR GROUNDWATER SURFACE CONTOUR LINES



SCALE:	AS SHOWN
DATE:	AUGUST 2019
PROJECT NUMBER:	1584-98-146C
FIGURE NO.	8

Drawing path: C:\1584-98-146 - MARSH LUMBER\CO-20 Summary Report\Figure 9 & 10.dwg



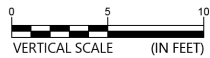
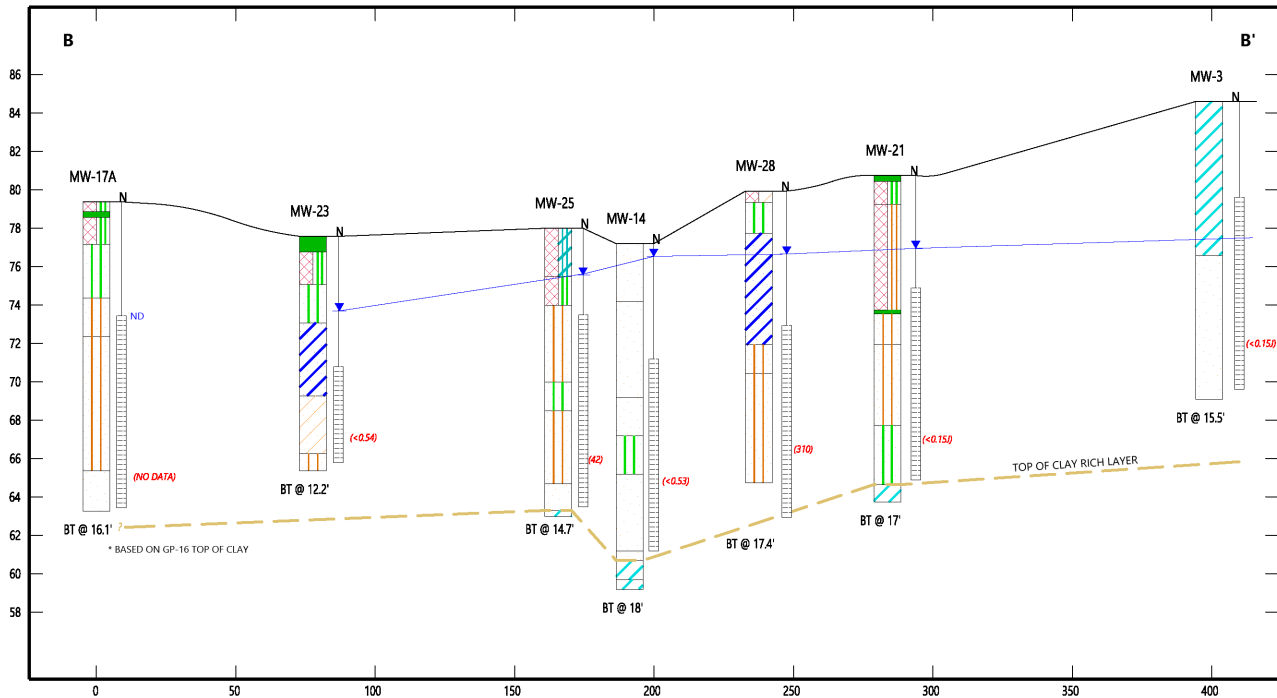
**CROSS-SECTION A - A'**  
 MARCH LUMBER  
 PAMPLICO, SOUTH CAROLINA

SCALE:
AS SHOWN
DATE:
FEB. 2020
PROJECT NUMBER
1584-98-146C
FIGURE NO.

**9**



Drawing path: C:\1584\98-146 - MARSH LUMBER\C2-20 Summary Report\Figure 9 & 10.dwg

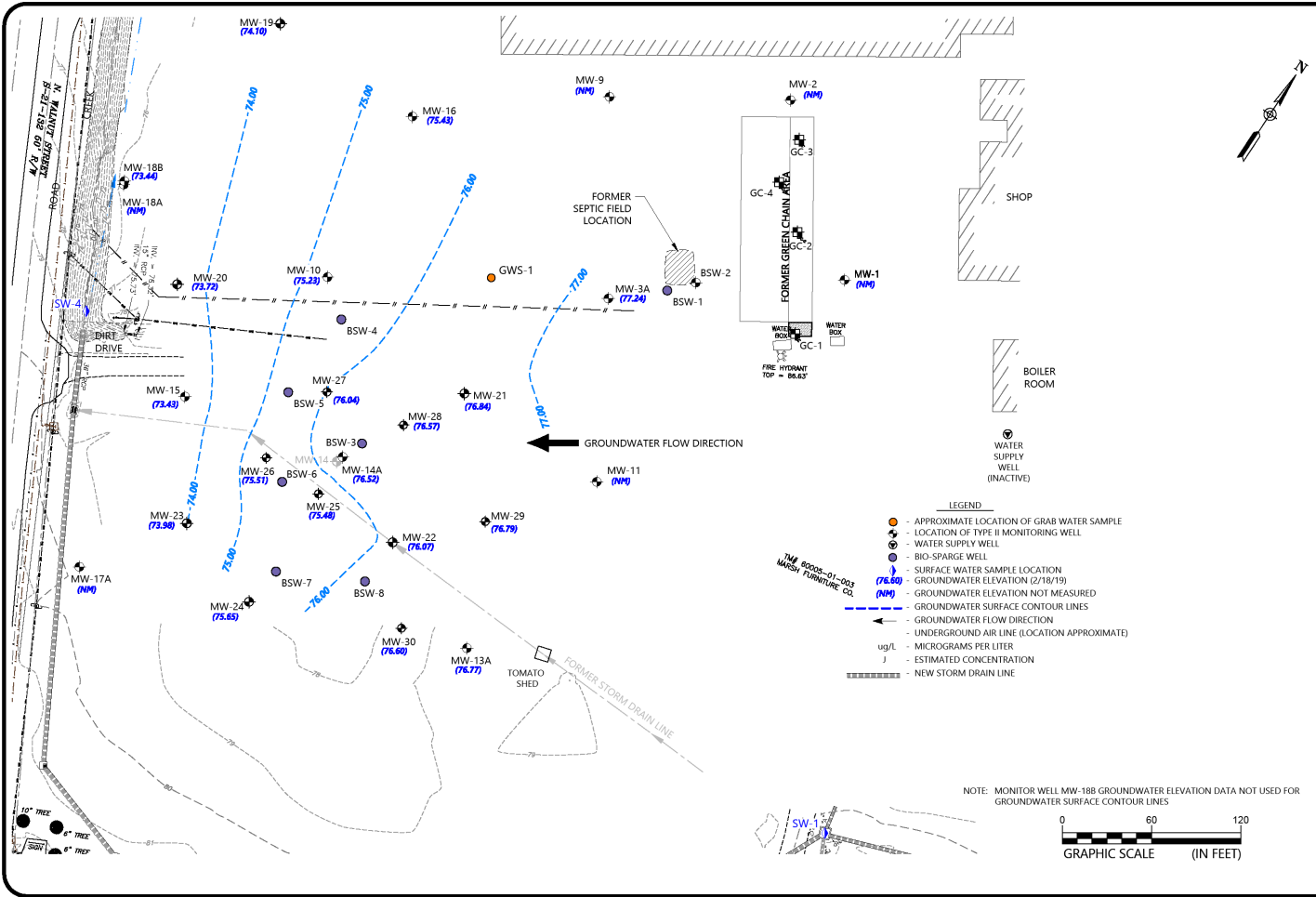


**CROSS-SECTION B - B'**  
MARCH LUMBER  
PAMPILICO, SOUTH CAROLINA

SCALE:	AS SHOWN
DATE:	FEB, 2020
PROJECT NUMBER:	1584-98-146C
FIGURE NO.:	

**10**

Drawing path: C:\1584-98-146 - MARSH LUMBER CO-20 Summary Report\Figures 1 & 11.dwg



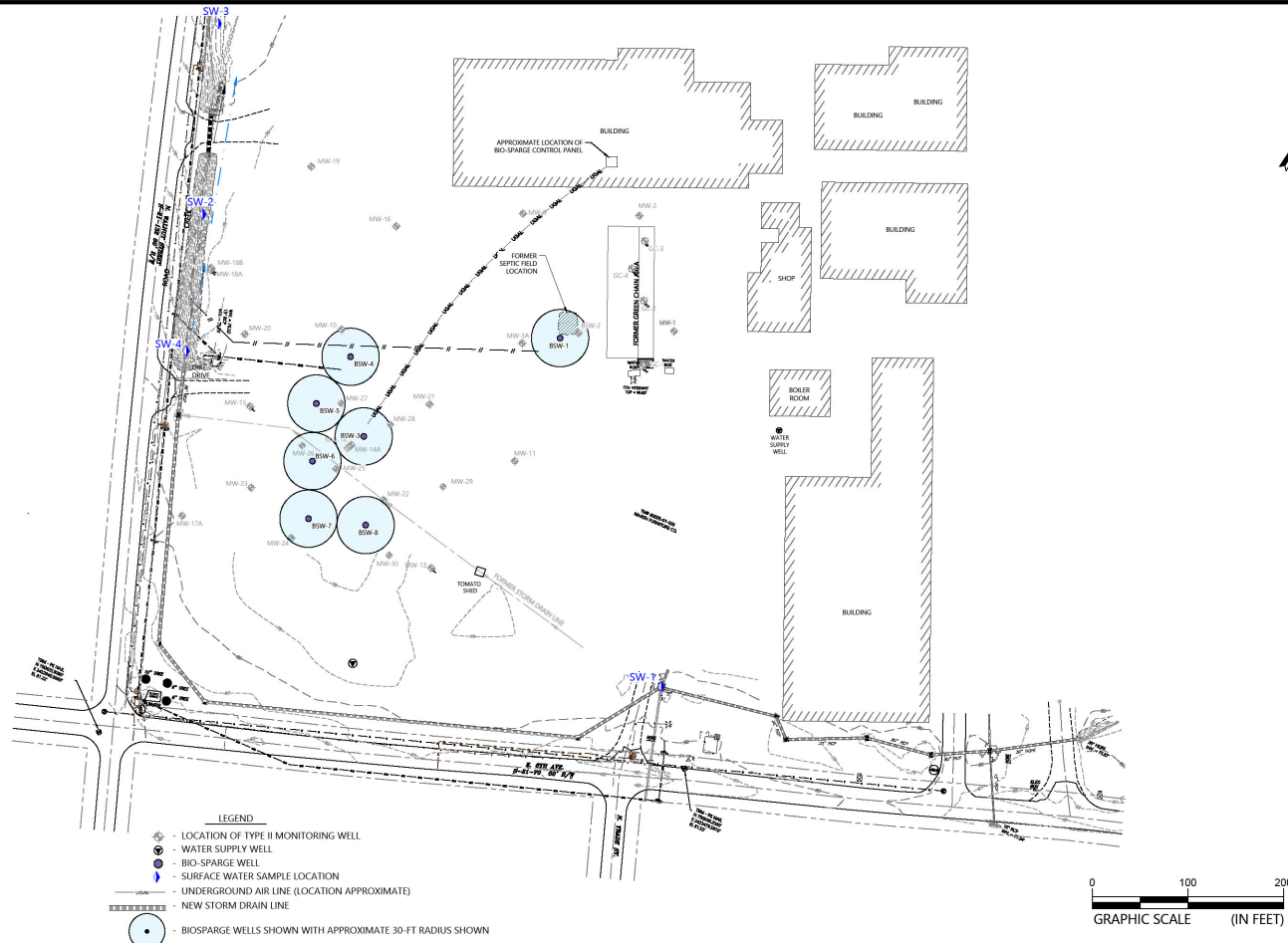
**GROUNDWATER DATA - FEBRUARY 2019**

MARSH LUMBER  
PAMPICO, SOUTH CAROLINA

SCALE: AS SHOWN
DATE: FEB. 2020
PROJECT NUMBER: 1584-98-146C
FIGURE NO. <b>11</b>



Drawing path: C:\1584-98-146 - MARSH LUMBER\20 Summary Report\Figures 8 & 12.dwg



**BIO-SPARGE PILOT TEST WELLS MAP**

MARSH LUMBER  
PAMPILCO, SOUTH CAROLINA

SCALE:	AS SHOWN
DATE:	FEB. 2020
PROJECT NUMBER:	1584-98-146C
FIGURE NO.:	12

**Table 1**  
**Updated Water Well Receptor Survey - 2019**  
**SCDHEC Database, Florence County GIS, & Site Reconnaissance**  
**Marsh Lumber Company VCC Site**  
**S&ME Project No. 1584-98-146C**



Map ID	Latitude	Longitude	Owner	Address	City/State	Well Use	Approximate Distance From PCP Plume (miles)	Information Source	Well Depth (feet bgs)	Top of Screen (feet bgs)
FLO-1			Creel, Austin	420 Marsh Road	Pamplico/SC	Domestic	0.37	FOI - 1, 2, 3	170	2
FLO-2			Evans, Anthony	429 Marsh Road	Pamplico/SC		0.50	1, 3		
FLO-3			Smith, John	437 Marsh Road	Pamplico/SC		0.53	1, 3		
FLO-4			Smith, John	445 Marsh Road	Pamplico/SC		0.58	1, 3		
FLO-5			Isgett, Bobby	503 Marsh Road	Pamplico/SC		0.63	1, 2, 3		
FLO-6	34 00 50 N*	79 34 61 W*	Sutton, Mike	513 Marsh Road	Pamplico/SC	Irrigation	0.75	FOI - 2, 3	170	4
FLO-7	33 59 31*	79 34 15*	Munn, Ollie Mae	311 S Hickory Street	Pamplico/SC	Cooling	0.50	FOI	240	2
NA	339999	795698	Marsh Lumber		Pamplico/SC	Unused <sub>1</sub>	On-site	4		
FLO-10	335944	793405	Town of Pamplico		Pamplico/SC	Unused	0.28	5	192	182
FLO-11	335944	793405	Town of Pamplico		Pamplico/SC	Unused	0.28	5	157	147
FLO-147	335934	793328	Town of Pamplico (Well#1)		Pamplico/SC	Public Supply	0.85	5	300	210
FLO-317	335940	793605	Town of Pamplico (Well#2)		Pamplico/SC	Public Supply	1.75	5		270
FLO-168	335936	793400	Town of Pamplico (Well#3)		Pamplico/SC	Public Supply	0.46	5	203	-

FOI = Data obtained as a results of a Freedom of Information request submitted to SCDHEC

1 = Water well assumed present because parcel was located outside of Pamplico Town limits

2 = Suspect Well Structure Visual Observation

3 = Florence County GIS records

4 = Marsh Lumber

5 = Town of Pamplico

\* =Well location Longitude and Latitude data present as reported in the SCDHEC database. Others as estimated from Florence County GIS

Blank cells = no information reported or obtained

**Table 2**  
**Clay-Rich Layer Exploration Summary**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



1998 Geoprobe Data				
Sample Location	Ground Elevation (feet)	Depth to the Top of Clay (feet)	Top of Clay Elevation (feet)	Thickness of Clay Layer (feet)
GP-1	93	16	77	2.00
GP-2	91	15	76	2.25
GP-3	96	17	80	1.50
GP-4	95	18	76	2.50
GP-5	92	nd	nd	nd
GP-6	nd	nd	nd	nd
GP-7	98	19	80	1.50
GP-8	97	21	76	3.50
GP-9	94	16	78	1.75
GP-10	93	16	78	1.00
GP-11	91	13	78	2.25
GP-12	93	15	78	2.00
GP-14	99	23	76	2.00
GP-15	92	13	79	1.25
GP-16	94	17	78	1.75
GP-17	100	21	79	1.75
GP-18	100	21	79	3.00
GP-19	98	19	80	1.50
GP-20	94	18	76	2.00
GP-21	91	14	77	2.50
GP-22	94	16	78	1.00
GP-23	96	18	78	1.00
GP-24	101	nd	nd	nd
GP-25	94	23	71	1.00
GP-26	93	16	77	1.00
GP-27	92	13	79	1.00
GP-28	93	14	79	1.00
GP-29	98	18	80	1.50
GP-30	93	14	79	1.00
GP-31	92	14	79	1.25
GP-32	94	15	79	1.50
GP-33	95	18	77	1.25



**Table 2**  
**Clay-Rich Layer Exploration Summary**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



2005 Geoprobe Data				
Sample Location	Ground Elevation (feet)	Depth to the Top of Clay (feet)	Top of Clay Elevation (feet)	Thickness of Clay Layer (feet)
GP-34	97	17	80	1.50
GP-35	98	22	77	0.75
GP-36	99	22	77	0.75
GP-37	99	19	80	0.75
GP-38	100	28	72	0.75
GP-39	99	23	77	0.75
2006 Geoprobe Data				
Sample Location	Ground Elevation (feet)	Depth to the Top of Clay (feet)	Top of Clay Elevation (feet)	Thickness of Clay Layer (feet)
GP-40	97	17	80	3.00
DS-1	100	25	75	0.60
DS-2	99	20	79	1.50
DS-3	95	19	76	1.30
DS-3A	94	22	72	0.50

**Table 3**  
**Well Construction Details**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Well ID	Date Well Completed	Top of Casing Elevation <sub>1</sub> (mean sea level)	Total Depth (feet bls.)	Well Diameter (inches)	Screen (feet bls.)	Riser* (feet bls.)	Installed By	Comments
MW-1	1/4/1993	85.55	15.3	2	5.3 15.3	0.0 - 5.3	LAW	
MW-3A	12/14/2004	88.59	15.0	2	5.0 15	0.0 - 5.0	S&ME	replaced MW-3
MW-9	10/8/1993	83.50	18.0	2	8.0 18	0.0 - 8.0	LAW	
MW-10	10/8/1993	83.30	15.0	2	5.0 15	0.0 - 5.0	LAW	
MW-11	10/11/1993	85.61	15.0	2	5.0 15	0.0 - 5.0	LAW	
MW-13A	12/14/2004	83.52	22.0	2	7.0 22	0.0 - 7.0	S&ME	replaced MW-13
MW-14A	6/6/2017	81.11	16.0	2	6.0 16	0.0 - 6.0	S&ME	replaced MW-14
MW-15	8/16/2000	82.32	15.0	2	5.0 15	0.0 - 5.0	S&ME	
MW-16	8/16/2000	83.65	16.0	2	6.0 16	0.0 - 6.0	S&ME	
MW-17A	9/9/2016	82.37	15.9	2	5.9 15.9	0.0 - 15.9	S&ME	replaced MW-17
MW-18A	1/9/2009	80.27	6.7	2	4.7 6.7	0.0 - 4.7	S&ME	shallow
MW-18B	1/9/2009	80.17	15.2	2	13.2 15.2	0.0 - 13.2	S&ME	deeper
MW-19	9/8/2016	79.56	17.6	2	7.4 17.4	0.0 - 7.4	S&ME	
MW-20	9/9/2016	80.59	13.9	2	3.9 13.9	0.0 - 3.9	S&ME	
MW-21	9/9/2016	84.04	15.8	2	5.8 15.8	0.0 - 5.8	S&ME	
MW-22	9/9/2016	81.74	17.1	2	7.1 17.1	0.0 - 7.1	S&ME	
MW-23	9/9/2016	81.37	11.8	2	6.8 11.8	0.0 - 6.8	S&ME	
MW-24	5/23/2017	81.23	14.0	2	4.0 14.0	0.0 - 4.0	S&ME	
MW-25	10/31/2017	80.49	14.6	1	4.5 14.5	0.0 - 4.5	S&ME	
MW-26	10/30/2017	81.21	14.3	1	9.2 14.2	0.0 - 9.2	S&ME	
MW-27	10/30/2017	82.20	17.1	1	7.0 17.0	0.0 - 7.0	S&ME	
MW-28	10/30/2017	83.03	17.1	1	7.0 17.0	0.0 - 7.0	S&ME	
MW-29	10/31/2017	82.90	20.1	1	10.0 20.0	0.0 - 10.0	S&ME	
MW-30	10/31/2017	81.58	19.4	1	9.3 19.3	0.0 - 9.3	S&ME	
BSW-1	1/9/2009	not measured	18.5	2	16.0 18.5	0.0 - 16.0	S&ME	Bio-sparge well
BSW-2	1/9/2009	not measured	20.0	2	10.0 20.0	0.0 - 10.0	S&ME	
BSW-3	9/9/2016	not measured	16.9	2	15.0 16.8	0.0 - 15.0	S&ME	Bio-sparge well

Top of Casing Elevations<sub>1</sub> = Based data provided by Nesbitt Surveying Company, Inc. on 10/27/2016

Top of Casing Elevations in green shaded cells are based on rod and level survey data obtained by S&ME, relative to existing well TOC.

feet bls. = feet below land surface

feet below TOC = feet below top of well casing

Riser\* = relative to top of casing

**Table 4**  
**Summary of Soil Sample Analytical Data - 1993**  
**Law Engineering Soil Sampling Assessment**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



		Sample ID	AS-5	AS-6	AS-7	AS-8	MW-8	MW-9	MW-10	MW-11	Regional Screening Levels-November 2019 (Target Cancer Risk = 1E-06, Hazard Quotient 1.0)	
		Sample Date	10/7/1993	10/7/1993	10/7/1993	10/7/1993	10/7/1993	10/8/1993	10/8/1993	10/11/1993		
		Sample Depth	Depth = 0.5-1.0 Feet	Depth = 0.5-1.0 Feet	Depth = 0.5-1.0 Feet	Depth = 0.5-1.0 Feet	Depth 49.5 -50 feet	Depth 6.0-7.5 feet	Depth 3.5-7.5 feet	Depth 6.0-7.5 feet		
Parameter	Analytical Method	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Residential Soil	Industrial Soil
Barium	6010	mg/kg	160	280	36	44	22	8	3.4	4	15,000	220,000
Chromium	6010	mg/kg	7.8	17	82	17	43	25	6.5	5.9	not listed	not listed
Lead	6010	mg/kg	28	20	9.4	17	9.5	7	4.1	5.2	400	800
Mercury	6010	mg/kg	3.1	ND	ND	ND	ND	ND	ND	ND	11.0	46.0
Silver	6010	mg/kg	ND	ND	ND	ND	ND	ND	ND	16	390	5,800
Semi-Volatile Organics	8270	mg/kg	All BQL	All BQL	All BQL	All BQL	All BQL	All BQL	All BQL	All BQL	**	**

mg/kg = milligrams per kilogram

ND = not detected

All BQL = all target semi-volatile organic compounds reported to have concentrations below quantitation limits.

Regional Screening Levels = USEPA Regional Screening Levels

\*\* = Regional Screen Levels are compound specific. No semi-volatile organic compounds detected for comparison only detected parameters are listed



**Table 5**  
**Summary of Soil Sample Analytical Data - 2016**  
**TAL Metals**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**

			Soil Samples															
Sample ID			GC-1-1		GC-1-6		GC-2-1		GC-2-6		GC-3-1		GC-3-6		GC-4-1		GC-4-6	
Depth (feet below ground surface)			0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot	
Sample Collection Date			9/9/2016		9/9/2016		9/7/2016		9/7/2016		9/9/2016		9/7/2016		9/9/2016		9/7/2016	
Parameter	Method	Unit	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Aluminum	6010C	mg/kg	<b>2,980</b>		<b>6,950</b>		<b>8,230</b>		<b>5,910</b>		<b>3,500</b>		<b>14,500</b>		<b>3,420</b>		<b>13,500</b>	
Antimony	6010C	mg/kg	<b>0.70</b>		<0.43		<b>0.69</b>		<0.42		<0.35		<0.46		<b>0.60</b>		<0.36	
Arsenic	6010C	mg/kg	<b>1.6</b>		<0.87		<b>1.9</b>		<b>1.5</b>		<b>1.1</b>		<b>4.5</b>		<b>2.7</b>		<b>4.0</b>	
Barium	6010C	mg/kg	<b>74.7</b>		<b>10.9</b>		<b>33.7</b>		<b>17.9</b>		<b>45.0</b>		<b>14.1</b>		<b>53.9</b>		<b>10.6</b>	
Beryllium	6010C	mg/kg	<b>0.077</b>		<0.087		<b>0.15</b>		<b>0.089</b>		<b>0.15</b>		<b>0.24</b>		<b>0.12</b>		<b>0.20</b>	
Cadmium	6010C	mg/kg	<0.074		<0.087		<b>0.10</b>		<0.084		<0.070		<0.092		<0.064		<0.072	
Calcium	6010C	mg/kg	<b>6,030</b>		<b>1,270</b>		<b>3,060</b>		<b>695</b>		<b>4,260</b>		<b>466</b>		<b>56,700</b>		<b>942</b>	
Chromium	6010C	mg/kg	<b>4.1</b>		<b>6.0</b>		<b>18.2</b>		<b>10.4</b>		<b>5.4</b>		<b>28.8</b>		<b>15.0</b>		<b>30.4</b>	
Cobalt	6010C	mg/kg	<b>0.64</b>		<0.43		<b>0.49</b>		<0.42		<b>0.42</b>		<0.46		<b>0.63</b>		<0.36	
Copper	6010C	mg/kg	<b>7.1</b>		<b>0.63</b>		<b>5.3</b>		<b>1.2</b>		<b>4.4</b>		<b>1.6</b>		<b>12.0</b>		<b>1.6</b>	
Iron	6010C	mg/kg	<b>3,930</b>		<b>5,370</b>		<b>18,500</b>		<b>9,170</b>		<b>4,830</b>		<b>30,400</b>		<b>8,900</b>		<b>29,900</b>	
Lead	6010C	mg/kg	<b>16.7</b>		<b>6.4</b>		<b>9.1</b>		<b>4.6</b>		<b>40.8</b>		<b>8.4</b>		<b>12.2</b>		<b>7.8</b>	
Magnesium	6010C	mg/kg	<b>433</b>		<b>190</b>		<b>298</b>		<b>189</b>		<b>389</b>		<b>603</b>		<b>1,370</b>		<b>316</b>	
Manganese	6010C	mg/kg	<b>128</b>		<b>6.7</b>		<b>81.1</b>		<b>18.6</b>		<b>85.9</b>		<b>2.7</b>		<b>159</b>		<b>5.2</b>	
Nickel	6010C	mg/kg	<b>1.6</b>		<b>0.66</b>		<b>2.1</b>		<b>0.86</b>		<b>1.1</b>		<b>1.3</b>		<b>5.2</b>		<b>1.1</b>	
Potassium	6010C	mg/kg	<b>393</b>		<433		<b>500</b>		<418		<b>585</b>		<b>862</b>		<b>438</b>		<b>766</b>	
Selenium	6010C	mg/kg	<0.74		<0.87		<b>1.6</b>		<0.84		<0.70		<b>2.7</b>		<0.64		<b>2.3</b>	
Silver	6010C	mg/kg	<0.37		<0.43		<0.37		<0.42		<0.35		<0.46		<0.32		<0.36	
Sodium	6010C	mg/kg	<370		<433		<368		<418		<352		<459		<321		<360	
Thallium	6010C	mg/kg	<0.74		<0.87		<0.74		<0.84		<0.70		<0.92		<0.64		<0.72	
Vanadium	6010C	mg/kg	<b>9.4</b>		<b>12.2</b>		<b>38.7</b>		<b>20.6</b>		<b>11.7</b>		<b>60.8</b>		<b>12.6</b>		<b>60.9</b>	
Zinc	6010C	mg/kg	<b>19.9</b>		<0.87		<b>248</b>		<b>1.9</b>		<b>10.1</b>		<b>1.2</b>		<b>107</b>		<b>1.3</b>	
Mercury	7471	mg/kg	<b>0.038</b>		<b>0.018</b>		<b>0.038</b>		<b>0.011</b>		<b>0.0082</b>		<b>0.027</b>		<b>0.053</b>		<b>0.020</b>	

Bold value indicates a detection above the laboratory reporting detection limit (RDL)

Yellow shaded cell indicates detected concentration exceeds the corresponding Residential Soil Screening Level

Orange shaded cell indicates detected concentration exceeds the corresponding Industrial Soil Screening level

Qual = laboratory data qualifier. Blank in no qualifier noted

**Table 6**  
**Summary of Soil Sample Analytical Data - 1992**  
**Law Engineering Soil Assessment**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample ID	Sample Collection Date	Sample Depth (feet below grade)	Semi-Volatile Organics Method 8270 (µg/kg)	Tentatively Identified Compounds (TICs)	Reported TIC Concentration (µg/kg)
B-1	01/09/92	1 to 2.5	all BQL	unknown aromatic hydrocarbon 9-octadecenamid	<b>710</b> <b>1,200</b>
B-1	01/09/92	3.5 to 5	all BQL	9-octadecenamid	<b>800</b>
B-2	01/09/92	1 to 2.5	all BQL	none	
B-2	01/09/92	3.5 to 5	all BQL	none	
B-3	01/09/92	4 to 6	all BQL	pentatriaconate tritetraconate octadecane 2,6,10,15-trimethylheptacecane	<b>1,900</b> <b>1,000</b> <b>920</b> <b>2,100</b>
B-3	01/09/92	8.5-10	all BQL	none	
B-4	01/09/92	1 to 2.5	all BQL	none	
B-4	01/09/92	6 to 7.5	all BQL	pentadecane tetradecane	<b>740</b> <b>700</b>
SS-1	01/09/92	0.5	all BQL	none	
SS-2	01/09/92	0.5	all BQL	none	
SS-3	01/09/92	0.5	all BQL	pentanamide	<b>350</b>
SS-4	01/09/92	0.5	all BQL	none	

*all BQL = all target compounds below quantitation limits*  
*ug/kg = micrograms per kilogram*

**Table 7**  
**Summary of Soil Sample Analytical Data - 2016**  
**Semi-Volatile Organics Compounds**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample ID			Soil Samples																Regional Screening Levels November 2019 (Target Cancer Risk = 1E-06, Hazard Quotient 1.0)		
			GC-1-1		GC-1-6		GC-2-1		GC-2-6		GC-3-1		GC-3-6		GC-4-1		GC-4-6				
Sample Depth (feet below ground surface)			0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot		0.5-1 foot		5.5-6 foot		Residential Soil	Industrial Soil	Groundwater SSL
Sample Collection Date			9/7/2016		9/7/2016		9/9/2016		9/9/2016		9/7/2016		9/9/2016		9/7/2016		9/9/2016				
Parameter	Method	Units	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual			
Pentachlorophenol	8270	µg/kg	<192,000		<19,100		<b>1,980</b>		<2,000		<2,020		<2,000		<2,070		<2,070		1,000	4,000	<b>1.4</b>
2,3,4,6-Tetrachlorophenol	8270	µg/kg	<b>5,010</b>		<3,820		<369		<401		<403		<401		<413		<414		1,900	25,000	180

Bold value indicates a detection above the reporting detection limit (RDL)

Groundwater soil screening level (SSL) is based on risk-based data (black font) or maximum contaminant level (MCL) data (red font)

Yellow shaded cell indicates detected concentration exceeds the corresponding Residential Soil Screening Level

Orange shaded cell indicates detected concentration exceeds the corresponding Industrial Soil Screening Level

Qual = laboratory data qualifier. Blank in no qualifier noted



**Table 8**  
**Summary of Groundwater Analytical Data**  
**TAL Metals on February 21, 2017**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Parameter	Method	Units	Regulatory Comparison Levels		Monitoring Well ID							
					MW-3		BSW-2		MW-14		MW-14A	
					2/21/2017		2/21/2017		2/21/2017		6/7/2017	
			Residential Screening Level (RSL) - Tap Water	Maximum Contaminant Level (MCL)	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Aluminum	6010	µg/L	20,000	NA	567		477		<b>25,000</b>		116	
Antimony	6010	µg/L	7.8	6.0	<5.0		<5.0		<5.0		<5.0	
Arsenic	6010	µg/L	0.0052	10	<5.0		<5.0		<b>5.9</b>	J	<10.0	
Barium	6010	µg/L	3,800	2,000	41.7		92.3		64.7		11.6	
Beryllium	6010	µg/L	25	4.0	<1.0		<1.0		0.70	J	<1.0	
Cadmium	6010	µg/L	9.2	5.0	<1.0		<1.0		<1.0		<1.0	
Calcium	6010	µg/L	NA	NA	4,660		102,000		3,580		2,140	
Chromium	6010	µg/L	NA	100	<5.0		<5.0		32.0		<5.0	
Cobalt	6010	µg/L	6.0	NA	<5.0		<5.0		<5.0		<5.0	
Copper	6010	µg/L	800	1,300	<5.0		<5.0		8.0		<5.0	
Iron	6010	µg/L	14,000	NA	700		478		9,840		66.0	
Lead	6010	µg/L	15	15	<5.0		<5.0		<b>22.6</b>		<5.0	
Magnesium	6010	µg/L	NA	NA	1,830		4,670		1,170		272	
Manganese	6010	µg/L	430	NA	29.2		28.5		45.8		21.6	
Nickel	6010	µg/L	390	NA	<5.0		6.4		3.4	J	<5.0	
Potassium	6010	µg/L	NA	NA	7,670		10,300		3,700	J	<5000	
Selenium	6010	µg/L	100	50	<10.0		<10.0		<10.0		<10.0	
Silver	6010	µg/L	94	NA	<5.0		<5.0		<5.0		<5.0	
Sodium	6010	µg/L	NA	NA	7,090		21,300		11,700		10,800	
Thallium	6010	µg/L	0.2	2.0	<10.0		<10.0		<10.0		<10.0	
Vanadium	6010	µg/L	86	NA	<5.0		<5.0		51.3		<5.0	
Zinc	6010	µg/L	6,000	NA	10.4		<10.0		357		<10.0	
Mercury	7470	µg/L	0.63	2.0	<0.20		<0.20		<b>0.11</b>	J	<0.20	
Field Turbidity		NTU			8.6		9.1		228		3.3	
Field pH		S.U.			5.3		7.2		5.8		5.5	

J qualifier = estimated concentration (greater than the method detection limit but less than the reporting limit)

Bold value indicates a concentration greater than the corresponding Residential Screening Level - Tap Water

Yellow shaded cell indicates detected concentration exceeds the corresponding MCL

NA = No RSL-Tap water or MCL listed

**Table 9**  
**1999 Direct Push Grab Sample Groundwater Analytical Data Summary**  
**Marsh Lumber Site**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample Location	Date Collected	Analytical Results Pentachlorophenol (µg/L)	Sampled Interval feet below grade	Stratigraphic Position Relative to Base Of Clay-Rich Layer
GP-1-15	01/05/99	<b>696</b>	11 to 15	at and above the clay
*GP-1-15	01/28/99	<b>270</b>	11 to 15	at and above the clay
GP-1-30	01/05/99	<25	26 to 30	below the clay
GP-2-16	01/05/99	<25	12 to 16	at and above the clay
GP-2-24	01/05/99	<28	20 to 24	at and above the clay
GP-3-19	01/05/99	<b>74</b>	15 to 19	at and above the clay
GP-4-17	01/05/99	<25	13 to 17	at and above the clay
GP-5-15	01/05/99	<25	11 to 15	at and above the clay
GP-6-17	01/05/99	<25	13 to 17	at and above the clay
*GP-6-17	01/28/99	<b>100</b>	13 to 17	at and above the clay
GP-8-20	04/27/99	<25	16 to 20	at and above the clay
GP-9-15	04/27/99	<25	11 to 15	at and above the clay
GP-16-16	04/13/99	<25	12 to 16	at and above the clay
GP-20-16	04/13/99	<b>246</b>	12 to 16	at and above the clay
GP-21-14	04/26/99	<25	10 to 14	at and above the clay
GP-22-16	04/26/99	<25	12 to 16	at and above the clay
GP-23-14	04/26/99	<b>690</b>	10 to 14	at and above the clay
GP-24-20	04/26/99	<25	16 to 20	at and above the clay
GP-25-22	04/27/99	<28	18 to 22	at and above the clay
GP-28-12	04/27/99	<25	8 to 12	at and above the clay
GP-30-12	04/27/99	<25	8 to 12	at and above the clay
<b>Tentatively Identified Compounds</b>				
GP-8-20	4/27/1999	15 µg/l	2,3-dichlorobenzoic acid	

Laboratory Analysis by Method 8270 (acid extractables only)

all concentrations reported in micrograms per liter (ug/L)

< 25 = Concentration less than numeric values shown

\* = 1/28/99 confirmation samples analytical results obtained from select location. Sample ID ML-A = same as GP-10-16. Sample ID ML-B = same as GP-6-17. The "ML" prefix sample ID's were used during the resampling event for quality control (conceal prior sample IDs)

Table 10  
Groundwater Data Summary  
Marsh Lumber Company  
Pamplico, South Carolina  
S&ME Project No. 1584-98-146C



Sample ID	Position Relative to Bio-Sparge Well(s)	Distance To Bio-sparge Well (Feet)	Date Sample Collected	Method 8270 (BNA)				Method 8151	General Chemistry			Field Parameters							
				Pentachlorophenol		2,3,4,6 Tetrachlorophenol		PCP	Alkalinity	Chloride	TOC	DTGW	GWE	Temp	pH	Cond.	D.O.	ORP	Turbidity
				Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	(mg/L)	(mg/L)	(mg/L)	(feet)	(feet)	(Celsius)	(s.u.)	(µs/cm <sup>3</sup> )	(mg/L)	(millivolts)	(NTU)
MW-3A	Up-Gradient of Current Pilot Test	192	3/13/2018	<50	3.5	not detected	**	not requested	9.2	4.1	2.3	11.37	77.22	16.2	5.0	122	0.9	228	20.8
			2/18/2019	<24.8	3.5	<9.9	2.9	not requested	not requested	not requested	11.35	77.24	18.3	5.4	130	0.5	243	48.3	
			7/22/2019	not requested	not requested	not requested	not requested	<b>0.15 J</b>	not requested	not requested	not requested	11.69	76.90	25.6	4.9	146	0.4	264	7.21
MW-9	Up-Gradient		10/30/2019	<24.5	3.5	not requested	not requested	<b>1.8</b>	not requested	not requested	not requested	8.21	75.29	25.5	6.6	510	0.2	122	14.9
MW-11	Up-Gradient		10/30/2019	<24.0	3.4	not requested	not requested	<0.54	not requested	not requested	not requested	9.95	75.66	23.8	5.2	100	0.9	277	19.0
MW-16	Cross-Gradient	122	3/13/2018	<51	3.6	not detected	**	not requested	66.3	15.7	2.9	8.26	75.39	16.1	5.6	216	0.4	201	12.6
			2/19/2019	<25.0	3.5	<10.0	2.9	not requested	not requested	not requested	not requested	8.22	75.43	14.9	6.6	353	<b>1.1</b>	292	55.2
			7/22/2019	not requested	not requested	not requested	not requested	<b>0.80</b>	not requested	not requested	not requested	10.39	73.26	25.6	6.3	449	0.4	173	19.6
MW-18B	Down-gradient	170	3/13/2018	<51	3.6	not detected	**	not requested	382	11.9	1.4	7.07	73.10	15.3	6.7	616	0.8	34	0.3
			2/19/2019	<25.0	3.5	<10.0	2.9	<0.50	not requested	not requested	not requested	6.73	73.44	13.2	7.1	704	1.4	2	8.7
MW-19	Cross-Gradient	202	3/13/2018	<51	3.6	not detected	**	not requested	314	25.2	7.5	5.89	73.67	16.5	6.2	586	0.2	6	7.6
MW-20	Down-gradient of BSW-4	112	2/19/2019	<25.0	3.5	<10.0	2.9	<0.49	not requested	not requested	not requested	5.46	74.10	16.2	6.5	750	0.3	-61	19.4
			3/13/2018	<49	3.5	not detected	**	not requested	201	10.6	<1.0	7.17	73.42	16.7	7.0	335	0.2	-64	0.3
			9/19/2018	<27.2	3.8	<10.9	3.2	not requested	223	10.2	<1.0	6.63	73.42	24.1	7.0	432	0.2	-78	3.6
			2/20/2019	<25.0	3.5	<10.0	2.9	not requested	not requested	not requested	not requested	6.87	73.72	14.5	7.3	377	0.2	-98	7.4
			7/24/2019	<25.0	3.5	<10.0	2.9	<0.54	not requested	not requested	not requested	7.85	72.74	24.1	6.6	474	0.1	-83	2.7
MW-10	Down Gradient of BSW-4	31	9/14/2016	<50	4.6	not requested	not requested	not requested	302	12.0	1.9	6.77	76.53	25.2	6.7	546	0.0	-8	8.8
			12/8/2016	<50	4.6	not requested	not requested	not requested	235	18.2	1.9	8.22	75.08	19.9	6.4	664	<b>1.6</b>	15	8.2
			2/21/2017	<b>16.0 J</b>	4.6	<10	2.3	not requested	207	19.8	4.0	8.47	74.83	17.4	6.2	57	<b>2.1</b>	107	7.7
			5/24/2017	<25.0	2.4	<10	2.3	not requested	193	19.8	3.8	8.70	74.60	21.8	6.4	446	0.2	-149	6.3
			8/30/2017	<50	3.5	not requested	not requested	not requested	141	20.4	3.1	8.84	74.46	24.0	6.5	460	1.2	77	2.9
			3/14/2018	<52.1	3.7	not detected	**	not requested	114	18.3	3.4	8.35	74.95	15.8	5.5	390	0.4	130	6.8
			6/26/2018	<b>30.4</b>	3.5	<9.8	2.9	not requested	115	17.3	4.4	9.34	73.96	23.1	5.9	390	0.3	162	17.1
			9/19/2018	<25.5	3.6	<10.2	3.0	not requested	142	14.9	9.3	7.45	74.95	24.0	6.1	375	0.4	76	6.5
			2/19/2019	<25.0	3.5	<10.0	2.9	not requested	not requested	not requested	not requested	8.07	75.23	14.8	6.3	313	0.2	113	4.0
			7/23/2019	<25.0	3.5	<10.0	2.9	<b>59</b>	96	11.6	3.8	9.25	74.05	24.2	5.7	235	0.2	98	4.3
			10/29/2019	<24.0	3.4	not requested	not requested	<b>35</b>	not requested	not requested	not requested	9.94	74.05	23.1	5.9	206	0.4	105	7.0
RSL - Tapwater				0.041		240		0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Contaminant Level (MCL)				1		no standard		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

J = concentration shown is estimated

Bold value indicates a detection above the method reporting detection limit (MDL)

Yellow shaded cell indicates detected concentration is greater than the corresponding MCL



Table 10  
Groundwater Data Summary  
Marsh Lumber Company  
Pamplico, South Carolina  
S&ME Project No. 1584-98-146C



Sample ID	Position Relative to Bio-Sparge Well	Distance To Bio-sparge Well (Feet)	Date Sample Collected	Method 8270 (BNA)				Method 8151	General Chemistry			Field Parameters								
				Pentachlorophenol		2,3,4,6 Tetrachlorophenol		PCP	Alkalinity	Chloride	TOC	DTGW	GWE	Temp	pH	Cond.	D.O.	ORP	Turbidity	
				Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	(mg/L)	(mg/L)	(mg/L)	(feet)	(feet)	(Celsius)	(s.u.)	(µs/cm <sup>3</sup> )	(mg/L)	(millivolts)	(NTU)	
MW-14	Down Gradient of BSW-3	15	9/14/2016	<b>214</b>	4.6	not requested	not requested	not requested	35.7	8.4	4.7	5.51	75.6	26.5	5.1	13	0.0	77	4.9	
"			12/13/2016	<250	23.2	not requested	not requested	not requested	<5.0	12.6	9.6	5.97	75.14	17.6	5.0	142	6.7	225	489	
MW-14A			2/21/2017	<250	23.2	<100	22.6	not requested	3.2 J	16.3	12.7	7.05	74.06	41.4	5.8	81	2.4	272	228	
"			6/7/2017	<b>122</b>	4.6	<10.0	22.6	not requested	6.0	7.4	1.9	5.19	75.92	21.4	5.5	74	6.2	40	3.3	
"			8/30/2017	<50	3.5	not requested	not requested	not requested	9.2	8.4	1.4	5.88	75.23	24.9	6.0	83	6.7	103	2.0	
"			3/14/2018	<50	3.5	not detected	**	not requested	<5.0	8.5	1.5	4.55	76.56	15.6	5.5	65	8.6	381	7.6	
"			6/26/2018	<24.5	3.5	<9.8	2.9	not requested	<5.0	9.2	1.4	5.52	75.59	23.4	5.0	79	5.9	194	16.0	
"			9/21/2018	<26.6	3.7	<10.6	3.1	not requested	5.3	8.8	2.5	4.21	76.56	23.2	5.3	90	6.6	233	12.1	
"			2/20/2019	<25.0	3.5	<10.0	2.9	<0.51	26.2	8.9	2.5	4.59	76.52	13.4	6.2	111	8.3	337	8.9	
"	7/23/2019	<25.0	3.5	<10.0	2.9	<0.53	14.2	9.5	2.5	5.13	75.98	24.4	5.7	104	6.4	309	5.0			
MW-15	Down Gradient of BSW-5	70	9/14/2016	<50	4.6	not requested	not requested	not requested	346	25.2	9.1	8.34	73.98	26.0	6.1	663	0.3	-64	14.9	
"			12/8/2016	<50	4.6	not requested	not requested	not requested	322	24.1	10.4	8.64	73.68	18.5	6.2	843	4.5	-65	6.1	
"			2/21/2017	<25	2.3	<10	2.3	not requested	312	23.8	7.3	9.34	72.98	16.5	6.6	627	0.0	-16	5.5	
"			5/23/2017	<31.2	2.9	<12.5	1.2	not requested	306	21.4	6.4	9.14	73.18	20.6	6.3	612	0.2	-46	10.2	
"			8/30/2017	<50	3.5	not requested	not requested	not requested	318	20.6	8.6	9.31	73.01	25.5	6.5	658	0.7	-32	4.4	
"			3/13/2018	<52.1	3.7	not detected	**	not requested	352	18.1	7.4	8.37	73.59	16.7	6.1	570	0.2	-24	8.6	
"			9/19/2018	<24.8	3.5	<9.9	2.9	not requested	331	15.7	12.1	8.91	73.59	25.6	6.2	680	0.2	-52	9.6	
"			2/20/2019	<25.0	3.5	<10.0	2.9	<0.48	not requested	not requested	not requested	8.89	73.43	13.6	6.4	713	0.2	-40	10.4	
"			7/22/2019	<b>46.6</b>	3.5	<10.0	2.9	<0.51	not requested	not requested	not requested	9.41	72.91	25.3	6.0	717	0.1	-47	5.0	
"			10/29/2019	<24.5	3.5	not requested	not requested	<0.53	not requested	not requested	not requested	10.38	71.94	23.3	6.2	741	2.4	-39	8.3	
"			10/29/2019	<24.8	3.5	not requested	not requested	<0.49	not requested	not requested	not requested	duplicate	duplicate	duplicate	duplicate	duplicate	duplicate	duplicate	duplicate	duplicate
RSL - Tapwater				0.041		240		0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Maximum Contaminant Level (MCL)				1		no standard		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

J = concentration shown is estimated

Bold value indicates a detection above the method reporting detection limit (MDL)

Yellow shaded cell indicates detected concentration is greater than the corresponding MCL

Biosparge Pilot Test #2 began 2009 at BSW-3 only, near MW-14A

**Table 10**  
**Groundwater Data Summary**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample ID	Position Relative to Bio-Sparge Well	Distance To Bio-sparge Well (Feet)	Date Sample Collected	Method 8270 (BNA)				Method 8151	General Chemistry			Field Parameters							
				Pentachlorophenol		2,3,4,6 Tetrachlorophenol		PCP	Alkalinity	Chloride	TOC	DTGW	GWE	Temp	pH	Cond.	D.O.	ORP	Turbidity
				Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	(mg/L)	(mg/L)	(mg/L)	(feet)	(feet)	(Celsius)	(s.u.)	(µs/cm <sup>3</sup> )	(mg/L)	(millivolts)	(NTU)
MW-21	Up Gradient of BSW-3	76	9/15/2016	16.5 J	4.6	not requested	not requested	not requested	26.7	8.9	2.1	7.94	76.1	28.8	5.5	161	0.0	189	19.0
			12/14/2016	<50	4.6	not requested	not requested	not requested	18.3	9.1	1.0	6.10	77.94	19.5	5.4	148	2.1	146	0.2
			2/21/2017	6.5 J	2.3	not requested	not requested	not requested	15.9	9.1	1.5	7.66	76.38	17.3	5.8	102	0.1	214	4.0
			5/24/2017	<31.2	2.9	<12.5	1.2	not requested	8.4	9.0	1.8	7.67	76.37	21.2	5.0	79	0.3	109	7.2
			8/30/2017	<50	3.5	not requested	not requested	not requested	8.9	9.1	1.5	8.11	75.93	25.7	5.3	85	0.8	117	4.3
			3/14/2018	<52.1	3.7	not detected	**	not requested	7.1	7.9	1.8	7.13	76.91	16.1	4.7	92	1.3	212	8.0
			2/21/2019	<24.8	3.5	<9.9	2.9	not requested	58.5	7.3	4.1	7.20	76.84	16.5	6.1	148	0.6	255	26.3
			7/24/2019	<25.0	3.5	<10.0	2.9	0.15 J	not requested	not requested	not requested	7.70	76.34	23.9	6.0	162	0.2	177	34.6
MW-22	Cross Gradient of BSW-8	32	9/15/2016	<50	4.6	not requested	not requested	not requested	178	5.7	<1.0	5.79	75.95	29.0	6.5	308	0.0	-56	13.0
			12/8/2016	294	4.6	not requested	not requested	not requested	153	8.5	<1.0	5.56	76.18	18.4	6.5	369	1.8	33	1.5
			2/21/2017	472	11.6	5.3 J	2.3	not requested	93.9	9.8	1.2	5.87	75.87	18.5	6.0	144	0.0	198	2.5
			5/24/2017	358	125	<10	1.2	not requested	31.3	10.6	1.7	6.21	75.53	20.8	5.4	120	0.2	-165	2.6
			8/30/2017	339	7.0	not requested	not requested	not requested	27.3	11.4	1.6	6.39	75.35	24.3	5.6	121	1.0	132	1.7
			3/14/2018	271	3.4	not detected	**	not requested	31.4	10	2.1	5.73	76.01	14.0	5.1	116	0.2	256	0.0
			6/26/2018	150	17.3	<9.8	2.9	not requested	29.8	9.6	1.2	6.84	74.90	24.3	4.8	131	0.2	161	0.6
			9/20/2018	186	18.0	<10.2	3.0	not requested	27.8	8.8	3.5	4.76	76.09	24.6	5.2	123	0.2	201	1.6
			2/18/2019	128	3.5	<9.8	2.9	83	47.8	7.3	1.7	5.67	76.07	16.5	5.5	131	0.3	190	0.1
			7/24/2019	83.8	3.5	<10.0	2.9	130	24.4	8.8	2.3	6.85	74.89	25.4	5.2	113	0.2	218	1.0
MW-23	Down Gradient of BSW-6	70	9/15/2016	<50	4.6	not requested	not requested	not requested	297	7.1	11.8	7.57	73.80	27.0	6.2	558	0.0	-36	11.9
			12/13/2016	<50	4.6	not requested	not requested	not requested	403	11.0	14.4	7.20	74.17	17.4	6.4	934	2.5	-74	1.0
			2/21/2017	<25	2.3	<10	2.3	not requested	368	14.4	12.2	7.62	73.75	15.8	6.9	686	0.0	-43	7.1
			5/23/2017	<31.2	2.9	<12.5	1.2	not requested	400	14.6	13	7.79	73.58	20.7	6.4	807	0.2	-55	1.1
			8/30/2017	<50	3.5	not requested	not requested	not requested	404	15.8	12.1	8.03	73.34	25.6	6.7	799	0.6	-59	3.2
			3/14/2018	<52.1	3.7	not detected	**	not requested	640	17.4	15	7.30	74.07	14.8	6.4	969	0.1	-64	4.1
			9/21/2018	<25.0	3.5	<10.0	2.9	not requested	454	18.6	15.5	7.79	74.07	23.9	6.6	873	0.2	-93	2.3
			2/18/2019	<24.5	3.5	<9.8	3.5	<0.50	680	21.9	3.9	7.39	73.98	16.6	6.6	1,148	0.3	-87	24.7
			7/25/2019	<25.0	3.5	<10.0	2.9	<0.54	not requested	not requested	not requested	8.09	73.28	25.3	6.4	1,216	0.1	-88	3.8
			RSL - Tapwater				0.041		240		0.041	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Contaminant Level (MCL)				1		no standard		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

J = concentration shown is estimated

Bold value indicates a detection above the method reporting detection limit (MDL)

Yellow shaded cell indicates detected concentration is greater than the corresponding MCL

QA/QC samples: "Duplicate" collected on 9/15/2016 at MW-21, "Dup-1" collected on 12/13/2016 at MW-23, and "Duplicate" collected on 2/21/2017 at MW-14

Expanded Biosparge Pilot Test #2 startup on May 29, 2018

**Table 10**  
**Groundwater Data Summary**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample ID	Position Relative to Bio-Sparge Well	Distance To Bio-sparge Well (Feet)	Date Sample Collected	Method 8270 (BNA)				Method 8151	General Chemistry			Field Parameters							
				Pentachlorophenol		2,3,4,6 Tetrachlorophenol		PCP	Alkalinity	Chloride	TOC	DTGW	GWE	Temp	pH	Cond.	D.O.	ORP	Turbidity
				Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	(mg/L)	(mg/L)	(mg/L)	(feet)	(feet)	(Celsius)	(s.u...)	(µs/cm <sup>3</sup> )	(mg/L)	(millivolts)	(NTU)
MW-13A	Up Gradient of BSW-6	82	11/3/2017	<25	3.5	not requested	not requested	not requested	not requested	not requested	not requested	8.35	75.17	28.5	7.2	779	0.7	-150	3.5
			3/13/2018	<50	3.5	not detected	**	not requested	267	40.6	1.8	6.90	76.62	15.3	7.0	780	0.5	-57	121.0
			9/20/2018	<25.0	3.5	<10.0	2.9	not requested	323	92.1	9.6	6.19	76.62	25.2	6.8	719	0.1	-105	36.6
			2/21/2019	<24.5	3.5	<9.8	2.9	not requested	286	48.1	1.2	6.75	76.77	19.8	7.0	774	0.1	-103	23.9
			7/25/2019	<25.0	3.5	<10.0	2.9	<0.54	not requested	not requested	not requested	7.75	75.77	25.1	6.8	618	0.1	-99	3.4
MW-24	Cross Gradient of BSW-7	28	5/24/2017	<31.2	31.2	<12.5	1.2	not requested	1390	16.6	38.4	5.89	75.34	22.8	6.8	2,335	0.2	-176	21.5
			8/30/2017	<50	3.5	not requested	not requested	not requested	1300	16.4	38.0	6.53	74.70	24.5	7.0	2,113	0.5	-93	7.8
			3/14/2018	<50	3.5	not detected	**	not requested	1480	15.3	36.1	5.56	75.67	15.4	6.7	2,088	0.1	-134	2.6
			6/27/2018	<24.5	3.5	<9.8	2.9	not requested	1550	16.1	43.3	6.44	74.79	23.5	6.7	2,567	0.2	-133	11.4
			9/21/2018	<24.5	3.5	<9.8	2.9	not requested	1020	16.4	40.9	6.48	75.67	25.4	6.9	1,753	0.1	-144	12.8
			2/18/2019	<24.5	3.5	<9.8	2.9	<0.54	1310	16.2	37.2	5.58	75.65	15.8	7.0	2,037	0.4	-155	38.7
			7/25/2019	<25.0	3.5	<10.0	2.9	<0.55	1380	22.0	39.0	6.04	75.19	25.3	6.8	208	0.1	-145	8.1
MW-25	Up Gradient of BSW-6	25	11/2/2017	<b>151</b>	3.5	not requested	not requested	not requested	not requested	not requested	not requested	6.30	74.19	29.3	6.4	57	0.5	-19	112.0
			3/14/2018	<b>114</b>	3.7	not detected	**	not requested	121	10	4.2	5.02	75.47	14.9	5.3	287	0.3	43	21.0
			6/26/2018	<b>72.5</b>	3.5	<9.8	2.9	not requested	117	9.2	4.1	5.89	74.60	24.6	5.5	309	0.3	-2	7.6
			9/20/2018	<b>55.8</b>	3.5	<9.8	2.9	not requested	106	8	4.2	5.02	75.47	26.8	5.8	280	0.2	6	8.2
			2/20/2019	<b>47.4</b>	3.5	<10.0	2.9	not requested	84.7	9.2	3.6	5.01	75.48	13.5	6.0	208	0.2	31	12.0
			7/23/2019	<b>40.2</b>	3.5	<10.0	2.9	<b>42</b>	89.2	9.0	5.0	5.52	74.97	27.0	5.7	251	0.1	2	9.2
MW-26	Cross Gradient of BSW-6	18	11/2/2017	<25	3.5	not requested	not requested	not requested	not requested	not requested	not requested	7.08	74.13	28.4	6.4	285	0.6	17	6.9
			3/14/2018	<55.6	3.9	not detected	**	not requested	170	11.2	2.3	5.75	75.46	16.3	5.8	345	0.2	-27	241
			6/27/2018	<24.5	3.5	<9.8	2.9	not requested	174	10.6	1.5	6.54	74.67	22.0	5.8	369	0.1	4	14
			9/20/2018	<25.0	3.5	<10.0	2.9	not requested	151	10.2	1.6	5.84	75.46	23.9	6	325	0.2	-4	13.4
			2/21/2019	<24.5	3.5	<9.8	2.9	not requested	166	11.2	1.5	5.7	75.51	15.5	6.4	319	0.3	35	19
			7/23/2019	<25.0	3.5	<10.0	2.9	<0.55	127	11.8	2.4	6.18	75.03	24.1	5.9	278	0.1	1	8.7
RSL - Tapwater				0.041		240		0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Contaminant Level (MCL)				1		no standard		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

J = concentration shown is estimated

Bold value indicates a detection above the method reporting detection limit (MDL)

Yellow shaded cell indicates detected concentration is greater than the corresponding MCL

\*\* Not detected as a Tentatively Identified Compound (TIC) by the analytical laboratory

Expanded Biosparge Pilot Test #2 startup on May 29, 2018



**Table 10**  
**Groundwater Data Summary**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample ID	Position Relative to Bio-Sparge Well	Distance To Bio-sparge Well (Feet)	Date Sample Collected	Method 8270 (BNA)				Method 8151			General Chemistry			Field Parameters					
				Pentachlorophenol		2,3,4,6 Tetrachlorophenol		PCP Result (µg/L)	Alkalinity (mg/L)	Chloride (mg/L)	TOC (mg/L)	DTGW (feet)	GWE (feet)	Temp (Celsius)	pH (s.u.)	Cond. (µs/cm <sup>3</sup> )	D.O. (mg/L)	ORP (millivolts)	Turbidity (NTU)
				Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)												
MW-27	Up Gradient of BSW-5	25	11/2/2017	323	3.5	not requested	not requested	not requested	not requested	not requested	7.60	74.57	26.4	6.0	181	1.1	-24	2.2	
			3/14/2018	<56.8	4.0	not detected	**	not requested	35	8.7	1.8	6.29	75.91	17.5	5.1	140	0.4	81	10.6
			6/26/2018	<24.5	3.5	<9.8	2.9	not requested	32.9	7.6	1.5	7.07	75.13	22.1	5.1	140	0.4	20	6.7
			9/19/2018	<25.5	3.6	<10.2	3.0	not requested	22.4	6.9	1.7	5.49	75.91	24.6	5.2	116	0.6	-9	8.8
			2/20/2019	<25.0	3.5	<10.0	2.9	2.0	24.9	7.6	1.9	6.16	76.04	14.2	5.5	107	0.5	144	8.9
			7/24/2019	<25.0	3.5	<10.0	2.9	2.5	12.0	8.3	2.1	6.65	75.55	24.2	4.8	103	0.3	150	5.1
MW-28	Up Gradient of BSW-3	30	11/3/2017	351	3.5	not requested	not requested	not requested	not requested	not requested	7.95	75.03	23.9	5.7	153	1.1	-50	0.3	
			3/14/2018	262	3.5	not detected	**	not requested	13.8	8.1	1.5	6.31	76.72	14.3	5.0	95	0.4	246	0.3
			6/27/2018	128	6.9	<9.8	2.9	not requested	12.6	7.9	1.5	7.39	75.64	22.5	4.2	110	0.3	131	3.4
			9/20/2018	252	18.7	<10.6	3.1	not requested	13.7	7.6	1.7	5.29	76.72	25.5	4.9	116	0.3	220	5.5
			2/21/2019	151	17.3	<9.8	2.9	not requested	15.5	8.4	2.1	6.46	76.57	15.7	5.2	109	0.4	203	5.0
			7/24/2019	371	17.6	<10.0	2.9	310	6.8	8.9	2.3	6.91	76.12	24.6	4.7	100	0.2	303	1.1
MW-29	Up Gradient of BSW-8	90	11/3/2017	51.7	3.5	not requested	not requested	not requested	not requested	not requested	7.76	75.15	27.1	7.0	487	0.5	-141	4.6	
			3/14/2018	<51	3.6	not detected	**	not requested	220	6.1	1.4	6.23	76.67	17.3	6.5	383	0.1	55	6.3
			9/20/2018	41.4	3.5	<10.0	2.9	not requested	228	5.6	1.4	5.29	76.67	24.0	6.5	435	0.2	134	13.8
			2/21/2019	<24.5	3.5	<9.8	2.9	not requested	160	5.8	1.4	6.11	76.79	19.5	6.5	309	0.2	142	15.6
			7/22/2019	<25.0	3.5	<10.0	2.9	29	not requested	not requested	not requested	7.24	75.66	24.5	6.2	350	0.2	140	8.2
MW-30	Cross Gradient of BSW-8	38	11/3/2017	<25	3.5	not requested	not requested	not requested	not requested	not requested	6.25	75.13	29.2	7.1	740	0.5	-156	8.2	
			3/13/2018	<52.1	3.7	not detected	**	not requested	340	19.7	3.6	5.06	76.52	16.4	6.5	723	0.3	-47	47.8
			6/27/2018	<24.5	3.5	<9.8	2.9	not requested	346	19.8	3.3	5.98	75.60	21.9	6.5	749	0.2	-45	24.5
			9/20/2018	<25.0	3.5	<10.0	2.9	not requested	325	16.9	3.8	4.51	76.52	25.7	6.7	691	0.2	-83	24.6
			2/19/2019	<25.0	3.5	<10.0	2.9	2.4	295	18.8	2.8	4.98	76.60	14.4	7.0	603	0.2	-43	39.5
			7/25/2019	<25.0	3.5	<10.0	2.9	3.3	284	17.3	3.4	5.69	75.89	24.7	6.7	568	0.1	-82	2.6
RSL - Tapwater				0.041		240		0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Maximum Contaminant Level (MCL)				1		no standard		1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

J = concentration shown is estimated

Bold value indicates a detection above the method reporting detection limit (MDL)

Yellow shaded cell indicates detected concentration is greater than the corresponding MCL

\*\* Not detected as a Tentatively Identified Compound (TIC) by the analytical laboratory

Expanded Biosparge Pilot Test #2 startup on May 29, 2018

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachloro-phenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichloro-phenol	2,4,6-Trichloro-phenol**	2,4,5-Trichloro-phenol	1,2,3,4-Tetrachloro-phenol	3,4,5-Trichloro-phenol
MW-1	1/6/1993	nd	nd	nd	nd	nd	not requested	not requested
	2/10/1993	nd	nd	nd	nd	nd	not requested	not requested
	10/18/1993	nd	nd	nd	nd	nd	not requested	not requested
	1/5/1999	nd	nd	nd	nd	nd	not requested	not requested
	8/16/2000	<50	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<20	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<20	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/14/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/21/2006	<20	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/3/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested	
6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested	
5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested	
5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested	
2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachloro-phenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichloro-phenol	2,4,6-Trichloro-phenol**	2,4,5-Trichloro-phenol	1,2,3,4-Tetrachloro-phenol	3,4,5-Trichloro-phenol
MW-2	1/6/1993	nd	nd	nd	nd	nd	not requested	not requested
	10/18/1993	nd	nd	nd	nd	nd	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
MW-4	1/6/1993	nd	nd	nd	nd	nd	not requested	not requested
	10/18/1993	nd	nd	nd	nd	nd	not requested	not requested
MW-8	1/5/1999	nd	nd	nd	nd	nd	not requested	not requested
	8/16/2000	<b>320</b>	ANR	<10	<10	<10	not requested	not requested
MW-12	10/18/1993	nd	<b>22</b>	nd	nd	nd	not requested	not requested
	7/24/1998	nd	nt	nd	nd	nd	not requested	not requested
DS-1	8/22/2006	<20	ANR	<10	<10	ANR	not requested	not requested
DS-2	8/22/2006	<20	ANR	<10	<10	ANR	not requested	not requested
DS-3D	8/22/2006	<20	ANR	<10	<10	ANR	not requested	not requested
GWS-1	10/31/2017	<b>323</b>	<6	<10	<10	<10	not requested	not requested
BSW-2	3/5/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	7/13/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	10/1/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS



**TABLE 11**  
**HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY**  
**MARSH LUMBER COMPANY**  
**PAMPLICO, SOUTH CAROLINA**  
**S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-3	1/6/1993	4000	nd	13	14	380	not requested	not requested
	2/10/1993	4300	nd	11	15	290	not requested	not requested
	10/18/1993	3000	nd	nd	nd	170	not requested	not requested
	7/24/1998	215	nt	nd	nd	nd	not requested	not requested
	1/5/1999	271	nt	nd	nd	nd	not requested	not requested
	4/27/1999	145	nt	nd	nd	nd	17	15
	8/16/2000	230	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	128	<10	<10	<10	<10	not requested	not requested
	10/22/2001	134	<10	<10	<10	<10	not requested	not requested
	4/24/2002	166	ANR	<50	<50	ANR	not requested	not requested
	10/22/2002	201	ANR	<20	<20	ANR	not requested	not requested
	5/20/2003	193/"194"	ANR	<20	<20	ANR	not requested	not requested
	12/11/2003	295	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	well not found	well not found	well not found	well not found	well not found	well not found	well not found
MW-3A	12/15/2004	795	ANR	<10	<10	ANR	not requested	not requested
MW-3A	6/15/2005	360	ANR	<10	<10	ANR	not requested	not requested
MW-3A	12/19/2005	204	ANR	<10	<10	ANR	not detected	not detected
MW-3A	8/22/2006	169	ANR	<10	<10	ANR	not requested	not requested
MW-3A	1/24/2007	112	ANR	<10	<10	ANR	not requested	not requested
MW-3A	10/3/2007	117	ANR	<10	<10	ANR	not requested	not requested
MW-3A	7/24/2008	71	ANR	<10	<10	ANR	not requested	not requested
MW-3A	1/8/2009	115	ANR	<10	<10	ANR	not requested	not requested
MW-3A	7/13/2009	268	ANR	<10	<10	ANR	not requested	not requested
MW-3A	10/1/2009	303	ANR	<10	<10	ANR	not requested	not requested
MW-3A	1/7/2010	307	ANR	<10	<10	ANR	not requested	not requested
MW-3A	6/23/2010	35.8 J	ANR	<10	<10	ANR	not requested	not requested
MW-3A	5/25/2011	13.9 J	ANR	<10	<10	ANR	not requested	not requested
MW-3A	5/16/2013	5 J	ANR	<10	<10	ANR	not requested	not requested
MW-3A	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-3A	2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-3A	3/13/2018	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-3A	2/18/2019	<24.8	<5.9	<9.8	<9.8	<9.8	not requested	not requested
Corresponding MCL		1	6	NS	NS	NS	NS	NS

MW-3 damaged and replaced with MW-3A

**TABLE 11**  
**HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY**  
**MARSH LUMBER COMPANY**  
**PAMPLICO, SOUTH CAROLINA**  
**S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-9	10/18/1993	nd	<b>21</b>	nd	nd	nd	not requested	not requested
	1/5/1999	nd	nt	nd	nd	nd	not requested	not requested
	8/16/2000	<50	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<20	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<20	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/14/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/20/2006	<20	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/3/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
5/16/2013	<b>2 J</b>	ANR	<10	<10	ANR	not requested	not requested	
2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-10	10/18/1993	62	18	nd	nd	nd	not requested	not requested
	7/24/1998	76	nd	nd	nd	nd	not requested	not requested
	1/5/1999	58	nt	nd	nd	nd	not requested	not requested
	4/27/1999	35	nt	nd	nd	nd	not detected	not detected
	8/16/2000	53	ANR	<10	<10	<10	not detected	not detected
	3/28/2001	<20	<10	<10	<10	<10	not detected	not detected
	10/22/2001	185	<10	<10	<10	<10	not requested	not requested
	4/24/2002	240 / {220}	ANR	<50	<50	ANR	not requested	not requested
	10/22/2002	155 / {241}	ANR	<20	<20	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	10 J	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/15/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	11	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	8.4 J	ANR	<10	<10	ANR	not detected	not detected
	7/20/2006	2 J	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/3/2007	128	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	90	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	7 J	ANR	<10	<10	ANR	not requested	not requested
	3/5/2009	5 J	ANR	<10	3 J	ANR	not requested	not requested
	1/7/2010	5 J	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	1.8 J	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	2 J	ANR	2 J	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	9/14/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	12/8/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/21/2017	16.0 J	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	5/24/2017	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
8/30/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
3/14/2018	<52.1	<6.3	<10.4	<10.4	<10.4	not detected	not detected	
6/26/2018	30.4	<5.9	<9.8	<9.8	<9.8	not requested	not requested	
9/19/2018	<25.5	<6.1	<10.2	<10.2	<10.2	not requested	not requested	
2/19/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS



**TABLE 11  
 HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
 MARSH LUMBER COMPANY  
 PAMPLICO, SOUTH CAROLINA  
 S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachloro-phenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichloro-phenol	2,4,6-Trichloro-phenol**	2,4,5-Trichloro-phenol	1,2,3,4-Tetrachloro-phenol	3,4,5-Trichloro-phenol
MW-11	10/18/1993	nd	<b>14</b>	nd	nd	nd	not requested	not requested
	1/5/1999	nd	nt	nd	nd	nd	not requested	not requested
	8/16/2000	<b>19</b>	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<20	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<20	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/15/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/20/2006	<20	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/4/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested	
5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested	
2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-13	8/16/2000	<50	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<20	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<20	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/15/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/20/2006	<20	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/3/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-13A	2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-13A	11/3/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-13A	3/13/2018	<50	<6.0	<10.0	<10.0	<10.0	not detected	not detected
MW-13A	9/20/2018	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-13A	2/21/2019	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
Corresponding MCL		1	6	NS	NS	NS	NS	NS

MW-13 damaged and replaced with MW-13A

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-14	8/16/2000	<b>1100</b>	ANR	<10	<10	<b>15</b>	not requested	not requested
	3/28/2001	<b>734</b>	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<b>2020</b>	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<b>595 / (950)</b>	ANR	<400	<400	ANR	not requested	not requested
	10/22/2002	<b>741 / {908}</b>	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<b>557/"576"</b>	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<b>650</b>	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<b>590</b>	ANR	<10	<10	ANR	not requested	not requested
	12/15/2004	<b>625</b>	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<b>482</b>	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<b>411</b>	ANR	<10	<10	ANR	not detected	<b>13</b>
	7/20/2006	well not found	well not found	well not found	well not found	well not found	well not found	well not found
	1/24/2007	<b>584</b>	ANR	<10	<10	ANR	not requested	not requested
	10/4/2007	<b>42</b>	ANR	<10	<b>11</b>	ANR	not requested	not requested
	7/24/2008	<b>264</b>	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<b>142</b>	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<b>129</b>	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<b>133</b>	ANR	<10	<b>2.0 J</b>	ANR	not requested	not requested
	5/25/2011	<b>371</b>	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<b>333</b>	ANR	<10	<10	ANR	not requested	not requested
2/5/2016	<b>214 / (279)</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
9/14/2016	<b>214</b>	<6.0	<10.0	<10.0	<10.0	not detected	<b>11.5 J</b>	
12/13/2016	<250	<30	<50	<50	<50	not requested	not requested	
2/21/2017	<250 / (<250)	<60.0	<100	<100	<100	not requested	not requested	
MW-14A	6/7/2017	<b>122</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-14A	8/30/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-14A	3/14/2018	<50	<6.0	<10.0	<10.0	<10.0	not detected	not detected
MW-14A	6/26/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-14A	9/21/2018	<26.6	<6.4	<10.6	<10.6	<10.6	not requested	not requested
MW-14A	2/20/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
Corresponding MCL		1	6	NS	NS	NS	NS	NS



**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-15	8/16/2000	<50	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<20	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<20	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<b>551</b>	ANR	<10	<10	ANR	not requested	not requested
	6/16/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/14/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/21/2006	<20	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/4/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	9/14/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	12/8/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	5/23/2017	<31.2	<7.5	<12.5	<12.5	<12.5	not requested	not requested
8/29/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
3/13/2018	<52.1	<6.3	<10.4	<10.4	<10.4	not requested	not requested	
9/19/2018	<24.8	<5.9	<9.9	<9.9	<9.9	not requested	not requested	
2/20/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
 HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
 MARSH LUMBER COMPANY  
 PAMPLICO, SOUTH CAROLINA  
 S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-16	8/16/2000	<b>16</b>	ANR	<10	<10	<10	not requested	not requested
	3/28/2001	<b>27</b>	<10	<10	<10	<10	not requested	not requested
	10/22/2001	<b>56</b>	<10	<10	<10	<10	not requested	not requested
	4/24/2002	<b>38</b>	nt	nd	nd	nd	not requested	not requested
	10/22/2002	<20	ANR	<10	<10	ANR	not requested	not requested
	5/20/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	12/11/2003	<20	ANR	<10	<10	ANR	not requested	not requested
	5/25/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	12/14/2004	<20	ANR	<10	<10	ANR	not requested	not requested
	6/15/2005	<20	ANR	<10	<10	ANR	not requested	not requested
	12/19/2005	<20	ANR	<10	<10	ANR	not detected	not detected
	7/20/2006	<b>1.9 J</b>	ANR	<10	<10	ANR	not requested	not requested
	1/24/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/4/2007	<b>2 J</b>	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<b>3 J</b>	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<b>4 J</b>	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<b>5.8 J</b>	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<b>7 J</b>	ANR	<10	<10	ANR	not requested	not requested
2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
2/20/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
3/13/2018	<51	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
2/19/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-17	3/28/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	10/3/2007	<20	ANR	<10	<10	ANR	not requested	not requested
	7/24/2008	<20	ANR	<10	<10	ANR	not requested	not requested
	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-17A	9/15/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-17A	2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-18A	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/20/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-18B	1/8/2009	<20	ANR	<10	<10	ANR	not requested	not requested
	1/7/2010	<20	ANR	<10	<10	ANR	not requested	not requested
	6/23/2010	<50	ANR	<10	<10	ANR	not requested	not requested
	5/25/2011	<50	ANR	<10	<10	ANR	not requested	not requested
	5/16/2013	<20	ANR	<10	<10	ANR	not requested	not requested
	2/5/2016	<20	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/20/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/13/2018	<51	<6.0	<10.0	<10.0	<10.0	not requested	not requested
2/19/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested	
Corresponding MCL		1	6	NS	NS	NS	NS	NS



**TABLE 11**  
**HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY**  
**MARSH LUMBER COMPANY**  
**PAMPLICO, SOUTH CAROLINA**  
**S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachloro-phenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichloro-phenol	2,4,6-Trichloro-phenol**	2,4,5-Trichloro-phenol	1,2,3,4-Tetrachloro-phenol	3,4,5-Trichloro-phenol
MW-19	9/15/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/20/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/13/2018	<51	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/19/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-20	9/15/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/21/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/13/2018	<49	<5.9	<9.8	<9.8	<9.8	not detected	not detected
	9/19/2018	<27.2	<6.5	<10.9	<10.9	<10.9	not requested	not requested
	2/20/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-21	9/15/2016	<b>16.6 J(21.5 J)</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	12/13/2016	<50	<6.0	<10.0	<10.0	<10.0	not detected	not detected
	2/22/2017	<b>6.5 J</b>	<6.0	<10.0	<10.0	<10.0	not detected	not detected
	5/23/2017	<31.2	<7.5	<12.5	<12.5	<12.5	not detected	not detected
	8/30/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<52.1	<6.3	<10.4	<10.4	<10.4	not detected	not detected
	2/21/2019	<24.8	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-22	9/15/2016	<50	<6.0	<10.0	<10.0	<10.0	not detected	not detected
	12/13/2016	<b>294</b>	<6.0	<10.0	<10.0	<10.0	not detected	<b>5.8 J</b>
	*	<b>472</b>	<6.0	<10.0	<10.0	<10.0	not detected	<b>12.0 J</b>
		<b>358</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
		<b>339</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
		<b>271</b>	<5.8	<9.6	<9.6	<9.6	not detected	<b>10.238</b>
		<b>150</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
		<b>186</b>	<6.1	<10.2	<10.2	<10.2	not requested	not requested
		<b>128</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	Corresponding MCL		1	6	NS	NS	NS	NS

\*\* = Reported pentachlorophenol biodegradation compounds

\* 2,3,4,6-Tetrachlorophenol reported concentration = 5.3 J at MW-22 on this sampling date

**TABLE 11**  
**HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY**  
**MARSH LUMBER COMPANY**  
**PAMPLICO, SOUTH CAROLINA**  
**S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachloro-phenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichloro-phenol	2,4,6-Trichloro-phenol**	2,4,5-Trichloro-phenol	1,2,3,4-Tetrachloro-phenol	3,4,5-Trichloro-phenol
MW-23	9/15/2016	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	12/13/2016	<50 / (<50)	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/22/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	5/23/2017	<31.2	<7.5	<12.5	<12.5	<12.5	not requested	not requested
	8/30/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<52.1	<6.3	<10.4	<10.4	<10.4	not detected	not detected
	9/21/2018	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/18/2019	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-24	5/24/2017	<31.2	<7.5	<12.5	<12.5	<12.5	not requested	not requested
	8/30/2017	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<50	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	6/27/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/21/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	2/18/2019	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-25	11/2/2017	<b>151</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<b>114</b>	<6.4	<10.6	<10.6	<10.6	not detected	not detected
	6/26/2018	<b>72.5</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/20/2018	<b>55.8</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	2/20/2019	<b>47.4</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-26	11/2/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<55.6	<6.7	<11.1	<11.1	<11.1	not detected	not detected
	6/27/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/20/2018	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/21/2019	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
Corresponding MCL		1	6	NS	NS	NS	NS	NS

**TABLE 11  
HISTORIC GROUNDWATER ANALYTICAL DATA SUMMARY  
MARSH LUMBER COMPANY  
PAMPLICO, SOUTH CAROLINA  
S&ME PROJECT NO. 1584-98-146C**



Sample Location	Date Collected	Method 8270 (BNA or Acid Extractable List)					Tentatively Identified Compounds	
		Pentachlorophenol	bis(2-Ethylhexyl)-phthalate	2,4-Dichlorophenol	2,4,6-Trichlorophenol**	2,4,5-Trichlorophenol	1,2,3,4-Tetrachlorophenol	3,4,5-Trichlorophenol
MW-27	11/2/2017	<b>323</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<56.8	<6.8	<11.4	<11.4	<11.4	not detected	not detected
	6/26/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/19/2018	<25.5	<6.1	<10.2	<10.2	<10.2	not requested	not requested
	2/20/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
MW-28	11/3/2017	<b>351</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<b>262</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	6/27/2018	<b>128</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/20/2018	<b>252</b>	<6.4	<10.6	<10.6	<10.6	not requested	not requested
	2/21/2019	<b>151</b>	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-29	11/3/2017	<b>51.7</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/14/2018	<51	<6.1	<10.2	<10.2	<10.2	not detected	not detected
	9/20/2018	<b>41.4</b>	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/21/2019	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
MW-30	11/3/2017	<25	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	3/13/2018	<52.1	<6.3	<10.4	<10.4	<10.4	not detected	not detected
	6/27/2018	<24.5	<5.9	<9.8	<9.8	<9.8	not requested	not requested
	9/20/2018	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
	2/19/2019	<25.0	<6.0	<10.0	<10.0	<10.0	not requested	not requested
Corresponding MCL		1	6	NS	NS	NS	NS	

all concentrations reported in micrograms per liter (µg/l)

J = An estimated value less than the reporting value.'

MCL = Maximum Contaminant Levels

NS = no standard

nd = not detected

ANR = analyte not requested

**25 / (25)** Sample analytical result on left. Analytical result for duplicate sample on the right in parenthesis

\*\* = Reported pentachlorophenol biodegradation compounds

**155/ {241}** = The number on the left is the analytical results for the sample collected following normal well purging procedures. The bracketed number on the right represents the analytical results for the sample collected with no purging prior to sample collection.

The bracketed number on the right represents the analytical results for the sample collected with no purging prior to sample collection.

557/"576" The value on the left is for pre-acidified samples preparation used site wide. The 2nd value for the split sample result with no pre-acidification.

green shaded cells denote 1st bio-sparge pilot test time frame (2009 - 2013). Pilot test focused on area up-gradient of well MW-3A.

blue shaded cells denote 2nd bio-sparge pilot test time frame (2016 - 2019). Pilot test focused on the area around well MW-14A



**Table 12**  
**Groundwater Elevation Data - July 2019**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Well ID	Total Depth	Well Diameter	Screen Interval		Top of Casing Elevation <sub>1</sub>	Depth to Groundwater 7/22/2019	Groundwater Elevation 7/22/2019
	(feet bls.)		(feet bls.)	(feet bls.)			
MW-1	15.3	2	5.3	15.3	85.55	not measured	not measured
MW-3A	15.0	2	5.0	15	88.59	11.69	76.90
MW-9	18.0	2	8.0	18	83.50	not measured	not measured
MW-10	15.0	2	5.0	15	83.30	9.25	74.05
MW-11	15.0	2	5.0	15	85.61	8.64	76.97
MW-13A	22.0	2	7.0	22	83.52	7.75	75.77
MW-14A	16.0	2	6.0	16	81.11	5.13	75.98
MW-15	15.0	2	5.0	15	82.32	9.41	72.91
MW-16	16.0	2	6.0	16	83.65	10.39	73.26
MW-17A	15.9	2	5.9	15.9	82.37	10.39	71.98
MW-18A	15.2	2	13.2	15.2	80.27	8.94	71.33
MW-18B	6.7	2	4.7	6.7	80.17	8.13	72.04
MW-19	17.6	2	7.4	17.4	79.56	5.62	73.94
MW-20	13.9	2	3.9	13.9	80.59	7.85	72.74
MW-21	15.8	2	5.8	15.8	84.04	7.70	76.34
MW-22	17.1	2	7.1	17.1	81.74	6.85	74.89
MW-23	11.8	2	6.8	11.8	81.37	8.09	73.28
MW-24	14.0	2	4.0	14.0	81.23	6.04	75.19
MW-25	14.6	1	4.5	14.5	80.49	5.52	74.97
MW-26	14.3	1	9.2	14.2	81.21	6.18	75.03
MW-27	17.1	1	7.0	17.0	82.20	6.65	75.55
MW-28	17.1	1	7.0	17.0	83.03	6.91	76.12
MW-29	20.1	1	10.0	20.0	82.90	7.24	75.66
MW-30	19.4	1	9.3	19.3	81.58	5.69	75.89
BSW-2	20.0	2	10.0	20.0	no data	not measured	not measured
BSW-3	16.9	2	15.0	16.8	no data	not measured	not measured

Top of Casing Elevations<sub>1</sub> = Based data provided by Nesbitt Surveying Company, Inc. on 10/27/2016

feet bls. = feet below land surface

feet below TOC = feet below top of well casing

Riser\* = relative to top of casing

**Table 13**  
**Shallow Aquifer Parameters**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Well ID	TOC Elevation	DTW (feet)	GWE (feet)	K (feet/day)	I (feet/feet)	n (estimated)	v (feet/day)	b (feet)	T (feet <sup>2</sup> /day)
MW-1	85.55	5.65	79.90	0.305	0.010	0.3	0.010	12	3.7
MW-3A	88.59	11.37	77.22	0.245	0.011	0.3	0.009	10	2.5
MW-10	83.30	8.35	74.95	2.164	0.018	0.3	0.132	8	17.3
MW-13	83.52	6.90	76.62	3.183	0.004	0.3	0.039	17	54.1
MW-17	82.37	9.70	72.67	0.426	0.025	0.3	0.035	9	3.8
MW-22	81.74	5.73	76.01	0.683	0.012	0.3	0.027	10	6.8
MW-23	81.37	7.30	74.07	0.370	0.035	0.3	0.043	10	3.7

**Legend**

**n** = effective porosity

**I** = hydraulic gradient (3/14/2018)

**v** = Calculated Groundwater Velocity

**K** = hydraulic conductivity

**TOC** = top of casing

**DTW** = depth to water (3/14/2018)

**GWE** = water elevation (3/14/2018)

**v** =  $(K \cdot I) / n$

**T** = calculated Transmissivity ( $T = K \cdot b$ )

**b** = aquifer thickness

**n** = effective porosity

**Table 14**  
**Summary of Surface Water Analytical Results**  
**Marsh Lumber Company**  
**Pamplico, South Carolina**  
**S&ME Project No. 1584-98-146C**



Sample Location	Date Collected	Method 8270 Acid Extractables	
		Pentachlorophenol (µg/L)	Remaining Target Compounds (µg/L)
SW-1	12/19/2005	<20	BQL
	7/22/2006	<20	BQL
	* 8/22/2006	<20	BQL
	1/24/2007	<20	BQL
	10/3/2007	<20	BQL
	7/24/2008	<20	BQL
	1/8/2009	<20	BQL
	1/7/2010	<20	BQL
	6/24/2010	<20	BQL
	5/25/2011	<50	BQL
	5/16/2013	<50	BQL
	6/20/2013	<20	BQL
	2/5/2016	<20	BQL
	2/21/2017	<25	BQL
3/14/2018	<49	BQL	
2/18/2019	<24.5	BQL	
SW-2	12/19/2005	<20	BQL
	7/22/2006	<b>2.3 J</b>	BQL
	* 8/22/2006	<20	BQL
	1/24/2007	<20	BQL
	10/3/2007	<20	BQL
	7/24/2008	<20	BQL
	1/8/2009	<20	BQL
	1/7/2010	<20	BQL
	6/24/2010	<20	BQL
	5/25/2011	<50	BQL
	5/16/2013	<50	BQL
	6/20/2013	<20	BQL
	2/5/2016	<20	BQL
	2/21/2017	<25	BQL
3/14/2018	<49	BQL	
2/18/2019	<24.8	BQL	
SW-3	12/19/2005	<20	BQL
	7/22/2006	<b>3.3 J</b>	BQL
	* 8/22/2006	<20	BQL
	1/24/2007	<20	BQL
	10/3/2007	<20	BQL
	7/24/2008	<20	BQL
	1/8/2009	<20	BQL
	1/7/2010	<20	BQL
	6/24/2010	<50	BQL
	5/25/2011	<50	BQL
	5/16/2013	<b>10 J</b>	BQL
	6/20/2013	<20	BQL
	2/5/2016	<20	BQL
	2/21/2017	< 25	BQL
3/14/2018	<51	BQL	
2/18/2019	<24.5	BQL	
SW-4	6/20/2013	<20	BQL
	2/5/2016	<20	BQL
	2/21/2017	<25	BQL
	3/14/2018	<49	BQL
	2/18/2019	<24.5	BQL

BQL = Below Quantitation Limit or Method Detection Limit  
all concentrations reported in micrograms per liter (µg/l)

\* Confirmation sampling event. Samples analyzed by PACE Analytical (R&A the prior subcontract laboratory)





**Table 15**  
**Conceptual Site Model for Human Receptors**  
 Marsh Lumber Company  
 Pamplico, South Carolina  
 S&ME Project No. 1584-98-146C

Primary Source	Primary Release Mechanism	Secondary Source	Secondary Release Mechanism	Exposure Media	Exposure Route	Potential Receptor Populations		
						On-Site Facility Worker	On-Site Construction Worker/Utility Worker	Off-Site Resident (as water well user)
PCP Solution For Wood Treatment*	Historic leaks or losses from dip tank and/or along drip pad	Soil	Leaching to Soil	Soil	Incidental Ingestion	Y	Y	N
					Dermal Contact	Y	Y	N
			Leaching to Groundwater	Groundwater	Incidental Ingestion	N	N	Y
					Dermal Contact	N	N	Y

\* PCP use at the site ceased in 1986

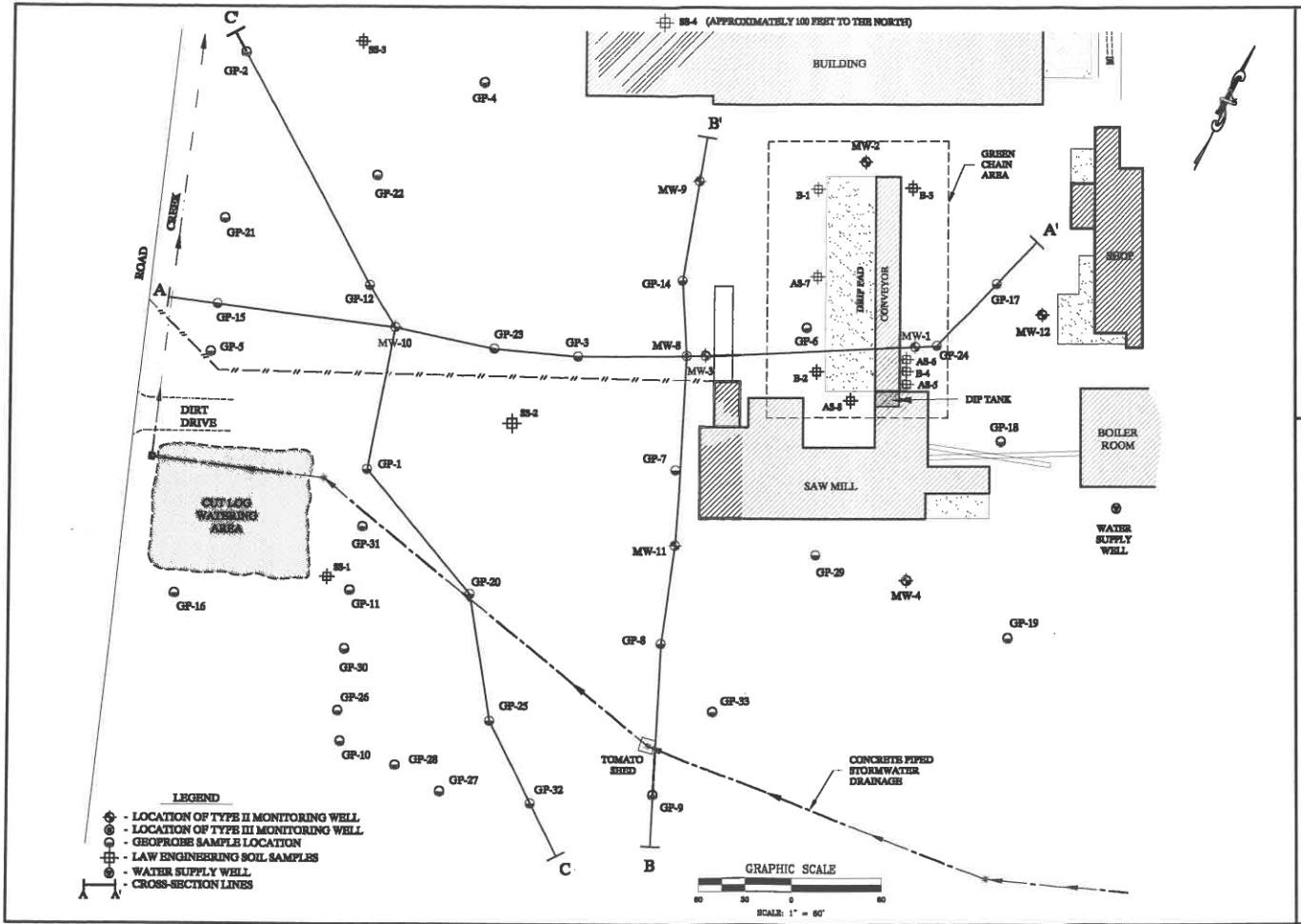
Y = Potentially complete exposure pathway

N = Pathway evaluated and found to be incomplete or insignificant, no further evaluation recommended

## **Appendices**

## **Appendix I – Historic Geologic Cross-Sections**





- LEGEND**
- ⊕ - LOCATION OF TYPE II MONITORING WELL
  - ⊙ - LOCATION OF TYPE III MONITORING WELL
  - - GEOPROBE SAMPLE LOCATION
  - ⊕ - LAW ENGINEERING SOIL SAMPLES
  - ⊙ - WATER SUPPLY WELL
  - - - - - CROSS-SECTION LINES

**SITE PLAN**  
**MARSH LUMBER COMPANY**  
**PAMLICO, SOUTH CAROLINA**

SCALE: AS SHOWN  
 JOB NO.: ESR-98-146

DRAWN BY: RDM  
 DATE: JUNE, 1999

CHECKED BY: RDBR  
 FIGURE NO. 2



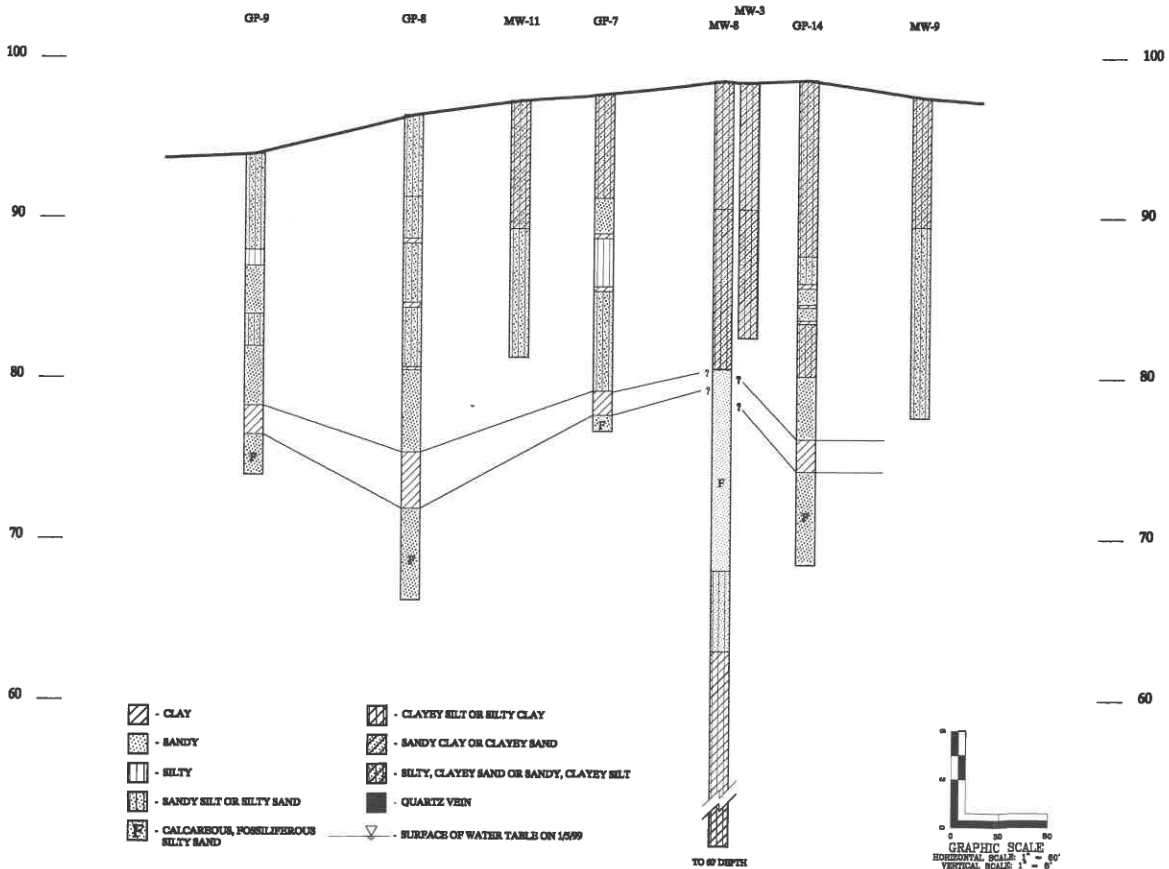


ELEV. (FT.)

B

B'

ELEV. (FT.)



- CLAY
- SANDY
- SILTY
- SANDY SILT OR SILTY SAND
- CALCAREOUS, POSSILIFEROUS SILTY SAND
- CLAYEY SILT OR SILTY CLAY
- SANDY CLAY OR CLAYEY SAND
- SILTY, CLAYEY SAND OR SANDY, CLAYEY SILT
- QUARTZ VEIN
- SURFACE OF WATER TABLE ON 1/5/99

**CROSS-SECTION B-B'**  
MARSH LUMBER COMPANY  
PAMPLOO, SOUTH CAROLINA

SCALE: AS SHOWN  
JOB NO. 1564-88-146

DRAWN BY: BDM  
DATE: JULY 1999

CHECKED BY: RORH  
FIGURE NO. 4



ELEV. (FT.)

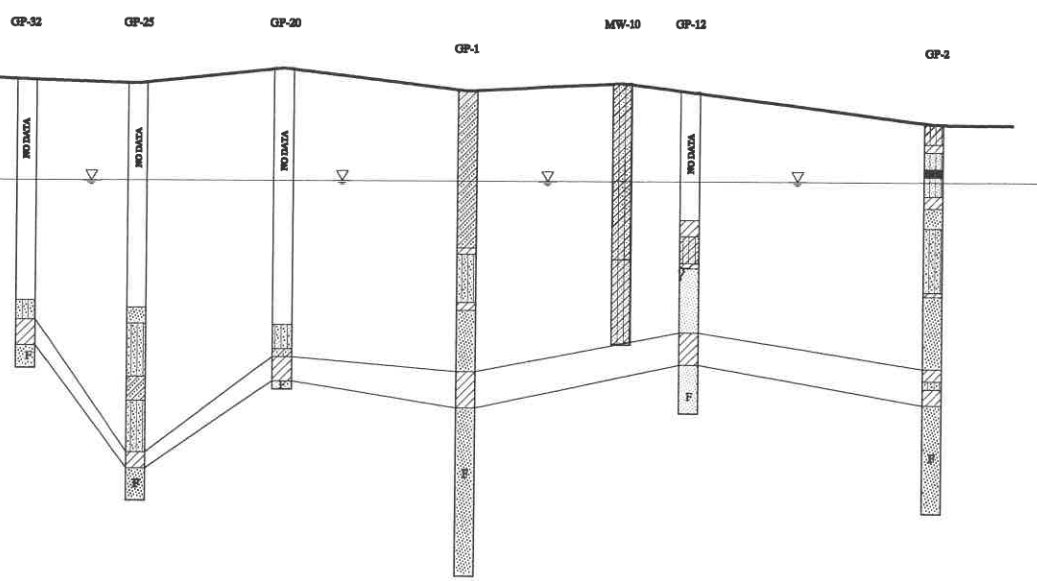
C

ELEV. (FT.)

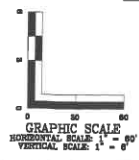
C

100  
90  
80  
70  
60

100  
90  
80  
70  
60



- CLAY
- SANDY
- SILTY
- SANDY SILT OR SILTY SAND
- CALCAREOUS, FOSSILIFEROUS SILTY SAND
- CLAYEY SILT OR SILTY CLAY
- SANDY CLAY OR CLAYEY SAND
- SILTY, CLAYEY SAND OR SANDY, CLAYEY SILT
- QUARTZ VEIN
- APPROXIMATE GROUNDWATER ELEVATION

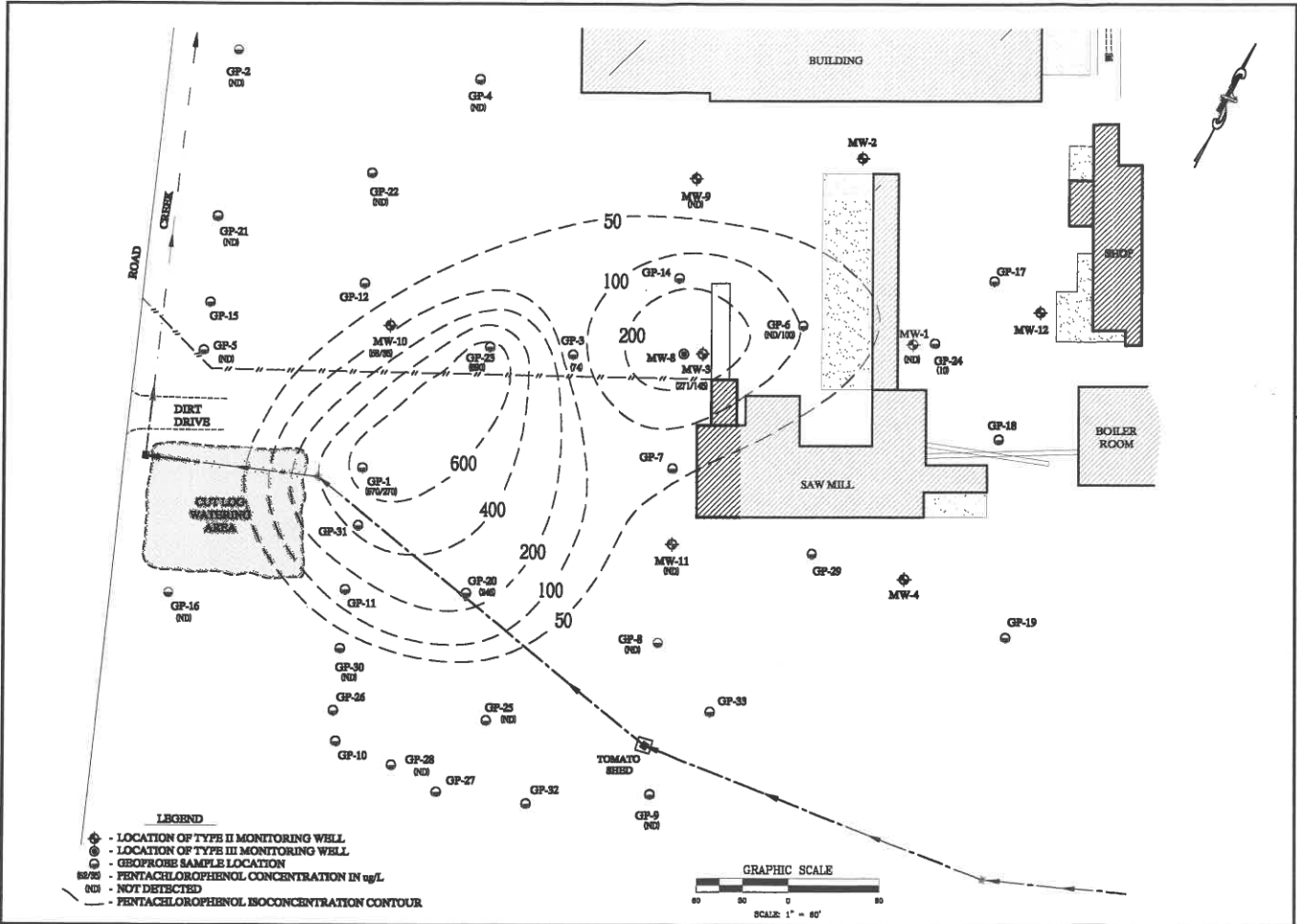


**CROSS-SECTION C-C**  
**MARSH LUMBER COMPANY**  
**PAMPlico, SOUTH CAROLINA**

SCALE: AS SHOWN  
 JOB NO.: 1984-98-146  
 DRAWN BY: RDM  
 CHECKED BY: BDB  
 DATE: JULY, 1999  
 FIGURE NO. 5

**S&ME**  
 ENVIRONMENTAL SERVICES  
 ENGINEERING - TESTING



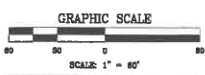


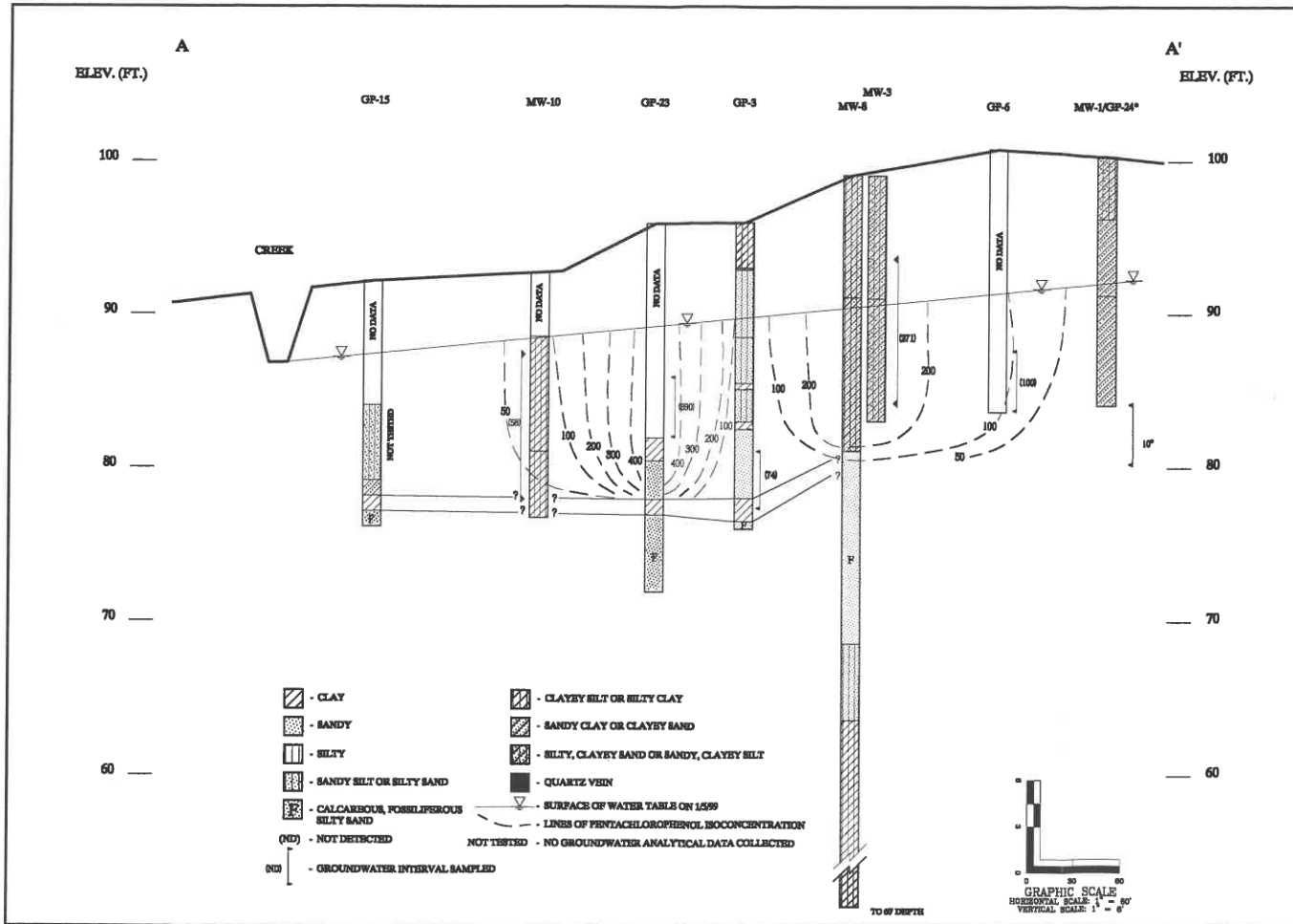
**PENTACHLOROPHENOL ISOCENTRATION MAP**  
**MARSH LUMBER COMPANY**  
**PAMELCO, SOUTH CAROLINA**

SCALE:	AS SHOWN	DRAWN BY:	EDM	CHECKED BY:	ROBE
JOB NO.:	1584-28-146	DATE:	JULY, 1999	FIGURE NO.:	8



- LEGEND**
- ⊕ - LOCATION OF TYPE II MONITORING WELL
  - ⊙ - LOCATION OF TYPE III MONITORING WELL
  - ⊙ - GEOFROBE SAMPLE LOCATION
  - 88/20 - PENTACHLOROPHENOL CONCENTRATION IN ug/L
  - (ND) - NOT DETECTED
  - - - - PENTACHLOROPHENOL ISOCENTRATION CONTOUR





**CROSS-SECTION A-A' WITH ISOCONCENTRATION CONTOURS**  
**MARSH LUMBER COMPANY**  
**PAMPICO, SOUTH CAROLINA**

CHECKED BY: BOBBE  
 DRAWN BY: BDM  
 DATE: JULY, 1999  
 FIGURE NO. 9

SCALE: AS SHOWN  
 JOB NO. 1584-98-146



ELEV. (FT.)

B

B'

ELEV. (FT.)

100

100

90

90

80

80

70

70

60

60

GP-9

GP-8

MW-11

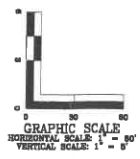
GP-7

MW-3  
MW-8

GP-14

MW-9

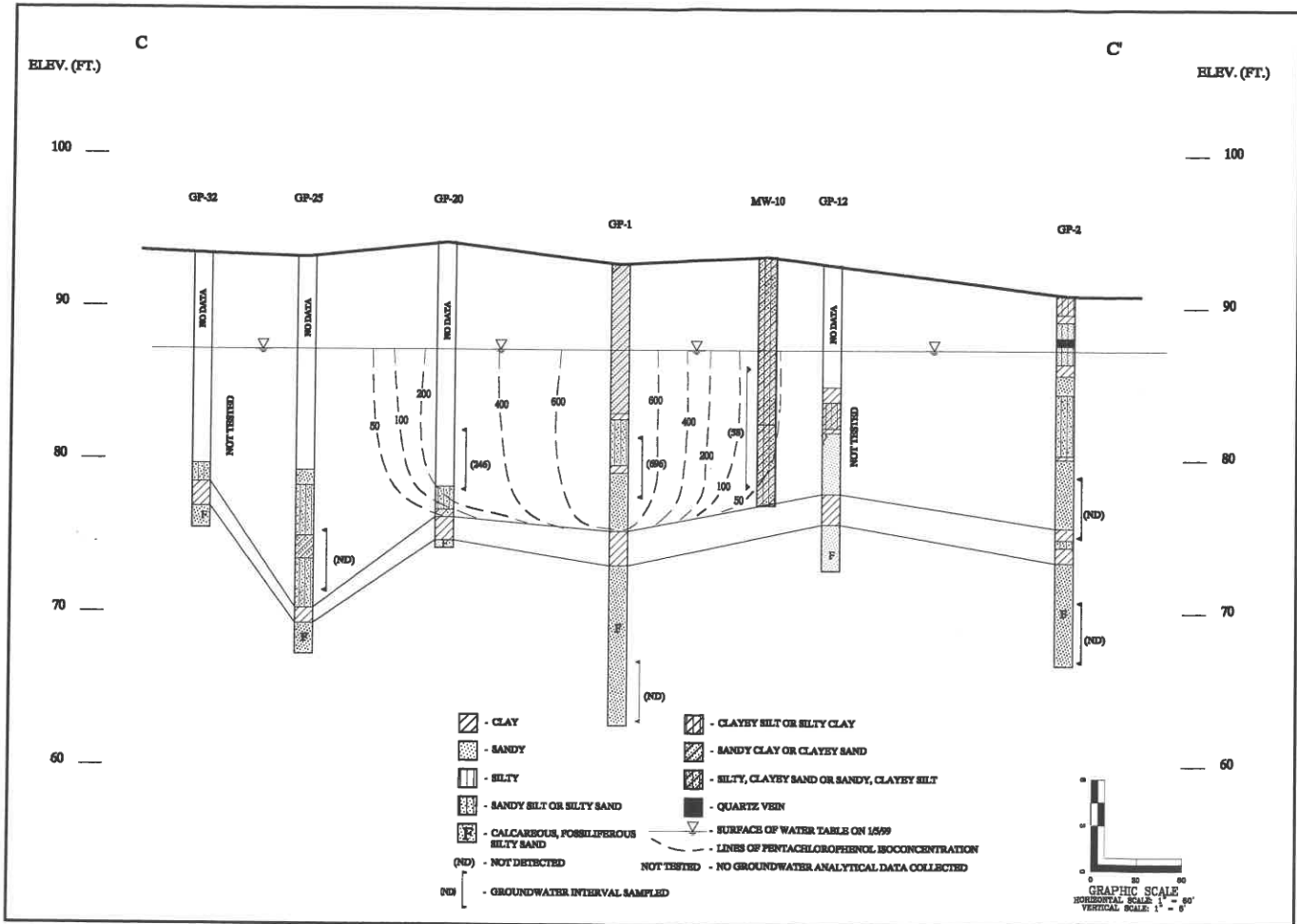
- CLAY
- SANDY
- SILTY
- SANDY SILT OR SILTY SAND
- CALCAREOUS, FOSSILIFEROUS SILTY SAND
- (ND) - NOT DETECTED
- SURFACE OF WATER TABLE ON 1/5/99
- LINES OF PENTACHLOROPHENOL BIOCONCENTRATION
- CLAYEY SILT OR SILTY CLAY
- SANDY CLAY OR CLAYEY SAND
- SILTY, CLAYEY SAND OR SANDY, CLAYEY SILT
- QUARTZ VEIN
- NOT TESTED - NO GROUNDWATER ANALYTICAL DATA COLLECTED
- GROUNDWATER INTERVAL SAMPLED



**CROSS-SECTION B-B WITH BIOCONCENTRATION CONTOURS**  
**MARSH LUMBER COMPANY**  
**PAMLICO, SOUTH CAROLINA**

SCALE: AS SHOWN  
 JOB NO.: 1594-28-146  
 DRAWN BY: BDM  
 DATE: JULY, 1999  
 CHECKED BY: BOBEI  
 FIGURE NO.: 10





**CROSS-SECTION C-C WITH ISOCONCENTRATION CONTOURS**  
**MARSH LUMBER COMPANY**  
**PAMLICO, SOUTH CAROLINA**

CHECKED BY: BOBE  
 DRAWN BY: RDM  
 DATE: JULY, 1999  
 JOB NO.: 1584-98-146  
 FIGURE NO.: 11





## **Appendix II – Laboratory Analytical Reports**

August 06, 2019

Mr. Ed Henriques  
S&ME, Inc.  
8646 West Market Street  
Suite 105  
Greensboro, NC 27409

RE: Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438255

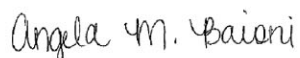
Dear Mr. Henriques:

Enclosed are the analytical results for sample(s) received by the laboratory between July 23, 2019 and July 26, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angela Baioni  
angela.baioni@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## SAMPLE SUMMARY

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438255

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92438255001	MW-3A	Water	07/22/19 12:35	07/23/19 10:00
92438255002	MW-15	Water	07/22/19 14:20	07/23/19 10:00
92438255003	MW-16	Water	07/22/19 11:10	07/23/19 10:00
92438255004	MW-29	Water	07/22/19 16:30	07/23/19 10:00
92438255005	MW-10	Water	07/23/19 08:15	07/24/19 09:35
92438255006	MW-14A	Water	07/23/19 10:15	07/24/19 09:35
92438255007	MW-25	Water	07/23/19 12:25	07/24/19 09:35
92438255008	MW-26	Water	07/23/19 14:55	07/24/19 09:35
92438255009	MW-20	Water	07/24/19 16:20	07/25/19 09:25
92438255010	MW-21	Water	07/24/19 08:10	07/25/19 09:25
92438255011	MW-22	Water	07/24/19 10:05	07/25/19 09:25
92438255012	MW-27	Water	07/24/19 14:10	07/25/19 09:25
92438255013	MW-28	Water	07/24/19 12:05	07/25/19 09:25
92438255014	MW-13a	Water	07/25/19 08:40	07/26/19 09:35
92438255015	MW-23	Water	07/25/19 15:05	07/26/19 09:35
92438255016	MW-24	Water	07/25/19 13:10	07/26/19 09:35
92438255017	MW-30	Water	07/25/19 11:00	07/26/19 09:35

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

## PROJECT NARRATIVE

Project:  
Pace Project No.:

---

**Method:**  
**Description:**  
**Client:**  
**Date:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. 500-167121

Page: 1 of 1

**Section A**  
**Required Client Information:**  
 Company: S&ME  
 Address: 8848 West Aket Street  
 Suite 105, Greensboro, NC 27409  
 Email: EHenriques@srmek.com  
 Phone: (336)288-7114 Fax:  
 Requested Due Date:

**Section B**  
**Required Project Information:**  
 Report To: Ed Henriques  
 Copy To:  
 Purchase Order #: Mareh Pamplico 500-15588  
 Project Name:  
 Project #:

**Section C**  
**Invoice Information:**  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 Pace Project Manager: angela.balom@pacecollabs.com  
 Pace Profile #: 2237-23

Regulatory Agency:  
 State / Location:

ITEM #	MATRIX	CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES							ANALYSES TEST	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	500-167121 COC 92438255	SC
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other					
1	MW-3A	WT		1/22/19	1235		✓												
2	MW-15	WT		1/22/19	1400		✓												
3	MW-16	WT		1/22/19	1110		✓												
4	MW-29	WT		1/22/19	1630		✓												
5		WT																	
6		WT																	
7		WT																	
8		WT																	
9		WT																	
10		WT																	
11		WT																	
12		WT																	
13		WT																	
14		WT																	
15		WT																	
16		WT																	
17		WT																	
18		WT																	
19		WT																	
20		WT																	
21		WT																	
22		WT																	
23		WT																	
24		WT																	

WO#: 92438255

**ADDITIONAL COMMENTS:** [Blank]

**RELINQUISHED BY / AFFILIATION:** [Signature] DATE: 7/22/19 TIME: 1800

**ACCEPTED BY / AFFILIATION:** [Signature] DATE: 7/22/19 TIME: 2.1

**SAMPLE CONDITIONS:**

Received on: [Blank] TEMP in C: [Blank]

Ice (Y/N): [Blank]

Custody Sealed (Y/N): [Blank]

Cooler (Y/N): [Blank]

Samples In tact (Y/N): [Blank]

**SAMPLER NAME AND SIGNATURE:** GARY SIMOX [Signature]

**PRINT Name of SAMPLER:** GARY SIMOX

**SIGNATURE of SAMPLER:** [Signature]

**DATE Signed:** 7/22/19













# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

### Section A

#### Required Client Information:

Company: SS&ME  
 Address: 8646 Wg. Market Street  
 Suite 105, Greensboro, NC 27409  
 Email: EHenriques@meinc.com  
 Phone: (336)287180 Fax:  
 Requested Due Date:

### Section B

#### Required Project Information:

Report To: Ed Henriques  
 Copy To:  
 Purchase Order #:  
 Project Name: Marsh Pamplico 500-16688  
 Project #:

### Section C

#### Invoice Information:

Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 Pace Project Manager: angela.baloni@pacelabs.com  
 Pace Profile #: 2237-23

Regulatory Agency:  
 State / Location: SC

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	PRESERVATIVES		ANALYSIS TEST	Residual Chlorine (Y/N)
			START DATE	END DATE			START TIME	END TIME		H2SO4	HNO3		
1	Drinking Water	DW	7/24	11:20	WT	MW-20						X	
2	Wastewater	WW	7/24	08:10	WT	MW-21						X	009
3	Wastewater	WW	7/24	10:05	WT	MW-22						X	010
4	Wastewater	WW	7/24	14:10	WT	MW-27						X	011
5	Wastewater	WW	7/24	12:05	WT	MW-28						X	012
6	Wastewater	WW			WT							X	013
7	Wastewater	WW			WT							X	
8	Wastewater	WW			WT							X	
9	Wastewater	WW			WT							X	
10	Wastewater	WW			WT							X	
11	Wastewater	WW			WT							X	
12	Wastewater	WW			WT							X	



500-167270 COC  
 92438255

WO#: 92438255

PM: AMB Due Date: 08/06/19  
 CLIENT: 92-S&ME Gbor

RECEIVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP In C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
<i>[Signature]</i>	7/24/19	1730	<i>[Signature]</i>	7/24/19	09:00							

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: GARY SIMONX  
 SIGNATURE of SAMPLER: *[Signature]*

DATE Signed: 7/24/19

0.9



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. 500-1107372

**Section A**  
 Required Client Information:  
 Company: SAME  
 Address: 8046 West Market Street  
 Suite 105, Greensboro, NC 27409  
 Email: EHenriques@smainc.com  
 Phone: (336)288-7180 Fax:  
 Requested Due Date:

**Section B**  
 Required Project Information:  
 Report To: Ed Henriques  
 Copy To:  
 Purchase Order #: Marsh Pamlico 600-15688  
 Project Name: angela.baloni@pacelabs.com  
 Project #:

**Section C**  
 Invoice Information:  
 Attention:  
 Company Name:  
 Address:  
 Pace Quota:  
 Pace Project Manager:  
 Pace Profile #: 2237-23

Regulatory Agency:  
 State / Location: SC

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives							Perchlorophenol by 8151	Analyzes Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	500-167372 COC
			START DATE	END TIME				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other					
13	MW-13A	DW	7/25 08:40		WT		2												
14	MW-23	WT	7/25 1505		WT		2											014	
15	MW-24	WT	7/25 1310		WT		2											015	
16	MW-30	WT	7/25 1100		WT		2											016	
17		WT			WT		2											017	

**WO#: 92438255**  
 PM: AMB Due Date: 08/08/19  
 CLIENT: 92-S&ME Gber

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP In C	Received on	Sealed	Cooler	Samples Intact
	[Signature]	7/25/19	1700	[Signature]	7/26/19	0935	3.1				

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: GARY SIMOX  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed: 7/25/19

## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-167121-1  
Client Project/Site: Marsh Pamplico 500-15588

**For:**

Pace Analytical Services, LLC  
9800 Kinsey Avenue, Suite 100  
Huntersville, North Carolina 28078

Attn: Angela Baioni



Authorized for release by:  
7/31/2019 4:16:59 PM

Therese Hargraves, Project Manager I  
(708)793-3461  
[therese.hargraves@testamericainc.com](mailto:therese.hargraves@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*





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# Case Narrative

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

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**Job ID: 500-167121-1**

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**Laboratory: Eurofins TestAmerica, Chicago**

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**Narrative**

**Job Narrative**  
**500-167121-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 7/23/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

**GC Semi VOA**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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# Detection Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## Client Sample ID: MW-3A

Lab Sample ID: 500-167121-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.15	J	0.52	0.093	ug/L	1		8151A	Total/NA

## Client Sample ID: MW-15

Lab Sample ID: 500-167121-2

No Detections.

## Client Sample ID: MW-16

Lab Sample ID: 500-167121-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.80		0.55	0.098	ug/L	1		8151A	Total/NA

## Client Sample ID: MW-29

Lab Sample ID: 500-167121-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	29		5.4	0.96	ug/L	10		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

# Method Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





# Sample Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-167121-1	MW-3A	Water	07/22/19 12:35	07/23/19 10:00	
500-167121-2	MW-15	Water	07/22/19 14:00	07/23/19 10:00	
500-167121-3	MW-16	Water	07/22/19 11:10	07/23/19 10:00	
500-167121-4	MW-29	Water	07/22/19 16:30	07/23/19 10:00	

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

**Client Sample ID: MW-3A**

**Lab Sample ID: 500-167121-1**

**Date Collected: 07/22/19 12:35**

**Matrix: Water**

**Date Received: 07/23/19 10:00**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.15	J	0.52	0.093	ug/L		07/29/19 10:05	07/30/19 05:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130	07/29/19 10:05	07/30/19 05:01	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

**Client Sample ID: MW-15**  
**Date Collected: 07/22/19 14:00**  
**Date Received: 07/23/19 10:00**

**Lab Sample ID: 500-167121-2**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.51		0.51	0.091	ug/L		07/29/19 10:05	07/30/19 05:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	97		25 - 130				07/29/19 10:05	07/30/19 05:26	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

**Client Sample ID: MW-16**

**Lab Sample ID: 500-167121-3**

**Date Collected: 07/22/19 11:10**

**Matrix: Water**

**Date Received: 07/23/19 10:00**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.80		0.55	0.098	ug/L		07/29/19 10:05	07/30/19 05:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	88		25 - 130	07/29/19 10:05	07/30/19 05:50	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

**Client Sample ID: MW-29**  
**Date Collected: 07/22/19 16:30**  
**Date Received: 07/23/19 10:00**

**Lab Sample ID: 500-167121-4**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	29		5.4	0.96	ug/L		07/29/19 10:05	07/30/19 16:26	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	86		25 - 130				07/29/19 10:05	07/30/19 16:26	10

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# Definitions/Glossary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
⌘	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# QC Association Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## GC Semi VOA

### Prep Batch: 497132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167121-1	MW-3A	Total/NA	Water	8151A	
500-167121-2	MW-15	Total/NA	Water	8151A	
500-167121-3	MW-16	Total/NA	Water	8151A	
500-167121-4	MW-29	Total/NA	Water	8151A	
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 497230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167121-1	MW-3A	Total/NA	Water	8151A	497132
500-167121-2	MW-15	Total/NA	Water	8151A	497132
500-167121-3	MW-16	Total/NA	Water	8151A	497132
500-167121-4	MW-29	Total/NA	Water	8151A	497132
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	497132
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	497132
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	497132

# Surrogate Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

**Method: 8151A - Herbicides (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-167121-1	MW-3A	83
500-167121-2	MW-15	97
500-167121-3	MW-16	88
500-167121-4	MW-29	86
LCS 500-497132/2-A	Lab Control Sample	77
LCSD 500-497132/3-A	Lab Control Sample Dup	75
MB 500-497132/1-A	Method Blank	71

### Surrogate Legend

DCPAA = DCAA



# QC Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 500-497132/1-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.50		0.50	0.090	ug/L		07/29/19 10:05	07/30/19 02:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130				07/29/19 10:05	07/30/19 02:10	1

**Lab Sample ID: LCS 500-497132/2-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Pentachlorophenol	2.53	2.30		ug/L		91	40 - 122	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
DCAA	77		25 - 130					

**Lab Sample ID: LCSD 500-497132/3-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	2.53	2.16		ug/L		86	40 - 122	6	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCAA	75		25 - 130						

# Lab Chronicle

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## Client Sample ID: MW-3A

Date Collected: 07/22/19 12:35

Date Received: 07/23/19 10:00

Lab Sample ID: 500-167121-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 05:01	JBJ	TAL CHI

## Client Sample ID: MW-15

Date Collected: 07/22/19 14:00

Date Received: 07/23/19 10:00

Lab Sample ID: 500-167121-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 05:26	JBJ	TAL CHI

## Client Sample ID: MW-16

Date Collected: 07/22/19 11:10

Date Received: 07/23/19 10:00

Lab Sample ID: 500-167121-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 05:50	JBJ	TAL CHI

## Client Sample ID: MW-29

Date Collected: 07/22/19 16:30

Date Received: 07/23/19 10:00

Lab Sample ID: 500-167121-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		10	497230	07/30/19 16:26	JBJ	TAL CHI

### Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167121-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	77001	04-30-20

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500-167121 Waybill

07:23  
8857  
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15:00  
519  
RT  
15  
ST

FedEx  
TRK#  
0200 8142 2549 8957

TUE - 23 JUL AA  
STANDARD OVERNIGHT

GE JOTA

48qt. 60484  
IL-US  
ORD



FID 487723 22JUL19 FLOA 669C2/A6F9/8C0A

FedEx Express Package  
US Airbill

FedEx Tracking Number 8142 2549 8957

1 From: [Redacted]  
 Date: 7/22/19  
 Sender's Name: GARY SIMON Phone: 336 339 2425  
 Company: SIME INC.  
 Address: 8048 W. MARKET ST., SUITE 105  
 City: GREENSBORO State: NC ZIP: 27409

2 Your Internal Billing Reference  
 3 To Recipient's Name: [Redacted] Phone: [Redacted]  
 Company: [Redacted]  
 Address: [Redacted] Dept./Floor/Suite/Room: [Redacted]  
 Address: [Redacted]  
 City: [Redacted] State: [Redacted] ZIP: [Redacted]



8142 2549 8957

Next Business Day  
 FedEx First Overnight  
 FedEx Priority Overnight  
 FedEx Standard Overnight  
 2 or 3 Business Days  
 FedEx 2Day A.M.  
 FedEx 2Day  
 FedEx Express Saver

5 Packaging \*Declared value limit \$500.  
 FedEx Envelope\*  FedEx Pak\*  FedEx Tube\*  Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.  
 Saturday Delivery  
 No Signature Required  
 Direct Signature  
 Indirect Signature

Does this shipment contain dangerous goods?  
 No  Yes  
 Dry Ice  
 Cargo Aircraft Only

7 Payment Bill to:  
 Sender  Recipient  Third Party  Credit Card  Cash/Check  
 Total Packages: [Redacted] Total Weight: [Redacted] Credit Card No.: [Redacted]

Align Open End of FedEx Pouch Here

fedex.com 1.800.GoFedEx-1.800.463.3339

fedex.com 1.800.GoFedEx-1.800.463.3339



# Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 500-167121-1

**Login Number: 167121**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: James, Jeff A**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-167187-1  
Client Project/Site: Marsh Pamplico 500-15588

For:

Pace Analytical Services, LLC  
9800 Kinsey Avenue, Suite 100  
Huntersville, North Carolina 28078

Attn: Angela Baioni



Authorized for release by:  
7/31/2019 4:18:33 PM

Therese Hargraves, Project Manager I  
(708)793-3461  
[therese.hargraves@testamericainc.com](mailto:therese.hargraves@testamericainc.com)

### LINKS

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Case Narrative

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

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## Job ID: 500-167187-1

---

Laboratory: Eurofins TestAmerica, Chicago

### Narrative

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Job Narrative  
500-167187-1

### Comments

No additional comments.

### Receipt

The samples were received on 7/24/2019 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

### GC Semi VOA

Method(s) 8151A: The following samples required a dilution due to the nature of the sample matrix: MW-10 (500-167187-1) and MW-25 (500-167187-3). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Client Sample ID: MW-10

Lab Sample ID: 500-167187-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	59		11	1.9	ug/L	20		8151A	Total/NA

## Client Sample ID: MW-14A

Lab Sample ID: 500-167187-2

No Detections.

## Client Sample ID: MW-25

Lab Sample ID: 500-167187-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	42		11	2.0	ug/L	20		8151A	Total/NA

## Client Sample ID: MW-26

Lab Sample ID: 500-167187-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago



# Method Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Sample Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-167187-1	MW-10	Water	07/23/19 08:15	07/24/19 09:35	
500-167187-2	MW-14A	Water	07/23/19 10:15	07/24/19 09:35	
500-167187-3	MW-25	Water	07/23/19 12:25	07/24/19 09:35	
500-167187-4	MW-26	Water	07/23/19 14:35	07/24/19 09:35	

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

**Client Sample ID: MW-10**  
**Date Collected: 07/23/19 08:15**  
**Date Received: 07/24/19 09:35**

**Lab Sample ID: 500-167187-1**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	59		11	1.9	ug/L		07/29/19 10:05	07/30/19 16:51	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130				07/29/19 10:05	07/30/19 16:51	20

- 1
- 2
- 3
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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

**Client Sample ID: MW-14A**

**Lab Sample ID: 500-167187-2**

**Date Collected: 07/23/19 10:15**

**Matrix: Water**

**Date Received: 07/24/19 09:35**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.53		0.53	0.096	ug/L		07/29/19 10:05	07/30/19 07:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130	07/29/19 10:05	07/30/19 07:53	1

- 1
- 2
- 3
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- 13
- 14
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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

**Client Sample ID: MW-25**

**Lab Sample ID: 500-167187-3**

**Date Collected: 07/23/19 12:25**

**Matrix: Water**

**Date Received: 07/24/19 09:35**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	42		11	2.0	ug/L		07/29/19 10:05	07/30/19 17:16	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	07/29/19 10:05	07/30/19 17:16	20

- 1
- 2
- 3
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- 8
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- 11
- 12
- 13
- 14
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# Client Sample Results

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

**Client Sample ID: MW-26**

**Date Collected: 07/23/19 14:35**

**Date Received: 07/24/19 09:35**

**Lab Sample ID: 500-167187-4**

**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.55		0.55	0.099	ug/L		07/29/19 10:05	07/30/19 08:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	121		25 - 130	07/29/19 10:05	07/30/19 08:42	1

# Definitions/Glossary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# QC Association Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## GC Semi VOA

### Prep Batch: 497132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167187-1	MW-10	Total/NA	Water	8151A	
500-167187-2	MW-14A	Total/NA	Water	8151A	
500-167187-3	MW-25	Total/NA	Water	8151A	
500-167187-4	MW-26	Total/NA	Water	8151A	
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 497230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167187-1	MW-10	Total/NA	Water	8151A	497132
500-167187-2	MW-14A	Total/NA	Water	8151A	497132
500-167187-3	MW-25	Total/NA	Water	8151A	497132
500-167187-4	MW-26	Total/NA	Water	8151A	497132
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	497132
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	497132
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	497132

# Surrogate Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-167187-1	MW-10	0 D
500-167187-2	MW-14A	85
500-167187-4	MW-26	121
LCS 500-497132/2-A	Lab Control Sample	77
LCSD 500-497132/3-A	Lab Control Sample Dup	75
MB 500-497132/1-A	Method Blank	71

#### Surrogate Legend

DCPAA = DCAA

## Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-167187-3	MW-25	0 D

#### Surrogate Legend

DCPAA = DCAA

# QC Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 500-497132/1-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.50		0.50	0.090	ug/L		07/29/19 10:05	07/30/19 02:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130				07/29/19 10:05	07/30/19 02:10	1

**Lab Sample ID: LCS 500-497132/2-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Pentachlorophenol	2.53	2.30		ug/L		91	40 - 122	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
DCAA	77		25 - 130					

**Lab Sample ID: LCSD 500-497132/3-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	2.53	2.16		ug/L		86	40 - 122	6	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCAA	75		25 - 130						



# Lab Chronicle

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Client Sample ID: MW-10

Date Collected: 07/23/19 08:15

Date Received: 07/24/19 09:35

## Lab Sample ID: 500-167187-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		20	497230	07/30/19 16:51	JBJ	TAL CHI

## Client Sample ID: MW-14A

Date Collected: 07/23/19 10:15

Date Received: 07/24/19 09:35

## Lab Sample ID: 500-167187-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 07:53	JBJ	TAL CHI

## Client Sample ID: MW-25

Date Collected: 07/23/19 12:25

Date Received: 07/24/19 09:35

## Lab Sample ID: 500-167187-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		20	497230	07/30/19 17:16	JBJ	TAL CHI

## Client Sample ID: MW-26

Date Collected: 07/23/19 14:35

Date Received: 07/24/19 09:35

## Lab Sample ID: 500-167187-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 08:42	JBJ	TAL CHI

### Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167187-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	77001	04-30-20

- 1
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500-167187 Waybill

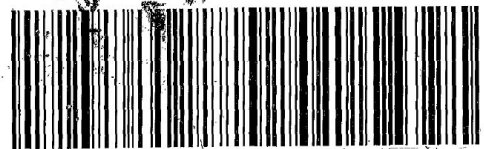
489

FedEx TRK# 8142 2549 8968

WED - 24 JUL AA STANDARD OVERNIGHT

GE JOTA

60484 L-US ORD



FedEx Express Package US Airbill Tracking Number 8142 2549 8968 Form ID No.

1 From [Redacted] Date 7/23/18

Sender's Name GARY SIMON Phone 336 389-2425 Company S.M.C. Inc Address 2646 W. MARSH ST, SUITE 105 City GREENSBORO State NC ZIP 27409

2 Your Internal Billing Reference

3 To Recipient's Name [Redacted] Phone [Redacted] Company [Redacted]

Address [Redacted] City [Redacted] State [Redacted] ZIP [Redacted]

4 Express FID 624816 23JUL19 FLOA 668C2/A6F9/8C8A FedEx Express Freight US Airbill

Next Business Day 2 or 3 Business Days FedEx First Overnight, FedEx Priority Overnight, FedEx Standard Overnight, FedEx 2Day A.M., FedEx 2Day, FedEx Express Saver

5 Packaging FedEx Envelope, FedEx Pak, FedEx Box, FedEx Tube, Other

6 Special Handling and Delivery Signature Options Saturday Delivery, No Signature Required, Direct Signature, Indirect Signature, Does this shipment contain dangerous goods?

7 Payment Bill to Sender, Recipient, Third Party, Credit Card, Cash/Check



8142 2549 8968

Total Packages Total Weight 1 4.4 lbs

644

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

Align Open End of FedEx Pouch Here

# Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 500-167187-1

**Login Number: 167187**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: Scott, Sherri L**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-167270-1  
Client Project/Site: Marsh Pamplico 500-15588

For:

Pace Analytical Services, LLC  
9800 Kinsey Avenue, Suite 100  
Huntersville, North Carolina 28078

Attn: Angela Baioni



Authorized for release by:  
7/31/2019 4:19:42 PM

Therese Hargraves, Project Manager I  
(708)793-3461  
[therese.hargraves@testamericainc.com](mailto:therese.hargraves@testamericainc.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Case Narrative

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

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**Job ID: 500-167270-1**

---

**Laboratory: Eurofins TestAmerica, Chicago**

## Narrative

**Job Narrative  
500-167270-1**

## Comments

No additional comments.

## Receipt

The samples were received on 7/25/2019 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

## GC Semi VOA

Method(s) 8151A: The following samples required a dilution due to the nature of the sample matrix: MW-22 (500-167270-3) and MW-28 (500-167270-5). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

## Client Sample ID: MW-20

Lab Sample ID: 500-167270-1

No Detections.

## Client Sample ID: MW-21

Lab Sample ID: 500-167270-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.15	J	0.52	0.093	ug/L	1		8151A	Total/NA

## Client Sample ID: MW-22

Lab Sample ID: 500-167270-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	130		22	4.0	ug/L	40		8151A	Total/NA

## Client Sample ID: MW-27

Lab Sample ID: 500-167270-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	2.5		0.53	0.096	ug/L	1		8151A	Total/NA

## Client Sample ID: MW-28

Lab Sample ID: 500-167270-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	310		56	10	ug/L	100		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

# Method Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





# Sample Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-167270-1	MW-20	Water	07/24/19 16:20	07/25/19 09:35	
500-167270-2	MW-21	Water	07/24/19 08:10	07/25/19 09:35	
500-167270-3	MW-22	Water	07/24/19 10:05	07/25/19 09:35	
500-167270-4	MW-27	Water	07/24/19 14:10	07/25/19 09:35	
500-167270-5	MW-28	Water	07/24/19 12:05	07/25/19 09:35	

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-20**  
**Date Collected: 07/24/19 16:20**  
**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-1**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.54		0.54	0.097	ug/L		07/29/19 10:05	07/30/19 09:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130				07/29/19 10:05	07/30/19 09:07	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-21**

**Lab Sample ID: 500-167270-2**

**Date Collected: 07/24/19 08:10**

**Matrix: Water**

**Date Received: 07/25/19 09:35**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.15	J	0.52	0.093	ug/L		07/29/19 10:05	07/30/19 09:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	88		25 - 130	07/29/19 10:05	07/30/19 09:32	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-22**  
**Date Collected: 07/24/19 10:05**  
**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-3**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	130		22	4.0	ug/L		07/29/19 10:05	07/30/19 17:40	40
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130				07/29/19 10:05	07/30/19 17:40	40

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-27**  
**Date Collected: 07/24/19 14:10**  
**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-4**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2.5		0.53	0.096	ug/L		07/29/19 10:05	07/30/19 10:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	82		25 - 130				07/29/19 10:05	07/30/19 10:21	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-28**  
**Date Collected: 07/24/19 12:05**  
**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-5**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	310		56	10	ug/L		07/29/19 10:05	07/30/19 19:18	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130				07/29/19 10:05	07/30/19 19:18	100

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# Definitions/Glossary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# QC Association Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

## GC Semi VOA

### Prep Batch: 497132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167270-1	MW-20	Total/NA	Water	8151A	
500-167270-2	MW-21	Total/NA	Water	8151A	
500-167270-3	MW-22	Total/NA	Water	8151A	
500-167270-4	MW-27	Total/NA	Water	8151A	
500-167270-5	MW-28	Total/NA	Water	8151A	
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 497230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167270-1	MW-20	Total/NA	Water	8151A	497132
500-167270-2	MW-21	Total/NA	Water	8151A	497132
500-167270-3	MW-22	Total/NA	Water	8151A	497132
500-167270-4	MW-27	Total/NA	Water	8151A	497132
500-167270-5	MW-28	Total/NA	Water	8151A	497132
MB 500-497132/1-A	Method Blank	Total/NA	Water	8151A	497132
LCS 500-497132/2-A	Lab Control Sample	Total/NA	Water	8151A	497132
LCSD 500-497132/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	497132

# Surrogate Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Method: 8151A - Herbicides (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-167270-1	MW-20	81
500-167270-2	MW-21	88
500-167270-3	MW-22	0 D
500-167270-4	MW-27	82
500-167270-5	MW-28	0 D
LCS 500-497132/2-A	Lab Control Sample	77
LCSD 500-497132/3-A	Lab Control Sample Dup	75
MB 500-497132/1-A	Method Blank	71

### Surrogate Legend

DCPAA = DCAA

# QC Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 500-497132/1-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.50		0.50	0.090	ug/L		07/29/19 10:05	07/30/19 02:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130				07/29/19 10:05	07/30/19 02:10	1

**Lab Sample ID: LCS 500-497132/2-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Pentachlorophenol	2.53	2.30		ug/L		91	40 - 122	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
DCAA	77		25 - 130					

**Lab Sample ID: LCSD 500-497132/3-A**  
**Matrix: Water**  
**Analysis Batch: 497230**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 497132**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	2.53	2.16		ug/L		86	40 - 122	6	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCAA	75		25 - 130						



# Lab Chronicle

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

**Client Sample ID: MW-20**

**Date Collected: 07/24/19 16:20**

**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 09:07	JBJ	TAL CHI

**Client Sample ID: MW-21**

**Date Collected: 07/24/19 08:10**

**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 09:32	JBJ	TAL CHI

**Client Sample ID: MW-22**

**Date Collected: 07/24/19 10:05**

**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		40	497230	07/30/19 17:40	JBJ	TAL CHI

**Client Sample ID: MW-27**

**Date Collected: 07/24/19 14:10**

**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		1	497230	07/30/19 10:21	JBJ	TAL CHI

**Client Sample ID: MW-28**

**Date Collected: 07/24/19 12:05**

**Date Received: 07/25/19 09:35**

**Lab Sample ID: 500-167270-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497132	07/29/19 10:05	DAK	TAL CHI
Total/NA	Analysis	8151A		100	497230	07/30/19 19:18	JBJ	TAL CHI

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167270-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	77001	04-30-20

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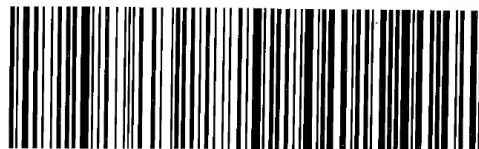
FedEx  
TRK# 8142 2549 8946  
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THU - 25 JUL AA  
STANDARD OVERNIGHT

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500-167270 Waybill



FedEx Express Package US Airbill

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Form ID No. 0200

4 Express Package Ser

FID 624816 24JUL19 FLOA 568C2/A6F9/0C8A

1 From

Date 7/24/19  
Sender's Name GAKI SIMON Phone 336 335 2125  
Company S-ME, Inc.  
Address 8096 W MARKET ST. SUITE 105  
City GREENSBORO State NC ZIP 27409

Next Business Day

- FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight

2nd Business Day

- FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver

2 Your Internal Billing Reference

To Recipient's Name Phone 772 894 7211

Company

Address

Address

City State NC ZIP

5 Packaging

- FedEx Envelope
FedEx Pak
FedEx Box
FedEx Tube
Other

6 Special Handling and Delivery Signature Options

- Saturday Delivery
No Signature Required
Direct Signature
Indirect Signature
Does this shipment contain dangerous goods?
Payment Bill to:

Payment Bill to: Sender, Recipient, Third Party, Credit Card, Cash/Check

Total Packages Total Weight lbs.

48 qt.

644



8142 2549 8946

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

ALIGN OPEN END OF FEDEX AIRBILL POUCH HERE

# Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 500-167270-1

**Login Number: 167270**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: James, Jeff A**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-167372-1  
Client Project/Site: Marsh Pamplico 500-15588

For:

Pace Analytical Services, LLC  
9800 Kinsey Avenue, Suite 100  
Huntersville, North Carolina 28078

Attn: Angela Baioni



Authorized for release by:  
8/2/2019 2:40:34 PM

Robin Kintz, Project Manager II  
(708)534-5200

[robin.kintz@testamericainc.com](mailto:robin.kintz@testamericainc.com)

Designee for

Therese Hargraves, Project Manager I  
(708)793-3461

[therese.hargraves@testamericainc.com](mailto:therese.hargraves@testamericainc.com)

### LINKS

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results through  
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Have a Question?



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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

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## Job ID: 500-167372-1

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Laboratory: Eurofins TestAmerica, Chicago

### Narrative

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#### Job Narrative 500-167372-1

### Comments

No additional comments.

### Receipt

The samples were received on 7/26/2019 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

### GC Semi VOA

Method(s) 8151A: Surrogate recovery for the following samples was outside the upper control limit: MW-13A (500-167372-1), MW-24 (500-167372-3) and MW-30 (500-167372-4). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8151A: Surrogate recovery for the following method blank was outside the upper control limit: (MB 500-497563/1-A). It did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Client Sample ID: MW-13A**

**Lab Sample ID: 500-167372-1**

No Detections.

**Client Sample ID: MW-23**

**Lab Sample ID: 500-167372-2**

No Detections.

**Client Sample ID: MW-24**

**Lab Sample ID: 500-167372-3**

No Detections.

**Client Sample ID: MW-30**

**Lab Sample ID: 500-167372-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	3.3		0.56	0.10	ug/L	1		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

# Method Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200





# Sample Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-167372-1	MW-13A	Water	07/25/19 08:40	07/26/19 09:35	
500-167372-2	MW-23	Water	07/25/19 15:05	07/26/19 09:35	
500-167372-3	MW-24	Water	07/25/19 13:10	07/26/19 09:35	
500-167372-4	MW-30	Water	07/25/19 11:00	07/26/19 09:35	

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Client Sample ID: MW-13A**

**Lab Sample ID: 500-167372-1**

**Date Collected: 07/25/19 08:40**

**Matrix: Water**

**Date Received: 07/26/19 09:35**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.54		0.54	0.098	ug/L		07/31/19 10:55	08/02/19 02:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	142	X	25 - 130				07/31/19 10:55	08/02/19 02:33	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Client Sample ID: MW-23**  
**Date Collected: 07/25/19 15:05**  
**Date Received: 07/26/19 09:35**

**Lab Sample ID: 500-167372-2**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.54		0.54	0.097	ug/L		07/31/19 10:55	08/02/19 02:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	128		25 - 130				07/31/19 10:55	08/02/19 02:58	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Client Sample ID: MW-24**

**Lab Sample ID: 500-167372-3**

**Date Collected: 07/25/19 13:10**

**Matrix: Water**

**Date Received: 07/26/19 09:35**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.55		0.55	0.10	ug/L		07/31/19 10:55	08/02/19 03:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	143	X	25 - 130				07/31/19 10:55	08/02/19 03:22	1

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Client Sample ID: MW-30**  
**Date Collected: 07/25/19 11:00**  
**Date Received: 07/26/19 09:35**

**Lab Sample ID: 500-167372-4**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	3.3		0.56	0.10	ug/L		07/31/19 10:55	08/02/19 04:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	199	X	25 - 130				07/31/19 10:55	08/02/19 04:11	1

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# Definitions/Glossary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# QC Association Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

## GC Semi VOA

### Prep Batch: 497563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167372-1	MW-13A	Total/NA	Water	8151A	
500-167372-2	MW-23	Total/NA	Water	8151A	
500-167372-3	MW-24	Total/NA	Water	8151A	
500-167372-4	MW-30	Total/NA	Water	8151A	
MB 500-497563/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-497563/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-497563/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 497773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-167372-1	MW-13A	Total/NA	Water	8151A	497563
500-167372-2	MW-23	Total/NA	Water	8151A	497563
500-167372-3	MW-24	Total/NA	Water	8151A	497563
500-167372-4	MW-30	Total/NA	Water	8151A	497563
MB 500-497563/1-A	Method Blank	Total/NA	Water	8151A	497563
LCS 500-497563/2-A	Lab Control Sample	Total/NA	Water	8151A	497563
LCSD 500-497563/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	497563

# Surrogate Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

**Method: 8151A - Herbicides (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-167372-1	MW-13A	142 X
500-167372-2	MW-23	128
500-167372-3	MW-24	143 X
500-167372-4	MW-30	199 X
LCS 500-497563/2-A	Lab Control Sample	129
LCSD 500-497563/3-A	Lab Control Sample Dup	125
MB 500-497563/1-A	Method Blank	140 X

### Surrogate Legend

DCPAA = DCAA

# QC Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 500-497563/1-A**  
**Matrix: Water**  
**Analysis Batch: 497773**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 497563**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.50		0.50	0.090	ug/L		07/31/19 10:55	08/02/19 00:55	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	140	X	25 - 130				07/31/19 10:55	08/02/19 00:55	1

**Lab Sample ID: LCS 500-497563/2-A**  
**Matrix: Water**  
**Analysis Batch: 497773**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 497563**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Pentachlorophenol	2.53	1.96		ug/L		77	40 - 122		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
DCAA	129		25 - 130						

**Lab Sample ID: LCSD 500-497563/3-A**  
**Matrix: Water**  
**Analysis Batch: 497773**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 497563**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	2.53	2.12		ug/L		84	40 - 122	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCAA	125		25 - 130						

# Lab Chronicle

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

## Client Sample ID: MW-13A

Date Collected: 07/25/19 08:40

Date Received: 07/26/19 09:35

Lab Sample ID: 500-167372-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497563	07/31/19 10:55	JVD	TAL CHI
Total/NA	Analysis	8151A		1	497773	08/02/19 02:33	JB	TAL CHI

## Client Sample ID: MW-23

Date Collected: 07/25/19 15:05

Date Received: 07/26/19 09:35

Lab Sample ID: 500-167372-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497563	07/31/19 10:55	JVD	TAL CHI
Total/NA	Analysis	8151A		1	497773	08/02/19 02:58	JB	TAL CHI

## Client Sample ID: MW-24

Date Collected: 07/25/19 13:10

Date Received: 07/26/19 09:35

Lab Sample ID: 500-167372-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497563	07/31/19 10:55	JVD	TAL CHI
Total/NA	Analysis	8151A		1	497773	08/02/19 03:22	JB	TAL CHI

## Client Sample ID: MW-30

Date Collected: 07/25/19 11:00

Date Received: 07/26/19 09:35

Lab Sample ID: 500-167372-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			497563	07/31/19 10:55	JVD	TAL CHI
Total/NA	Analysis	8151A		1	497773	08/02/19 04:11	JB	TAL CHI

### Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

# Accreditation/Certification Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 500-15588

Job ID: 500-167372-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	77001	04-30-20

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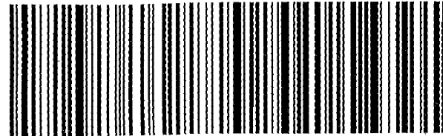
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500-167372 Waybill



FID 624816 26JUL19 FLOA 569C2/A6F9/9C6A

FedEx Express Package US Airbill  
FedEx Tracking Number 8142 2549 8935

1 From  
Date 7/25/19  
Sender's Name GARY SIMCOX Phone 336 339-2425  
Company S. ME, INC.  
Address 8646 W. MARKET ST., SUITE 105  
City GREENSBORO State NC ZIP 27409

2 Your Internal Billing Reference

3 To  
Recipient's Name SAMPLE RECEIVING Phone 708 534-5200  
Company TESI AMERICA CHICAGO  
Address 2417 BOND ST.  
City UNIVERSITY PARK State IL ZIP 60484

Form ID No. 0200

4 Express Package Service \*To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day  
 FedEx First Overnight  
 FedEx Priority Overnight  
 FedEx Standard Overnight  
 FedEx Express Saver

5 Packaging \*Declared value limit \$500.  
 FedEx Envelope\*  FedEx Pak\*  FedEx Box  FedEx Tube  Other

6 Special Handling and Delivery Signature Options  
 Saturday Delivery  
 No Signature Required  
 Direct Signature  
 Indirect Signature  
Does this shipment contain dangerous goods?  
 No  Yes (See attached Shipper's Declaration)  Yes (Shipper's Declaration attached)  
Dry Ice Dry Ice, SUN 106  
Cargo Aircraft Only

7 Payment Bill to:  
Enter FedEx Acct. No. or Credit Card No. below. Obtain receipt Acct. No.   
 Sender  Recipient  Third Party  Credit Card  Cash/Check  
Total Packages 79 Total Weight 60 lbs. Credit Card Acct. No.

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fedex.com 1.800.GoFedEx 1.800.463.3339



8142 2549 8935

Align Open End of FedEx Pouch Here

# Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 500-167372-1

**Login Number: 167372**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: James, Jeff A**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

August 13, 2019

Mr. Ed Henriques  
S&ME, Inc.  
8646 West Market Street  
Suite 105  
Greensboro, NC 27409

RE: Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

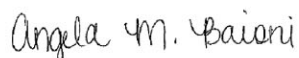
Dear Mr. Henriques:

Enclosed are the analytical results for sample(s) received by the laboratory between July 24, 2019 and July 26, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

A revised report is being submitted on 8/13/19 to report an additional 8270 compound, per client request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angela Baioni  
angela.baioni@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

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### Charlotte Certification IDs

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

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92438275001	MW-15	Water	07/22/19 14:20	07/24/19 09:13
92438275002	MW-29	Water	07/22/19 16:30	07/24/19 09:13
92438275003	MW-10	Water	07/23/19 08:15	07/24/19 09:13
92438275004	MW-14A	Water	07/23/19 10:15	07/24/19 09:13
92438275005	MW-13A	Water	07/25/19 08:40	07/26/19 13:20
92438275006	MW-20	Water	07/24/19 16:20	07/26/19 13:20
92438275007	MW-21	Water	07/24/19 08:10	07/26/19 13:20
92438275008	MW-22	Water	07/24/19 10:05	07/26/19 13:20
92438275009	MW-24	Water	07/25/19 13:10	07/26/19 13:20
92438275010	MW-25	Water	07/23/19 12:25	07/26/19 13:20
92438275011	MW-26	Water	07/23/19 14:55	07/26/19 13:20
92438275012	MW-27	Water	07/24/19 14:10	07/26/19 13:20
92438275013	MW-28	Water	07/24/19 12:05	07/26/19 13:20
92438275014	MW-30	Water	07/25/19 11:00	07/26/19 13:20
92438275015	MW-23	Water	07/25/19 15:05	07/26/19 13:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92438275001	MW-15	EPA 8270D	BPJ	72	PASI-C
92438275002	MW-29	EPA 8270D	BPJ	72	PASI-C
92438275003	MW-10	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	BRJ	1	PASI-A
92438275004	MW-14A	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	BRJ	1	PASI-A
92438275005	MW-13A	EPA 8270D	BPJ	72	PASI-C
92438275006	MW-20	EPA 8270D	BPJ	72	PASI-C
92438275007	MW-21	EPA 8270D	BPJ	72	PASI-C
92438275008	MW-22	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275009	MW-24	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275010	MW-25	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275011	MW-26	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275012	MW-27	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275013	MW-28	EPA 8270D	BPJ	72	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92438275014	MW-30	EPA 8270D	BPJ	73	PASI-C
		SM 2320B-2011	ECH	1	PASI-A
		SM 4500-CI-E-2011	MDW	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92438275015	MW-23	EPA 8270D	BPJ	72	PASI-C

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

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**Method:** EPA 8270D

**Description:** 8270 MSSV Semivolatile Organic

**Client:** S&ME - Greensboro

**Date:** August 13, 2019

**General Information:**

15 samples were analyzed for EPA 8270D. 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 3510C 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.

QC Batch: 488879

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: 2638793)
- 3&4-Methylphenol(m&p Cresol)

**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: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

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**Method:** SM 2320B-2011  
**Description:** 2320B Alkalinity  
**Client:** S&ME - Greensboro  
**Date:** August 13, 2019

**General Information:**

9 samples were analyzed for SM 2320B-2011. 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.

**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: Marsh Pamplico 500-15588

Pace Project No.: 92438275

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**Method:** SM 4500-CI-E-2011

**Description:** 4500 Chloride

**Client:** S&ME - Greensboro

**Date:** August 13, 2019

**General Information:**

9 samples were analyzed for SM 4500-CI-E-2011. 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.

**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: 489081

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92437789001,92438964001

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2639685)
  - Chloride
- MSD (Lab ID: 2639686)
  - Chloride

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

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**Method:** SM 5310B-2011  
**Description:** 5310B TOC  
**Client:** S&ME - Greensboro  
**Date:** August 13, 2019

**General Information:**

9 samples were analyzed for SM 5310B-2011. 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.

**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:**

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: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-15 Lab ID: 92438275001 Collected: 07/22/19 14:20 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 14:45	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 14:45	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/01/19 14:45	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/01/19 14:45	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 14:45	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 14:45	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 14:45	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 14:45	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 14:45	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/01/19 14:45	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/01/19 14:45	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 14:45	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 14:45	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 14:45	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 14:45	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 14:45	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/01/19 14:45	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 14:45	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/01/19 14:45	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 14:45	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/01/19 14:45	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/01/19 14:45	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/01/19 14:45	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 14:45	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 14:45	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 14:45	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 14:45	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 14:45	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-15 Lab ID: 92438275001 Collected: 07/22/19 14:20 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/01/19 14:45	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/01/19 14:45	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/01/19 14:45	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/01/19 14:45	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 14:45	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 14:45	108-60-1	v1
Pentachlorophenol	46.6	ug/L	25.0	3.5	1	07/27/19 19:19	08/01/19 14:45	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 14:45	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 14:45	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 14:45	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/01/19 14:45	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 14:45	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 14:45	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	71	%	21-110		1	07/27/19 19:19	08/01/19 14:45	4165-60-0	
2-Fluorobiphenyl (S)	71	%	27-110		1	07/27/19 19:19	08/01/19 14:45	321-60-8	
Terphenyl-d14 (S)	90	%	31-107		1	07/27/19 19:19	08/01/19 14:45	1718-51-0	
Phenol-d6 (S)	29	%	10-110		1	07/27/19 19:19	08/01/19 14:45	13127-88-3	
2-Fluorophenol (S)	44	%	12-110		1	07/27/19 19:19	08/01/19 14:45	367-12-4	
2,4,6-Tribromophenol (S)	85	%	27-110		1	07/27/19 19:19	08/01/19 14:45	118-79-6	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

**Sample: MW-29** Lab ID: 92438275002 Collected: 07/22/19 16:30 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 15:17	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:17	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/01/19 15:17	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/01/19 15:17	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:17	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:17	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:17	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:17	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:17	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/01/19 15:17	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/01/19 15:17	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 15:17	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 15:17	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 15:17	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:17	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:17	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/01/19 15:17	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:17	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/01/19 15:17	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:17	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/01/19 15:17	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/01/19 15:17	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/01/19 15:17	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:17	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:17	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 15:17	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 15:17	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:17	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	78-59-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-29 Lab ID: 92438275002 Collected: 07/22/19 16:30 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/01/19 15:17	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/01/19 15:17	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/01/19 15:17	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/01/19 15:17	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:17	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 15:17	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/01/19 15:17	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:17	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 15:17	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:17	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/01/19 15:17	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:17	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:17	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	57	%	21-110		1	07/27/19 19:19	08/01/19 15:17	4165-60-0	
2-Fluorobiphenyl (S)	59	%	27-110		1	07/27/19 19:19	08/01/19 15:17	321-60-8	
Terphenyl-d14 (S)	92	%	31-107		1	07/27/19 19:19	08/01/19 15:17	1718-51-0	
Phenol-d6 (S)	23	%	10-110		1	07/27/19 19:19	08/01/19 15:17	13127-88-3	
2-Fluorophenol (S)	35	%	12-110		1	07/27/19 19:19	08/01/19 15:17	367-12-4	
2,4,6-Tribromophenol (S)	76	%	27-110		1	07/27/19 19:19	08/01/19 15:17	118-79-6	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

**Sample: MW-10** Lab ID: 92438275003 Collected: 07/23/19 08:15 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 15:49	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:49	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/01/19 15:49	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/01/19 15:49	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:49	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:49	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:49	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:49	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:49	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/01/19 15:49	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/01/19 15:49	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 15:49	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 15:49	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 15:49	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:49	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 15:49	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/01/19 15:49	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:49	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/01/19 15:49	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:49	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/01/19 15:49	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/01/19 15:49	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/01/19 15:49	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:49	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:49	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 15:49	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 15:49	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 15:49	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-10      Lab ID: 92438275003      Collected: 07/23/19 08:15      Received: 07/24/19 09:13      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/01/19 15:49	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/01/19 15:49	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/01/19 15:49	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/01/19 15:49	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 15:49	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 15:49	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/01/19 15:49	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 15:49	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 15:49	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 15:49	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/01/19 15:49	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 15:49	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 15:49	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	80	%	21-110		1	07/27/19 19:19	08/01/19 15:49	4165-60-0	
2-Fluorobiphenyl (S)	80	%	27-110		1	07/27/19 19:19	08/01/19 15:49	321-60-8	
Terphenyl-d14 (S)	88	%	31-107		1	07/27/19 19:19	08/01/19 15:49	1718-51-0	
Phenol-d6 (S)	30	%	10-110		1	07/27/19 19:19	08/01/19 15:49	13127-88-3	
2-Fluorophenol (S)	49	%	12-110		1	07/27/19 19:19	08/01/19 15:49	367-12-4	
2,4,6-Tribromophenol (S)	92	%	27-110		1	07/27/19 19:19	08/01/19 15:49	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	96.0	mg/L	5.0	5.0	1		07/26/19 21:16		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	11.6	mg/L	1.0	0.50	1		07/29/19 20:40	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	3.8	mg/L	1.0	0.50	1		07/26/19 06:58	7440-44-0	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: **MW-14A** Lab ID: **92438275004** Collected: 07/23/19 10:15 Received: 07/24/19 09:13 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 16:21	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 16:21	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/01/19 16:21	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/01/19 16:21	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 16:21	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 16:21	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 16:21	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 16:21	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 16:21	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/01/19 16:21	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/01/19 16:21	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/01/19 16:21	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 16:21	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/01/19 16:21	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 16:21	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/01/19 16:21	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/01/19 16:21	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 16:21	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/01/19 16:21	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 16:21	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/01/19 16:21	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/01/19 16:21	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/01/19 16:21	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 16:21	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 16:21	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 16:21	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 16:21	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/01/19 16:21	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-14A      Lab ID: 92438275004      Collected: 07/23/19 10:15      Received: 07/24/19 09:13      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/01/19 16:21	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/01/19 16:21	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/01/19 16:21	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/01/19 16:21	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/01/19 16:21	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/01/19 16:21	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/01/19 16:21	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/01/19 16:21	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/01/19 16:21	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/01/19 16:21	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/01/19 16:21	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/01/19 16:21	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/01/19 16:21	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	55	%	21-110		1	07/27/19 19:19	08/01/19 16:21	4165-60-0	
2-Fluorobiphenyl (S)	55	%	27-110		1	07/27/19 19:19	08/01/19 16:21	321-60-8	
Terphenyl-d14 (S)	87	%	31-107		1	07/27/19 19:19	08/01/19 16:21	1718-51-0	
Phenol-d6 (S)	20	%	10-110		1	07/27/19 19:19	08/01/19 16:21	13127-88-3	
2-Fluorophenol (S)	31	%	12-110		1	07/27/19 19:19	08/01/19 16:21	367-12-4	
2,4,6-Tribromophenol (S)	77	%	27-110		1	07/27/19 19:19	08/01/19 16:21	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	14.2	mg/L	5.0	5.0	1		07/26/19 21:42		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	9.5	mg/L	1.0	0.50	1		07/29/19 20:41	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	2.5	mg/L	1.0	0.50	1		07/26/19 07:09	7440-44-0	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-13A Lab ID: 92438275005 Collected: 07/25/19 08:40 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 16:59	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 16:59	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/02/19 16:59	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/02/19 16:59	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 16:59	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 16:59	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 16:59	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 16:59	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 16:59	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/02/19 16:59	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/02/19 16:59	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 16:59	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 16:59	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 16:59	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 16:59	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 16:59	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/02/19 16:59	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 16:59	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/02/19 16:59	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 16:59	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/02/19 16:59	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/02/19 16:59	51-28-5	
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/02/19 16:59	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 16:59	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 16:59	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 16:59	77-47-4	v3
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 16:59	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 16:59	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

**Sample: MW-13A**      **Lab ID: 92438275005**      Collected: 07/25/19 08:40      Received: 07/26/19 13:20      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>									
Analytical Method: EPA 8270D    Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/02/19 16:59	88-74-4	v1
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/02/19 16:59	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/02/19 16:59	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/02/19 16:59	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 16:59	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 16:59	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/02/19 16:59	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 16:59	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 16:59	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 16:59	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/02/19 16:59	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 16:59	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 16:59	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	96	%	21-110		1	07/27/19 19:19	08/02/19 16:59	4165-60-0	
2-Fluorobiphenyl (S)	87	%	27-110		1	07/27/19 19:19	08/02/19 16:59	321-60-8	
Terphenyl-d14 (S)	73	%	31-107		1	07/27/19 19:19	08/02/19 16:59	1718-51-0	
Phenol-d6 (S)	29	%	10-110		1	07/27/19 19:19	08/02/19 16:59	13127-88-3	
2-Fluorophenol (S)	45	%	12-110		1	07/27/19 19:19	08/02/19 16:59	367-12-4	
2,4,6-Tribromophenol (S)	78	%	27-110		1	07/27/19 19:19	08/02/19 16:59	118-79-6	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-20 Lab ID: 92438275006 Collected: 07/24/19 16:20 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>									
Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 17:30	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 17:30	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/02/19 17:30	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/02/19 17:30	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 17:30	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 17:30	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 17:30	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 17:30	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 17:30	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/02/19 17:30	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/02/19 17:30	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 17:30	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 17:30	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 17:30	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 17:30	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 17:30	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/02/19 17:30	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 17:30	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/02/19 17:30	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 17:30	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/02/19 17:30	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/02/19 17:30	51-28-5	
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/02/19 17:30	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 17:30	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 17:30	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 17:30	77-47-4	v3
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 17:30	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 17:30	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-20 Lab ID: 92438275006 Collected: 07/24/19 16:20 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/02/19 17:30	88-74-4	v1
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/02/19 17:30	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/02/19 17:30	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/02/19 17:30	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 17:30	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 17:30	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/02/19 17:30	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 17:30	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 17:30	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 17:30	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/02/19 17:30	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 17:30	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 17:30	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	67	%	21-110		1	07/27/19 19:19	08/02/19 17:30	4165-60-0	
2-Fluorobiphenyl (S)	70	%	27-110		1	07/27/19 19:19	08/02/19 17:30	321-60-8	
Terphenyl-d14 (S)	89	%	31-107		1	07/27/19 19:19	08/02/19 17:30	1718-51-0	
Phenol-d6 (S)	44	%	10-110		1	07/27/19 19:19	08/02/19 17:30	13127-88-3	
2-Fluorophenol (S)	58	%	12-110		1	07/27/19 19:19	08/02/19 17:30	367-12-4	
2,4,6-Tribromophenol (S)	79	%	27-110		1	07/27/19 19:19	08/02/19 17:30	118-79-6	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-21 Lab ID: 92438275007 Collected: 07/24/19 08:10 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 18:02	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:02	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/02/19 18:02	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/02/19 18:02	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:02	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:02	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:02	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:02	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:02	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/02/19 18:02	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/02/19 18:02	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 18:02	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 18:02	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 18:02	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:02	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:02	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/02/19 18:02	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:02	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/02/19 18:02	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:02	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/02/19 18:02	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/02/19 18:02	51-28-5	
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/02/19 18:02	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:02	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:02	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 18:02	77-47-4	v3
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 18:02	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:02	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-21 Lab ID: 92438275007 Collected: 07/24/19 08:10 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/02/19 18:02	88-74-4	v1
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/02/19 18:02	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/02/19 18:02	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/02/19 18:02	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:02	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 18:02	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/02/19 18:02	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:02	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 18:02	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:02	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/02/19 18:02	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:02	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:02	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	68	%	21-110		1	07/27/19 19:19	08/02/19 18:02	4165-60-0	
2-Fluorobiphenyl (S)	59	%	27-110		1	07/27/19 19:19	08/02/19 18:02	321-60-8	
Terphenyl-d14 (S)	83	%	31-107		1	07/27/19 19:19	08/02/19 18:02	1718-51-0	
Phenol-d6 (S)	29	%	10-110		1	07/27/19 19:19	08/02/19 18:02	13127-88-3	
2-Fluorophenol (S)	45	%	12-110		1	07/27/19 19:19	08/02/19 18:02	367-12-4	
2,4,6-Tribromophenol (S)	78	%	27-110		1	07/27/19 19:19	08/02/19 18:02	118-79-6	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-22 Lab ID: 92438275008 Collected: 07/24/19 10:05 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 18:33	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:33	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/02/19 18:33	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/02/19 18:33	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:33	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:33	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:33	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:33	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:33	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/02/19 18:33	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/02/19 18:33	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 18:33	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 18:33	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 18:33	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:33	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 18:33	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/02/19 18:33	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:33	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/02/19 18:33	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:33	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/02/19 18:33	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/02/19 18:33	51-28-5	
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/02/19 18:33	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:33	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:33	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 18:33	77-47-4	v3
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 18:33	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 18:33	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-22      Lab ID: 92438275008      Collected: 07/24/19 10:05      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/02/19 18:33	88-74-4	v1
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/02/19 18:33	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/02/19 18:33	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/02/19 18:33	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 18:33	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 18:33	108-60-1	v1
Pentachlorophenol	83.8	ug/L	25.0	3.5	1	07/27/19 19:19	08/02/19 18:33	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 18:33	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 18:33	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 18:33	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/02/19 18:33	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 18:33	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 18:33	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	33	%	21-110		1	07/27/19 19:19	08/02/19 18:33	4165-60-0	
2-Fluorobiphenyl (S)	36	%	27-110		1	07/27/19 19:19	08/02/19 18:33	321-60-8	
Terphenyl-d14 (S)	69	%	31-107		1	07/27/19 19:19	08/02/19 18:33	1718-51-0	
Phenol-d6 (S)	13	%	10-110		1	07/27/19 19:19	08/02/19 18:33	13127-88-3	
2-Fluorophenol (S)	20	%	12-110		1	07/27/19 19:19	08/02/19 18:33	367-12-4	
2,4,6-Tribromophenol (S)	46	%	27-110		1	07/27/19 19:19	08/02/19 18:33	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	24.4	mg/L	5.0	5.0	1		08/01/19 13:23		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	8.8	mg/L	1.0	0.50	1		07/29/19 20:43	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	2.3	mg/L	1.0	0.50	1		08/02/19 23:55	7440-44-0	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-24 Lab ID: 92438275009 Collected: 07/25/19 13:10 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>									
Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 19:04	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 19:04	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/02/19 19:04	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/02/19 19:04	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 19:04	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 19:04	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 19:04	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 19:04	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 19:04	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/02/19 19:04	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/02/19 19:04	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/02/19 19:04	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 19:04	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/02/19 19:04	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 19:04	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/02/19 19:04	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/02/19 19:04	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 19:04	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/02/19 19:04	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 19:04	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/02/19 19:04	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/02/19 19:04	51-28-5	
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/02/19 19:04	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 19:04	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 19:04	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 19:04	77-47-4	v3
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 19:04	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/02/19 19:04	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-24      Lab ID: 92438275009      Collected: 07/25/19 13:10      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/02/19 19:04	88-74-4	v1
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/02/19 19:04	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/02/19 19:04	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/02/19 19:04	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/02/19 19:04	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/02/19 19:04	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/02/19 19:04	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/02/19 19:04	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/02/19 19:04	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/02/19 19:04	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/02/19 19:04	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/02/19 19:04	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/02/19 19:04	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	77	%	21-110		1	07/27/19 19:19	08/02/19 19:04	4165-60-0	
2-Fluorobiphenyl (S)	81	%	27-110		1	07/27/19 19:19	08/02/19 19:04	321-60-8	
Terphenyl-d14 (S)	82	%	31-107		1	07/27/19 19:19	08/02/19 19:04	1718-51-0	
Phenol-d6 (S)	57	%	10-110		1	07/27/19 19:19	08/02/19 19:04	13127-88-3	
2-Fluorophenol (S)	71	%	12-110		1	07/27/19 19:19	08/02/19 19:04	367-12-4	
2,4,6-Tribromophenol (S)	73	%	27-110		1	07/27/19 19:19	08/02/19 19:04	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	1380	mg/L	5.0	5.0	1		08/01/19 13:30		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	22.0	mg/L	1.0	0.50	1		07/29/19 20:44	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	39.0	mg/L	1.0	0.50	1		08/03/19 00:08	7440-44-0	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-25 Lab ID: 92438275010 Collected: 07/23/19 12:25 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	07/31/19 13:39	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 13:39	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	07/31/19 13:39	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	07/31/19 13:39	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 13:39	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 13:39	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 13:39	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 13:39	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 13:39	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	07/31/19 13:39	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	07/31/19 13:39	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	07/31/19 13:39	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	07/31/19 13:39	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	07/31/19 13:39	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 13:39	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 13:39	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	07/31/19 13:39	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 13:39	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	07/31/19 13:39	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 13:39	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	07/31/19 13:39	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	07/31/19 13:39	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	07/31/19 13:39	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 13:39	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 13:39	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	07/31/19 13:39	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	07/31/19 13:39	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 13:39	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-25      Lab ID: 92438275010      Collected: 07/23/19 12:25      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	07/31/19 13:39	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	07/31/19 13:39	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	07/31/19 13:39	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	07/31/19 13:39	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 13:39	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	07/31/19 13:39	108-60-1	v1
Pentachlorophenol	40.2	ug/L	25.0	3.5	1	07/27/19 19:19	07/31/19 13:39	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 13:39	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	07/31/19 13:39	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 13:39	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	07/31/19 13:39	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 13:39	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 13:39	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	33	%	21-110		1	07/27/19 19:19	07/31/19 13:39	4165-60-0	
2-Fluorobiphenyl (S)	46	%	27-110		1	07/27/19 19:19	07/31/19 13:39	321-60-8	
Terphenyl-d14 (S)	55	%	31-107		1	07/27/19 19:19	07/31/19 13:39	1718-51-0	
Phenol-d6 (S)	16	%	10-110		1	07/27/19 19:19	07/31/19 13:39	13127-88-3	
2-Fluorophenol (S)	21	%	12-110		1	07/27/19 19:19	07/31/19 13:39	367-12-4	
2,4,6-Tribromophenol (S)	73	%	27-110		1	07/27/19 19:19	07/31/19 13:39	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	89.2	mg/L	5.0	5.0	1		08/01/19 13:43		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	9.0	mg/L	1.0	0.50	1		07/29/19 20:45	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	5.0	mg/L	1.0	0.50	1		08/03/19 00:18	7440-44-0	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-26 Lab ID: 92438275011 Collected: 07/23/19 14:55 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	07/31/19 14:10	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 14:10	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	07/31/19 14:10	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	07/31/19 14:10	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 14:10	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 14:10	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 14:10	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 14:10	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 14:10	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	07/31/19 14:10	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	07/31/19 14:10	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	07/31/19 14:10	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	07/31/19 14:10	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	07/31/19 14:10	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 14:10	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	07/31/19 14:10	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	07/31/19 14:10	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 14:10	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	07/31/19 14:10	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 14:10	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	07/31/19 14:10	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	07/31/19 14:10	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	07/31/19 14:10	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 14:10	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 14:10	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	07/31/19 14:10	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	07/31/19 14:10	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	07/31/19 14:10	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-26      Lab ID: 92438275011      Collected: 07/23/19 14:55      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	15831-10-4	L1,v1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	07/31/19 14:10	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	07/31/19 14:10	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	07/31/19 14:10	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	07/31/19 14:10	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	07/31/19 14:10	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	07/31/19 14:10	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	07/31/19 14:10	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	07/31/19 14:10	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	07/31/19 14:10	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	07/31/19 14:10	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	07/31/19 14:10	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	07/31/19 14:10	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	07/31/19 14:10	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	37	%	21-110		1	07/27/19 19:19	07/31/19 14:10	4165-60-0	
2-Fluorobiphenyl (S)	36	%	27-110		1	07/27/19 19:19	07/31/19 14:10	321-60-8	
Terphenyl-d14 (S)	71	%	31-107		1	07/27/19 19:19	07/31/19 14:10	1718-51-0	
Phenol-d6 (S)	15	%	10-110		1	07/27/19 19:19	07/31/19 14:10	13127-88-3	
2-Fluorophenol (S)	24	%	12-110		1	07/27/19 19:19	07/31/19 14:10	367-12-4	
2,4,6-Tribromophenol (S)	55	%	27-110		1	07/27/19 19:19	07/31/19 14:10	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	127	mg/L	5.0	5.0	1		08/01/19 14:01		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	11.8	mg/L	1.0	0.50	1		07/29/19 20:46	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	2.4	mg/L	1.0	0.50	1		08/03/19 00:29	7440-44-0	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-27 Lab ID: 92438275012 Collected: 07/24/19 14:10 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 12:08	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:08	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/05/19 12:08	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/05/19 12:08	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:08	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:08	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:08	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:08	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:08	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/05/19 12:08	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/05/19 12:08	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 12:08	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 12:08	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 12:08	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:08	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:08	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/05/19 12:08	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:08	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/05/19 12:08	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:08	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/05/19 12:08	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/05/19 12:08	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/05/19 12:08	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:08	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:08	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 12:08	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 12:08	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:08	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-27      Lab ID: 92438275012      Collected: 07/24/19 14:10      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/05/19 12:08	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/05/19 12:08	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/05/19 12:08	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/05/19 12:08	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:08	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 12:08	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/05/19 12:08	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:08	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 12:08	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:08	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/05/19 12:08	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:08	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:08	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	37	%	21-110		1	07/27/19 19:19	08/05/19 12:08	4165-60-0	
2-Fluorobiphenyl (S)	43	%	27-110		1	07/27/19 19:19	08/05/19 12:08	321-60-8	
Terphenyl-d14 (S)	63	%	31-107		1	07/27/19 19:19	08/05/19 12:08	1718-51-0	
Phenol-d6 (S)	14	%	10-110		1	07/27/19 19:19	08/05/19 12:08	13127-88-3	
2-Fluorophenol (S)	22	%	12-110		1	07/27/19 19:19	08/05/19 12:08	367-12-4	
2,4,6-Tribromophenol (S)	74	%	27-110		1	07/27/19 19:19	08/05/19 12:08	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	12.0	mg/L	5.0	5.0	1		08/01/19 14:13		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	8.3	mg/L	1.0	0.50	1		07/29/19 20:46	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	2.1	mg/L	1.0	0.50	1		08/03/19 00:39	7440-44-0	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-28 Lab ID: 92438275013 Collected: 07/24/19 12:05 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 12:40	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:40	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/05/19 12:40	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/05/19 12:40	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:40	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:40	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:40	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:40	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:40	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/05/19 12:40	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/05/19 12:40	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 12:40	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 12:40	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 12:40	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:40	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 12:40	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/05/19 12:40	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:40	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/05/19 12:40	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:40	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/05/19 12:40	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/05/19 12:40	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/05/19 12:40	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:40	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:40	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 12:40	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 12:40	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 12:40	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-28      Lab ID: 92438275013      Collected: 07/24/19 12:05      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/05/19 12:40	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/05/19 12:40	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/05/19 12:40	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/05/19 12:40	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 12:40	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 12:40	108-60-1	v1
Pentachlorophenol	371	ug/L	125	17.6	5	07/27/19 19:19	08/06/19 10:50	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 12:40	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 12:40	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 12:40	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/05/19 12:40	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 12:40	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 12:40	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	53	%	21-110		1	07/27/19 19:19	08/05/19 12:40	4165-60-0	
2-Fluorobiphenyl (S)	56	%	27-110		1	07/27/19 19:19	08/05/19 12:40	321-60-8	
Terphenyl-d14 (S)	92	%	31-107		1	07/27/19 19:19	08/05/19 12:40	1718-51-0	
Phenol-d6 (S)	19	%	10-110		1	07/27/19 19:19	08/05/19 12:40	13127-88-3	
2-Fluorophenol (S)	31	%	12-110		1	07/27/19 19:19	08/05/19 12:40	367-12-4	
2,4,6-Tribromophenol (S)	77	%	27-110		1	07/27/19 19:19	08/05/19 12:40	118-79-6	
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	6.8	mg/L	5.0	5.0	1		08/01/19 14:19		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	8.9	mg/L	1.0	0.50	1		07/29/19 20:49	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	2.3	mg/L	1.0	0.50	1		08/03/19 00:50	7440-44-0	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-30 Lab ID: 92438275014 Collected: 07/25/19 11:00 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 13:11	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:11	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/05/19 13:11	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/05/19 13:11	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:11	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:11	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:11	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:11	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:11	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/05/19 13:11	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/05/19 13:11	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 13:11	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 13:11	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 13:11	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:11	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:11	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/05/19 13:11	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:11	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/05/19 13:11	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:11	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/05/19 13:11	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/05/19 13:11	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/05/19 13:11	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:11	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:11	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 13:11	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 13:11	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:11	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	78-59-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

Sample: MW-30      Lab ID: 92438275014      Collected: 07/25/19 11:00      Received: 07/26/19 13:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/05/19 13:11	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/05/19 13:11	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/05/19 13:11	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/05/19 13:11	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:11	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 13:11	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/05/19 13:11	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:11	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 13:11	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:11	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/05/19 13:11	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:11	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:11	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	81	%	21-110		1	07/27/19 19:19	08/05/19 13:11	4165-60-0	
2-Fluorobiphenyl (S)	86	%	27-110		1	07/27/19 19:19	08/05/19 13:11	321-60-8	
Terphenyl-d14 (S)	79	%	31-107		1	07/27/19 19:19	08/05/19 13:11	1718-51-0	
Phenol-d6 (S)	33	%	10-110		1	07/27/19 19:19	08/05/19 13:11	13127-88-3	
2-Fluorophenol (S)	53	%	12-110		1	07/27/19 19:19	08/05/19 13:11	367-12-4	
2,4,6-Tribromophenol (S)	98	%	27-110		1	07/27/19 19:19	08/05/19 13:11	118-79-6	
<b>Tentatively Identified Compounds</b>									
Propane, 1,2-dichloro-	16.7J	ug/L			1	07/27/19 19:19	08/05/19 13:11	78-87-5	N
<b>2320B Alkalinity</b> Analytical Method: SM 2320B-2011									
Alkalinity, Total as CaCO3	284	mg/L	5.0	5.0	1		08/01/19 14:24		
<b>4500 Chloride</b> Analytical Method: SM 4500-Cl-E-2011									
Chloride	17.3	mg/L	1.0	0.50	1		07/29/19 20:50	16887-00-6	
<b>5310B TOC</b> Analytical Method: SM 5310B-2011									
Total Organic Carbon	3.4	mg/L	1.0	0.50	1		08/03/19 01:25	7440-44-0	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-23 Lab ID: 92438275015 Collected: 07/25/19 15:05 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	83-32-9	
Acenaphthylene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	208-96-8	
Acetophenone	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 13:43	98-86-2	
Anthracene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:43	120-12-7	
Atrazine	<20.0	ug/L	20.0	2.6	1	07/27/19 19:19	08/05/19 13:43	1912-24-9	
Benzaldehyde	<20.0	ug/L	20.0	1.3	1	07/27/19 19:19	08/05/19 13:43	100-52-7	
Benzo(a)anthracene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:43	56-55-3	
Benzo(a)pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:43	50-32-8	
Benzo(b)fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:43	205-99-2	
Benzo(g,h,i)perylene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:43	191-24-2	
Benzo(k)fluoranthene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:43	207-08-9	
Biphenyl (Diphenyl)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	92-52-4	
4-Bromophenylphenyl ether	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	101-55-3	
Butylbenzylphthalate	<10.0	ug/L	10.0	2.5	1	07/27/19 19:19	08/05/19 13:43	85-68-7	
Caprolactam	<10.0	ug/L	10.0	0.96	1	07/27/19 19:19	08/05/19 13:43	105-60-2	
Carbazole	<10.0	ug/L	10.0	1.9	1	07/27/19 19:19	08/05/19 13:43	86-74-8	
4-Chloro-3-methylphenol	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 13:43	59-50-7	
4-Chloroaniline	<20.0	ug/L	20.0	2.8	1	07/27/19 19:19	08/05/19 13:43	106-47-8	
bis(2-Chloroethoxy)methane	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	111-91-1	
bis(2-Chloroethyl) ether	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:43	111-44-4	
2-Chloronaphthalene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	91-58-7	
2-Chlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	95-57-8	
4-Chlorophenylphenyl ether	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	7005-72-3	
Chrysene	<10.0	ug/L	10.0	2.1	1	07/27/19 19:19	08/05/19 13:43	218-01-9	
Dibenzo(a,e)pyrene	<50.0	ug/L	50.0	3.4	1	07/27/19 19:19	08/05/19 13:43	192-65-4	
Dibenzofuran	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:43	132-64-9	
3,3'-Dichlorobenzidine	<20.0	ug/L	20.0	3.9	1	07/27/19 19:19	08/05/19 13:43	91-94-1	
2,4-Dichlorophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	120-83-2	
Diethylphthalate	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	84-66-2	
2,4-Dimethylphenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	105-67-9	
Dimethylphthalate	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	131-11-3	
Di-n-butylphthalate	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:43	84-74-2	
4,6-Dinitro-2-methylphenol	<20.0	ug/L	20.0	2.2	1	07/27/19 19:19	08/05/19 13:43	534-52-1	v1
2,4-Dinitrophenol	<50.0	ug/L	50.0	5.1	1	07/27/19 19:19	08/05/19 13:43	51-28-5	v1
2,4-Dinitrotoluene	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	121-14-2	
2,6-Dinitrotoluene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	606-20-2	
Di-n-octylphthalate	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	117-84-0	
bis(2-Ethylhexyl)phthalate	<6.0	ug/L	6.0	2.3	1	07/27/19 19:19	08/05/19 13:43	117-81-7	
Fluoranthene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:43	206-44-0	
Fluorene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	86-73-7	
Hexachloro-1,3-butadiene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	87-68-3	
Hexachlorobenzene	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:43	118-74-1	
Hexachlorocyclopentadiene	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 13:43	77-47-4	
Hexachloroethane	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 13:43	67-72-1	
Indeno(1,2,3-cd)pyrene	<10.0	ug/L	10.0	2.0	1	07/27/19 19:19	08/05/19 13:43	193-39-5	
Isophorone	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	78-59-1	

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### ANALYTICAL RESULTS

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Sample: MW-23 Lab ID: 92438275015 Collected: 07/25/19 15:05 Received: 07/26/19 13:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
8270 MSSV Semivolatile Organic Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	91-57-6	
2-Methylphenol(o-Cresol)	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	95-48-7	
3&4-Methylphenol(m&p Cresol)	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	15831-10-4	L1
Naphthalene	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	91-20-3	
2-Nitroaniline	<50.0	ug/L	50.0	2.3	1	07/27/19 19:19	08/05/19 13:43	88-74-4	
3-Nitroaniline	<50.0	ug/L	50.0	2.7	1	07/27/19 19:19	08/05/19 13:43	99-09-2	
4-Nitroaniline	<20.0	ug/L	20.0	3.4	1	07/27/19 19:19	08/05/19 13:43	100-01-6	
Nitrobenzene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	98-95-3	
2-Nitrophenol	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	88-75-5	
4-Nitrophenol	<50.0	ug/L	50.0	4.3	1	07/27/19 19:19	08/05/19 13:43	100-02-7	
N-Nitroso-di-n-propylamine	<10.0	ug/L	10.0	1.7	1	07/27/19 19:19	08/05/19 13:43	621-64-7	
N-Nitrosodiphenylamine	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	86-30-6	
2,2'-Oxybis(1-chloropropane)	<10.0	ug/L	10.0	1.8	1	07/27/19 19:19	08/05/19 13:43	108-60-1	v1
Pentachlorophenol	<25.0	ug/L	25.0	3.5	1	07/27/19 19:19	08/05/19 13:43	87-86-5	
Phenanthrene	<10.0	ug/L	10.0	1.6	1	07/27/19 19:19	08/05/19 13:43	85-01-8	
Phenol	<10.0	ug/L	10.0	1.3	1	07/27/19 19:19	08/05/19 13:43	108-95-2	
Pyrene	<10.0	ug/L	10.0	2.2	1	07/27/19 19:19	08/05/19 13:43	129-00-0	
2,3,4,6-Tetrachlorophenol	<10.0	ug/L	10.0	2.9	1	07/27/19 19:19	08/05/19 13:43	58-90-2	
2,4,5-Trichlorophenol	<10.0	ug/L	10.0	1.5	1	07/27/19 19:19	08/05/19 13:43	95-95-4	
2,4,6-Trichlorophenol	<10.0	ug/L	10.0	1.4	1	07/27/19 19:19	08/05/19 13:43	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	75	%	21-110		1	07/27/19 19:19	08/05/19 13:43	4165-60-0	
2-Fluorobiphenyl (S)	80	%	27-110		1	07/27/19 19:19	08/05/19 13:43	321-60-8	
Terphenyl-d14 (S)	59	%	31-107		1	07/27/19 19:19	08/05/19 13:43	1718-51-0	
Phenol-d6 (S)	32	%	10-110		1	07/27/19 19:19	08/05/19 13:43	13127-88-3	
2-Fluorophenol (S)	50	%	12-110		1	07/27/19 19:19	08/05/19 13:43	367-12-4	
2,4,6-Tribromophenol (S)	91	%	27-110		1	07/27/19 19:19	08/05/19 13:43	118-79-6	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 488879 Analysis Method: EPA 8270D  
QC Batch Method: EPA 3510C Analysis Description: 8270 Water MSSV  
Associated Lab Samples: 92438275001, 92438275002, 92438275003, 92438275004, 92438275005, 92438275006, 92438275007, 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014, 92438275015

METHOD BLANK: 2638792 Matrix: Water  
Associated Lab Samples: 92438275001, 92438275002, 92438275003, 92438275004, 92438275005, 92438275006, 92438275007, 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014, 92438275015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,2'-Oxybis(1-chloropropane)	ug/L	<10.0	10.0	1.8	07/30/19 12:40	v1
2,3,4,6-Tetrachlorophenol	ug/L	<10.0	10.0	2.9	07/30/19 12:40	
2,4,5-Trichlorophenol	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
2,4,6-Trichlorophenol	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
2,4-Dichlorophenol	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
2,4-Dimethylphenol	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
2,4-Dinitrophenol	ug/L	<50.0	50.0	5.1	07/30/19 12:40	v1
2,4-Dinitrotoluene	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
2,6-Dinitrotoluene	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
2-Chloronaphthalene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
2-Chlorophenol	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
2-Methylnaphthalene	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
2-Methylphenol(o-Cresol)	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
2-Nitroaniline	ug/L	<50.0	50.0	2.3	07/30/19 12:40	
2-Nitrophenol	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
3&4-Methylphenol(m&p Cresol)	ug/L	<10.0	10.0	1.4	07/30/19 12:40	v1
3,3'-Dichlorobenzidine	ug/L	<20.0	20.0	3.9	07/30/19 12:40	
3-Nitroaniline	ug/L	<50.0	50.0	2.7	07/30/19 12:40	
4,6-Dinitro-2-methylphenol	ug/L	<20.0	20.0	2.2	07/30/19 12:40	v1
4-Bromophenylphenyl ether	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
4-Chloro-3-methylphenol	ug/L	<20.0	20.0	2.8	07/30/19 12:40	
4-Chloroaniline	ug/L	<20.0	20.0	2.8	07/30/19 12:40	
4-Chlorophenylphenyl ether	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
4-Nitroaniline	ug/L	<20.0	20.0	3.4	07/30/19 12:40	
4-Nitrophenol	ug/L	<50.0	50.0	4.3	07/30/19 12:40	
Acenaphthene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Acenaphthylene	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
Acetophenone	ug/L	<10.0	10.0	1.9	07/30/19 12:40	
Anthracene	ug/L	<10.0	10.0	1.7	07/30/19 12:40	
Atrazine	ug/L	<20.0	20.0	2.6	07/30/19 12:40	
Benzaldehyde	ug/L	<20.0	20.0	1.3	07/30/19 12:40	
Benzo(a)anthracene	ug/L	<10.0	10.0	2.1	07/30/19 12:40	
Benzo(a)pyrene	ug/L	<10.0	10.0	2.2	07/30/19 12:40	
Benzo(b)fluoranthene	ug/L	<10.0	10.0	2.2	07/30/19 12:40	
Benzo(g,h,i)perylene	ug/L	<10.0	10.0	2.1	07/30/19 12:40	
Benzo(k)fluoranthene	ug/L	<10.0	10.0	2.0	07/30/19 12:40	
Biphenyl (Diphenyl)	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
bis(2-Chloroethoxy)methane	ug/L	<10.0	10.0	1.6	07/30/19 12:40	

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

METHOD BLANK: 2638792

Matrix: Water

Associated Lab Samples: 92438275001, 92438275002, 92438275003, 92438275004, 92438275005, 92438275006, 92438275007, 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014, 92438275015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
bis(2-Chloroethyl) ether	ug/L	<10.0	10.0	1.7	07/30/19 12:40	
bis(2-Ethylhexyl)phthalate	ug/L	<6.0	6.0	2.3	07/30/19 12:40	v1
Butylbenzylphthalate	ug/L	<10.0	10.0	2.5	07/30/19 12:40	
Caprolactam	ug/L	<10.0	10.0	0.96	07/30/19 12:40	
Carbazole	ug/L	<10.0	10.0	1.9	07/30/19 12:40	
Chrysene	ug/L	<10.0	10.0	2.1	07/30/19 12:40	
Di-n-butylphthalate	ug/L	<10.0	10.0	2.0	07/30/19 12:40	
Di-n-octylphthalate	ug/L	<10.0	10.0	1.5	07/30/19 12:40	v1
Dibenzo(a,e)pyrene	ug/L	<50.0	50.0	3.4	07/30/19 12:40	
Dibenzofuran	ug/L	<10.0	10.0	1.7	07/30/19 12:40	
Diethylphthalate	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Dimethylphthalate	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
Fluoranthene	ug/L	<10.0	10.0	2.2	07/30/19 12:40	
Fluorene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Hexachloro-1,3-butadiene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Hexachlorobenzene	ug/L	<10.0	10.0	1.7	07/30/19 12:40	
Hexachlorocyclopentadiene	ug/L	<10.0	10.0	1.3	07/30/19 12:40	
Hexachloroethane	ug/L	<10.0	10.0	1.8	07/30/19 12:40	
Indeno(1,2,3-cd)pyrene	ug/L	<10.0	10.0	2.0	07/30/19 12:40	
Isophorone	ug/L	<10.0	10.0	1.5	07/30/19 12:40	
N-Nitroso-di-n-propylamine	ug/L	<10.0	10.0	1.7	07/30/19 12:40	
N-Nitrosodiphenylamine	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
Naphthalene	ug/L	<10.0	10.0	1.4	07/30/19 12:40	
Nitrobenzene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Pentachlorophenol	ug/L	<25.0	25.0	3.5	07/30/19 12:40	
Phenanthrene	ug/L	<10.0	10.0	1.6	07/30/19 12:40	
Phenol	ug/L	<10.0	10.0	1.3	07/30/19 12:40	
Pyrene	ug/L	<10.0	10.0	2.2	07/30/19 12:40	
2,4,6-Tribromophenol (S)	%	83	27-110		07/30/19 12:40	
2-Fluorobiphenyl (S)	%	75	27-110		07/30/19 12:40	
2-Fluorophenol (S)	%	55	12-110		07/30/19 12:40	
Nitrobenzene-d5 (S)	%	81	21-110		07/30/19 12:40	
Phenol-d6 (S)	%	36	10-110		07/30/19 12:40	
Terphenyl-d14 (S)	%	85	31-107		07/30/19 12:40	

LABORATORY CONTROL SAMPLE & LCSD: 2638793

2638794

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2,2'-Oxybis(1-chloropropane)	ug/L	50	59.6	54.4	119	109	33-130	9	30	v1
2,3,4,6-Tetrachlorophenol	ug/L	50	77.7	77.0	155	154	10-200	1	30	
2,4,5-Trichlorophenol	ug/L	50	42.1	41.6	84	83	17-130	1	30	
2,4,6-Trichlorophenol	ug/L	50	47.0	45.7	94	91	10-137	3	30	

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

LABORATORY CONTROL SAMPLE & LCSD: 2638793		2638794									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
2,4-Dichlorophenol	ug/L	50	45.8	42.4	92	85	24-130	8	30		
2,4-Dimethylphenol	ug/L	50	47.4	42.7	95	85	37-130	11	30		
2,4-Dinitrophenol	ug/L	250	288	294	115	118	10-160	2	30	v1	
2,4-Dinitrotoluene	ug/L	50	44.5	44.3	89	89	61-130	0	30		
2,6-Dinitrotoluene	ug/L	50	45.5	45.7	91	91	64-130	0	30		
2-Chloronaphthalene	ug/L	50	45.4	45.7	91	91	54-130	1	30		
2-Chlorophenol	ug/L	50	47.2	42.3	94	85	24-130	11	30		
2-Methylnaphthalene	ug/L	50	39.6	38.9	79	78	47-130	2	30		
2-Methylphenol(o-Cresol)	ug/L	50	43.5	40.8	87	82	30-130	7	30		
2-Nitroaniline	ug/L	100	96.5	95.8	97	96	52-130	1	30		
2-Nitrophenol	ug/L	50	46.6	41.9	93	84	15-130	11	30		
3&4-Methylphenol(m&p Cresol)	ug/L	50	89.4	83.1	179	166	10-168	7	30	L1,v1	
3,3'-Dichlorobenzidine	ug/L	100	74.7	77.6	75	78	10-143	4	30		
3-Nitroaniline	ug/L	100	88.4	89.2	88	89	57-130	1	30		
4,6-Dinitro-2-methylphenol	ug/L	100	127	130	127	130	10-166	2	30	v1	
4-Bromophenylphenyl ether	ug/L	50	44.2	42.6	88	85	55-130	4	30		
4-Chloro-3-methylphenol	ug/L	100	96.5	94.4	96	94	37-130	2	30		
4-Chloroaniline	ug/L	100	82.0	78.9	82	79	46-130	4	30		
4-Chlorophenylphenyl ether	ug/L	50	44.5	43.9	89	88	55-130	1	30		
4-Nitroaniline	ug/L	100	89.1	89.6	89	90	58-130	1	30		
4-Nitrophenol	ug/L	250	128	129	51	52	10-130	1	30		
Acenaphthene	ug/L	50	43.3	43.5	87	87	54-130	0	30		
Acenaphthylene	ug/L	50	43.2	43.9	86	88	54-130	2	30		
Acetophenone	ug/L	50	49.8	45.2	100	90	41-130	10	30		
Anthracene	ug/L	50	47.5	47.0	95	94	60-130	1	30		
Atrazine	ug/L	50	55.1	52.6	110	105	50-158	5	30		
Benzaldehyde	ug/L	50	49.3	50.0	99	100	10-130	2	30		
Benzo(a)anthracene	ug/L	50	46.5	46.1	93	92	60-130	1	30		
Benzo(a)pyrene	ug/L	50	47.8	47.0	96	94	56-130	2	30		
Benzo(b)fluoranthene	ug/L	50	50.6	48.7	101	97	59-130	4	30		
Benzo(g,h,i)perylene	ug/L	50	48.2	46.4	96	93	58-130	4	30		
Benzo(k)fluoranthene	ug/L	50	48.0	47.1	96	94	56-130	2	30		
Biphenyl (Diphenyl)	ug/L	50	42.1	41.6	84	83	49-130	1	30		
bis(2-Chloroethoxy)methane	ug/L	50	46.7	42.2	93	84	46-130	10	30		
bis(2-Chloroethyl) ether	ug/L	50	47.7	43.3	95	87	41-130	10	30		
bis(2-Ethylhexyl)phthalate	ug/L	50	51.3	50.0	103	100	54-130	2	30	v1	
Butylbenzylphthalate	ug/L	50	48.5	47.7	97	95	52-130	2	30		
Caprolactam	ug/L	50	14.8	14.5	30	29	10-130	2	30		
Carbazole	ug/L	50	45.6	45.4	91	91	59-130	0	30		
Chrysene	ug/L	50	42.6	41.9	85	84	60-130	2	30		
Di-n-butylphthalate	ug/L	50	49.1	48.4	98	97	57-130	1	30		
Di-n-octylphthalate	ug/L	50	51.4	50.5	103	101	52-130	2	30	v1	
Dibenzo(a,e)pyrene	ug/L	50	<50.0	<50.0	53	50	49-130		30		
Dibenzofuran	ug/L	50	44.8	44.3	90	89	57-130	1	30		
Diethylphthalate	ug/L	50	45.4	45.6	91	91	53-130	1	30		
Dimethylphthalate	ug/L	50	45.3	45.1	91	90	54-130	0	30		
Fluoranthene	ug/L	50	47.6	47.4	95	95	58-130	0	30		

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Parameter	Units	2638793		2638794		% Rec	LCS	LCS	% Rec	Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCS Result	LCS % Rec								
Fluorene	ug/L	50	45.5	45.2	91	90	58-130	0	30				
Hexachloro-1,3-butadiene	ug/L	50	25.5	26.2	51	52	27-130	3	30				
Hexachlorobenzene	ug/L	50	42.6	41.7	85	83	55-130	2	30				
Hexachlorocyclopentadiene	ug/L	50	26.6	27.3	53	55	22-130	3	30				
Hexachloroethane	ug/L	50	28.3	30.0	57	60	25-130	6	30				
Indeno(1,2,3-cd)pyrene	ug/L	50	48.4	46.7	97	93	58-130	3	30				
Isophorone	ug/L	50	42.4	39.7	85	79	39-130	7	30				
N-Nitroso-di-n-propylamine	ug/L	50	49.6	45.7	99	91	47-130	8	30				
N-Nitrosodiphenylamine	ug/L	50	48.6	47.6	97	95	56-130	2	30				
Naphthalene	ug/L	50	39.5	38.3	79	77	41-130	3	30				
Nitrobenzene	ug/L	50	41.6	37.4	83	75	42-130	11	30				
Pentachlorophenol	ug/L	100	92.4	91.7	92	92	10-137	1	30				
Phenanthrene	ug/L	50	47.9	47.1	96	94	59-130	2	30				
Phenol	ug/L	50	25.2	23.5	50	47	10-130	7	30				
Pyrene	ug/L	50	45.1	43.8	90	88	59-130	3	30				
2,4,6-Tribromophenol (S)	%				87	86	27-110						
2-Fluorobiphenyl (S)	%				81	79	27-110						
2-Fluorophenol (S)	%				60	55	12-110						
Nitrobenzene-d5 (S)	%				84	77	21-110						
Phenol-d6 (S)	%				39	36	10-110						
Terphenyl-d14 (S)	%				83	82	31-107						

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 488807 Analysis Method: SM 2320B-2011  
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity  
Associated Lab Samples: 92438275003, 92438275004

METHOD BLANK: 2638497 Matrix: Water  
Associated Lab Samples: 92438275003, 92438275004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<5.0	5.0	5.0	07/26/19 21:08	

LABORATORY CONTROL SAMPLE: 2638498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	50	50.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2638499 2638500

Parameter	Units	92438275003		2638499		2638500		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	96.0	50	50	149	155	107	117	80-120	3	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2638501 2638502

Parameter	Units	92437590049		2638501		2638502		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	99.9	50	50	148	150	96	100	80-120	1	25

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 489475 Analysis Method: SM 2320B-2011  
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity  
Associated Lab Samples: 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

METHOD BLANK: 2641257 Matrix: Water  
Associated Lab Samples: 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<5.0	5.0	5.0	08/01/19 12:36	

LABORATORY CONTROL SAMPLE: 2641258

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	50	50.8	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641259 2641260

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							Result
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	79.4	50	50	50	132	129	105	100	80-120	2	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2641261 2641262

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							Result
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	47.7	50	50	50	96.5	96.0	98	97	80-120	1	25

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 489081 Analysis Method: SM 4500-Cl-E-2011  
QC Batch Method: SM 4500-Cl-E-2011 Analysis Description: 4500 Chloride  
Associated Lab Samples: 92438275003, 92438275004, 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

METHOD BLANK: 2639683 Matrix: Water  
Associated Lab Samples: 92438275003, 92438275004, 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	0.50	07/29/19 20:26	

LABORATORY CONTROL SAMPLE: 2639684

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2639685 2639686

Parameter	Units	92438964001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10300	10	10	10200	10400	-1450	1260	90-110	3	10	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2639687 2639688

Parameter	Units	92437789001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	24.7	10	10	34.1	34.8	94	101	90-110	2	10	

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: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 488589 Analysis Method: SM 5310B-2011  
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC  
Associated Lab Samples: 92438275003, 92438275004

METHOD BLANK: 2637483 Matrix: Water  
Associated Lab Samples: 92438275003, 92438275004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<1.0	1.0	0.50	07/26/19 01:56	

LABORATORY CONTROL SAMPLE: 2637484

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2637485 2637486

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92437365097	Result	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Total Organic Carbon	mg/L	0.92J		25	25	25.7	25.7	99	99	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2637487 2637488

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		92437365107	Result	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Total Organic Carbon	mg/L	0.51J		25	25	25.1	25.3	98	99	90-110	1	10	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

QC Batch: 489913 Analysis Method: SM 5310B-2011  
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC  
Associated Lab Samples: 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

METHOD BLANK: 2643419 Matrix: Water  
Associated Lab Samples: 92438275008, 92438275009, 92438275010, 92438275011, 92438275012, 92438275013, 92438275014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<1.0	1.0	0.50	08/02/19 21:29	

LABORATORY CONTROL SAMPLE: 2643420

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2643421 2643422

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							
Total Organic Carbon	mg/L	92437365162 ND	25	25	25	24.6	24.9	97	98	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2643423 2643424

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							
Total Organic Carbon	mg/L	92438275013 2.3	25	25	25	26.5	26.5	96	97	90-110	0	10

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Marsh Pamplico 500-15588  
Pace Project No.: 92438275

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### 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.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-C Pace Analytical Services - Charlotte

### ANALYTE QUALIFIERS

- L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
- N The reported TIC has an 85% or higher match on a mass spectral library search.
- 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: Marsh Pamplico 500-15588

Pace Project No.: 92438275

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92438275001	MW-15	EPA 3510C	488879	EPA 8270D	489189
92438275002	MW-29	EPA 3510C	488879	EPA 8270D	489189
92438275003	MW-10	EPA 3510C	488879	EPA 8270D	489189
92438275004	MW-14A	EPA 3510C	488879	EPA 8270D	489189
92438275005	MW-13A	EPA 3510C	488879	EPA 8270D	489189
92438275006	MW-20	EPA 3510C	488879	EPA 8270D	489189
92438275007	MW-21	EPA 3510C	488879	EPA 8270D	489189
92438275008	MW-22	EPA 3510C	488879	EPA 8270D	489189
92438275009	MW-24	EPA 3510C	488879	EPA 8270D	489189
92438275010	MW-25	EPA 3510C	488879	EPA 8270D	489189
92438275011	MW-26	EPA 3510C	488879	EPA 8270D	489189
92438275012	MW-27	EPA 3510C	488879	EPA 8270D	489189
92438275013	MW-28	EPA 3510C	488879	EPA 8270D	489189
92438275014	MW-30	EPA 3510C	488879	EPA 8270D	489189
92438275015	MW-23	EPA 3510C	488879	EPA 8270D	489189
92438275003	MW-10	SM 2320B-2011	488807		
92438275004	MW-14A	SM 2320B-2011	488807		
92438275008	MW-22	SM 2320B-2011	489475		
92438275009	MW-24	SM 2320B-2011	489475		
92438275010	MW-25	SM 2320B-2011	489475		
92438275011	MW-26	SM 2320B-2011	489475		
92438275012	MW-27	SM 2320B-2011	489475		
92438275013	MW-28	SM 2320B-2011	489475		
92438275014	MW-30	SM 2320B-2011	489475		
92438275003	MW-10	SM 4500-CI-E-2011	489081		
92438275004	MW-14A	SM 4500-CI-E-2011	489081		
92438275008	MW-22	SM 4500-CI-E-2011	489081		
92438275009	MW-24	SM 4500-CI-E-2011	489081		
92438275010	MW-25	SM 4500-CI-E-2011	489081		
92438275011	MW-26	SM 4500-CI-E-2011	489081		
92438275012	MW-27	SM 4500-CI-E-2011	489081		
92438275013	MW-28	SM 4500-CI-E-2011	489081		
92438275014	MW-30	SM 4500-CI-E-2011	489081		
92438275003	MW-10	SM 5310B-2011	488589		
92438275004	MW-14A	SM 5310B-2011	488589		
92438275008	MW-22	SM 5310B-2011	489913		
92438275009	MW-24	SM 5310B-2011	489913		
92438275010	MW-25	SM 5310B-2011	489913		
92438275011	MW-26	SM 5310B-2011	489913		
92438275012	MW-27	SM 5310B-2011	489913		
92438275013	MW-28	SM 5310B-2011	489913		
92438275014	MW-30	SM 5310B-2011	489913		

### REPORT OF LABORATORY ANALYSIS

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**Laboratory receiving samples:**

Asheville  Eden  Greenwood  Huntersville  Raleigh  Mechanicsville

Sample Condition Upon Receipt

Client Name: **SJME**

Project #:

**WO# : 92438275**



Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: \_\_\_\_\_

Custody Seal Present?  Yes  No Seals Intact?  Yes  No

Date/Initials Person Examining Contents: **EH 7-24-19**

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer:  IR Gun ID: **92T048** Type of Ice:  Wet  Blue  None

Biological Tissue Frozen?  Yes  No  N/A

Cooler Temp (°C): **0.1** Correction Factor: Add/Subtract (°C) **0.0**

Cooler Temp Corrected (°C): \_\_\_\_\_

Temp should be above freezing to 6°C  
 Samples out of temp criteria. Samples on ice, cooling process has begun

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: <b>WT EH 7-24-19</b>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input checked="" 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**

We received MW-29 instead of MW-16. The time and date for MW-29 7-22-19 16:30. Field Data Required?  Yes  No

**CLIENT NOTIFICATION/RESOLUTION**

Lot ID of split containers: \_\_\_\_\_  
 accidentally sent MW-29 instead of MW-16. He will submit MW-16 later in the week. (AMB)

Person contacted: **Gary Semcox** Date/Time: **7-24-19**

Project Manager SCURF Review: **AMB** Date: **7-24-19**

Project Manager SRF Review: \_\_\_\_\_ Date: \_\_\_\_\_

Following further conversation, MW-16 only needs Herbicides and not 8270.





Document Name:  
Sample Condition Upon Receipt(SCUR)

Document No.:  
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018  
Page 1 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 bottle

Project #

WO#: 92438275

PM: AMB

Due Date: 07/31/19

CLIENT: 92-S&ME Gbor

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)	
1										2																		
2										2																		
3										2																		
4										2																		
5																												
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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.





Laboratory receiving samples:

Asheville  Eden  Greenwood  Huntersville  Raleigh  Mechanicsville

Sample Condition Upon Receipt

Client Name: S&ME Greensboro

Project #:

**WO# : 92438275**

PM: AMB Due Date: 07/31/19  
 CLIENT: 92-S&ME Gbor

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: \_\_\_\_\_

Custody Seal Present?  Yes  No Seals Intact?  Yes  No

Date/Initials Person Examining Contents: DB 7/26/19

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Biological Tissue Frozen?  
 Yes  No  N/A

Thermometer: 92T048 Type of Ice:  Wet  Blue  None  
 IR Gun ID: \_\_\_\_\_

Cooler Temp (°C): 0.3 Correction Factor: Add/Subtract (°C) 0.0

Temp should be above freezing to 6°C  
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 0.3

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 type="checkbox"/> Yes <input checked="" 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>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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

Headspace in vials MW-28 1/3, MW-24 1/3, MW-25 2/3, MW-26 3/3, MW-28 3/3

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager SCURF Review: AMB

Date: 7-26-19

Project Manager SRF Review: AMB

Date: 7-26-19

**\*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 bottle**

Project #

**WO# : 92438275**

PM: AMB

Due Date: 07/31/19

CLIENT: 92-S&ME Gbor

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)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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4	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
5	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
6	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
7	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
8	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
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10	/	1	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	3	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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).







November 07, 2019

Mr. Ed Henriques  
S&ME, Inc.  
8646 West Market Street  
Suite 105  
Greensboro, NC 27409

RE: Project: Marsh Lumber 1564-98-146C  
Pace Project No.: 92451812

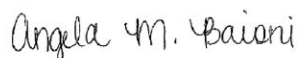
Dear Mr. Henriques:

Enclosed are the analytical results for sample(s) received by the laboratory on October 31, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angela Baioni  
angela.baioni@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## SAMPLE SUMMARY

Project: Marsh Lumber 1564-98-146C  
Pace Project No.: 92451812

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92451812001	MW-9	Water	10/30/19 12:25	10/31/19 10:00
92451812002	MW-10	Water	10/29/19 13:05	10/31/19 10:00
92451812003	MW-11	Water	10/30/19 10:00	10/31/19 10:00
92451812004	MW-15	Water	10/29/19 15:05	10/31/19 10:00
92451812005	Duplicate	Water	10/29/19 09:00	10/31/19 10:00

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

## PROJECT NARRATIVE

Project:  
Pace Project No.:

---

**Method:**  
**Description:**  
**Client:**  
**Date:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-172665-1  
Client Project/Site: Marsh Pamplico 1584-98-146C

For:

Pace Analytical Services, LLC  
9800 Kinsey Avenue, Suite 100  
Huntersville, North Carolina 28078

Attn: Angela Baioni



Authorized for release by:  
11/6/2019 3:14:40 PM

Therese Hargraves, Project Manager I  
(708)793-3461  
[therese.hargraves@testamericainc.com](mailto:therese.hargraves@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Case Narrative

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

---

## Job ID: 500-172665-1

---

Laboratory: Eurofins TestAmerica, Chicago

### Narrative

---

**Job Narrative**  
**500-172665-1**

### Comments

No additional comments.

### Receipt

The samples were received on 10/31/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9° C.

### GC Semi VOA

Method 8151A: The following sample was reported from the second column due to Pentachlorophenol recovery on primary column "cigar topping" and giving a result lower than the result found on column two. Column two has the better chromatography compared to column one. MW-10 (500-172665-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



# Detection Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

## Client Sample ID: MW-9

Lab Sample ID: 500-172665-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	1.8		0.54	0.096	ug/L	1		8151A	Total/NA

## Client Sample ID: MW-10

Lab Sample ID: 500-172665-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	35		5.2	0.94	ug/L	10		8151A	Total/NA

## Client Sample ID: MW-11

Lab Sample ID: 500-172665-3

No Detections.

## Client Sample ID: MW-15

Lab Sample ID: 500-172665-4

No Detections.

## Client Sample ID: Duplicate

Lab Sample ID: 500-172665-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

# Method Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Sample Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-172665-1	MW-9	Water	10/30/19 12:25	10/31/19 10:00	
500-172665-2	MW-10	Water	10/29/19 13:05	10/31/19 10:00	
500-172665-3	MW-11	Water	10/30/19 10:00	10/31/19 10:00	
500-172665-4	MW-15	Water	10/29/19 15:05	10/31/19 10:00	
500-172665-5	Duplicate	Water	10/29/19 09:00	10/31/19 10:00	

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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Client Sample ID: MW-9**

**Lab Sample ID: 500-172665-1**

**Date Collected: 10/30/19 12:25**

**Matrix: Water**

**Date Received: 10/31/19 10:00**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1.8		0.54	0.096	ug/L		11/04/19 11:09	11/05/19 08:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	102		25 - 130				11/04/19 11:09	11/05/19 08:11	1

- 1
- 2
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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Client Sample ID: MW-10**  
**Date Collected: 10/29/19 13:05**  
**Date Received: 10/31/19 10:00**

**Lab Sample ID: 500-172665-2**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	35		5.2	0.94	ug/L		11/04/19 11:09	11/05/19 11:05	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	111		25 - 130				11/04/19 11:09	11/05/19 11:05	10

- 1
- 2
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# Client Sample Results

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Client Sample ID: MW-11**

**Date Collected: 10/30/19 10:00**

**Date Received: 10/31/19 10:00**

**Lab Sample ID: 500-172665-3**

**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.54		0.54	0.098	ug/L		11/04/19 11:09	11/05/19 08:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	97		25 - 130	11/04/19 11:09	11/05/19 08:50	1

# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Client Sample ID: MW-15**  
**Date Collected: 10/29/19 15:05**  
**Date Received: 10/31/19 10:00**

**Lab Sample ID: 500-172665-4**  
**Matrix: Water**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.53		0.53	0.095	ug/L		11/04/19 11:09	11/05/19 09:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	116		25 - 130				11/04/19 11:09	11/05/19 09:09	1

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- 2
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# Client Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 500-172665-5**

**Date Collected: 10/29/19 09:00**

**Matrix: Water**

**Date Received: 10/31/19 10:00**

**Method: 8151A - Herbicides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.49		0.49	0.088	ug/L		11/04/19 11:09	11/05/19 09:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	123		25 - 130	11/04/19 11:09	11/05/19 09:28	1

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## Definitions/Glossary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# QC Association Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

## GC Semi VOA

### Prep Batch: 513424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-172665-1	MW-9	Total/NA	Water	8151A	
500-172665-2	MW-10	Total/NA	Water	8151A	
500-172665-3	MW-11	Total/NA	Water	8151A	
500-172665-4	MW-15	Total/NA	Water	8151A	
500-172665-5	Duplicate	Total/NA	Water	8151A	
MB 500-513424/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-513424/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-513424/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

### Analysis Batch: 513454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-172665-1	MW-9	Total/NA	Water	8151A	513424
500-172665-2	MW-10	Total/NA	Water	8151A	513424
500-172665-3	MW-11	Total/NA	Water	8151A	513424
500-172665-4	MW-15	Total/NA	Water	8151A	513424
500-172665-5	Duplicate	Total/NA	Water	8151A	513424
MB 500-513424/1-A	Method Blank	Total/NA	Water	8151A	513424
LCS 500-513424/2-A	Lab Control Sample	Total/NA	Water	8151A	513424
LCSD 500-513424/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	513424

# Surrogate Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

**Method: 8151A - Herbicides (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-172665-1	MW-9	102
500-172665-2	MW-10	111
500-172665-3	MW-11	97
500-172665-4	MW-15	116
500-172665-5	Duplicate	123
LCS 500-513424/2-A	Lab Control Sample	96
LCSD 500-513424/3-A	Lab Control Sample Dup	92
MB 500-513424/1-A	Method Blank	83

### Surrogate Legend

DCPAA = DCAA

# QC Sample Results

Client: Pace Analytical Services, LLC  
 Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 500-513424/1-A**  
**Matrix: Water**  
**Analysis Batch: 513454**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 513424**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.50		0.50	0.090	ug/L		11/04/19 11:09	11/05/19 04:39	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130				11/04/19 11:09	11/05/19 04:39	1

**Lab Sample ID: LCS 500-513424/2-A**  
**Matrix: Water**  
**Analysis Batch: 513454**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 513424**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Pentachlorophenol	2.53	1.66		ug/L		66	40 - 122		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
DCAA	96		25 - 130						

**Lab Sample ID: LCSD 500-513424/3-A**  
**Matrix: Water**  
**Analysis Batch: 513454**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 513424**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	2.53	1.64		ug/L		65	40 - 122	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
DCAA	92		25 - 130						

# Lab Chronicle

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

## Client Sample ID: MW-9

Date Collected: 10/30/19 12:25

Date Received: 10/31/19 10:00

Lab Sample ID: 500-172665-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			513424	11/04/19 11:09	DAK	TAL CHI
Total/NA	Analysis	8151A		1	513454	11/05/19 08:11	JBJ	TAL CHI

## Client Sample ID: MW-10

Date Collected: 10/29/19 13:05

Date Received: 10/31/19 10:00

Lab Sample ID: 500-172665-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			513424	11/04/19 11:09	DAK	TAL CHI
Total/NA	Analysis	8151A		10	513454	11/05/19 11:05	JBJ	TAL CHI

## Client Sample ID: MW-11

Date Collected: 10/30/19 10:00

Date Received: 10/31/19 10:00

Lab Sample ID: 500-172665-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			513424	11/04/19 11:09	DAK	TAL CHI
Total/NA	Analysis	8151A		1	513454	11/05/19 08:50	JBJ	TAL CHI

## Client Sample ID: MW-15

Date Collected: 10/29/19 15:05

Date Received: 10/31/19 10:00

Lab Sample ID: 500-172665-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			513424	11/04/19 11:09	DAK	TAL CHI
Total/NA	Analysis	8151A		1	513454	11/05/19 09:09	JBJ	TAL CHI

## Client Sample ID: Duplicate

Date Collected: 10/29/19 09:00

Date Received: 10/31/19 10:00

Lab Sample ID: 500-172665-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			513424	11/04/19 11:09	DAK	TAL CHI
Total/NA	Analysis	8151A		1	513454	11/05/19 09:28	JBJ	TAL CHI

### Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Accreditation/Certification Summary

Client: Pace Analytical Services, LLC  
Project/Site: Marsh Pamplico 1584-98-146C

Job ID: 500-172665-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
South Carolina	State Program	77001	04-30-20

- 1
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500-172665 Waybill

THU - 31 OCT AA  
STANDARD OVERNIGHT

FedEx  
TRK# 8142 2549 8718

60484  
IL-US  
ORD

GE JOTA



FedEx Express Package US Airbill  
8142 2549 8718

1 From  
Date 10/30/18  
Sender's Name GARY SIMMONS Phone 336 339-2425  
Company S.M.E. INC.  
Address 6646 W. MARKET ST.  
City GREENSBORO State NC ZIP 27409

2 Your Internal Billing Reference

3 To Recipient's Name  
Company  
Address  
City State ZIP

4  
FID 407723 300CT19 FLQA 56AC3/2A3C/0542  
FedEx First Overnight  
FedEx Priority Overnight  
FedEx Standard Overnight  
FedEx 2Day A.M.  
FedEx 2Day  
FedEx Express Saver

5 Packaging  
FedEx Envelope\*  
FedEx Pak\*  
FedEx Box  
FedEx Tube  
Other

6 Special Handling and Delivery Signature Options  
Saturday Delivery  
No Signature Required  
Direct Signature  
Indirect Signature  
Does this shipment contain dangerous goods?  
One box must be checked.  
Yes  
No

7 Payment Bill to:  
Sender  
Recipient  
Third Party  
Credit Card  
Cash/Check  
Total Packages  
Total Weight 58 lbs.  
Credit Card Acct. No. 644

Align Open End of FedEx Pouch Here

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8142 2549 8718

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Page 23 of 24  
11/6/2019

# Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 500-172665-1

**Login Number: 172665**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: James, Jeff A**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

November 07, 2019

Mr. Ed Henriques  
S&ME, Inc.  
8646 West Market Street  
Suite 105  
Greensboro, NC 27409

RE: Project: Marsh Lumber 1584-98-146C  
Pace Project No.: 92451816

Dear Mr. Henriques:

Enclosed are the analytical results for sample(s) received by the laboratory on October 31, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Angela M. Baioni*

Angela Baioni  
angela.baioni@pacelabs.com  
(704)875-9092  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

---

### Charlotte Certification IDs

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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92451816001	MW-9	Water	10/30/19 12:25	10/31/19 11:26
92451816002	MW-10	Water	10/30/19 13:05	10/31/19 11:26
92451816003	MW-11	Water	10/30/19 10:00	10/31/19 11:26
92451816004	MW-15	Water	10/30/19 15:05	10/31/19 11:26
92451816005	DUPLICATE	Water	10/30/19 09:00	10/31/19 11:26

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92451816001	MW-9	EPA 8270D	BPJ	71	PASI-C
92451816002	MW-10	EPA 8270D	BPJ	71	PASI-C
92451816003	MW-11	EPA 8270D	BPJ	72	PASI-C
92451816004	MW-15	EPA 8270D	BPJ	71	PASI-C
92451816005	DUPLICATE	EPA 8270D	BPJ	71	PASI-C

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## PROJECT NARRATIVE

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

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**Method:** EPA 8270D

**Description:** 8270 MSSV Semivolatile Organic

**Client:** S&ME - Greensboro

**Date:** November 07, 2019

**General Information:**

5 samples were analyzed for EPA 8270D. 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 3510C 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.

QC Batch: 507601

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

- LCS (Lab ID: 2725024)
  - Dibenzo(a,e)pyrene

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 507601

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92451816001

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

- MS (Lab ID: 2725025)
  - Dibenzo(a,e)pyrene
- MSD (Lab ID: 2725026)
  - Dibenzo(a,e)pyrene

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## PROJECT NARRATIVE

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

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**Method:** EPA 8270D

**Description:** 8270 MSSV Semivolatile Organic

**Client:** S&ME - Greensboro

**Date:** November 07, 2019

QC Batch: 507601

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92451816001

R1: RPD value was outside control limits.

- MSD (Lab ID: 2725026)
  - 2,2'-Oxybis(1-chloropropane)
  - 2-Chlorophenol
  - 2-Methylphenol(o-Cresol)
  - 2-Nitrophenol
  - Hexachloro-1,3-butadiene
  - Hexachlorocyclopentadiene
  - Hexachloroethane
  - Phenol
  - bis(2-Chloroethoxy)methane
  - bis(2-Chloroethyl) ether

**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: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-9      Lab ID: 92451816001      Collected: 10/30/19 12:25      Received: 10/31/19 11:26      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Acenaphthene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	83-32-9	
Acenaphthylene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	208-96-8	
Acetophenone	<9.8	ug/L	9.8	1.9	1	11/05/19 09:01	11/06/19 10:24	98-86-2	
Anthracene	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 10:24	120-12-7	
Atrazine	<19.6	ug/L	19.6	2.6	1	11/05/19 09:01	11/06/19 10:24	1912-24-9	
Benzaldehyde	<19.6	ug/L	19.6	1.2	1	11/05/19 09:01	11/06/19 10:24	100-52-7	
Benzo(a)anthracene	<9.8	ug/L	9.8	2.1	1	11/05/19 09:01	11/06/19 10:24	56-55-3	
Benzo(a)pyrene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 10:24	50-32-8	
Benzo(b)fluoranthene	<9.8	ug/L	9.8	2.1	1	11/05/19 09:01	11/06/19 10:24	205-99-2	
Benzo(g,h,i)perylene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 10:24	191-24-2	
Benzo(k)fluoranthene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 10:24	207-08-9	
Biphenyl (Diphenyl)	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	92-52-4	
4-Bromophenylphenyl ether	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	101-55-3	
Butylbenzylphthalate	<9.8	ug/L	9.8	2.4	1	11/05/19 09:01	11/06/19 10:24	85-68-7	
Caprolactam	<9.8	ug/L	9.8	0.94	1	11/05/19 09:01	11/06/19 10:24	105-60-2	
Carbazole	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 10:24	86-74-8	
4-Chloro-3-methylphenol	<19.6	ug/L	19.6	2.8	1	11/05/19 09:01	11/06/19 10:24	59-50-7	
4-Chloroaniline	<19.6	ug/L	19.6	2.8	1	11/05/19 09:01	11/06/19 10:24	106-47-8	
bis(2-Chloroethoxy)methane	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	111-91-1	R1
bis(2-Chloroethyl) ether	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 10:24	111-44-4	R1
2-Chloronaphthalene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	91-58-7	
2-Chlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	95-57-8	R1
4-Chlorophenylphenyl ether	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	7005-72-3	
Chrysene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 10:24	218-01-9	
Dibenzo(a,e)pyrene	<49.0	ug/L	49.0	3.3	1	11/05/19 09:01	11/06/19 10:24	192-65-4	L2,M0, v3
Dibenzofuran	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	132-64-9	
3,3'-Dichlorobenzidine	<19.6	ug/L	19.6	3.8	1	11/05/19 09:01	11/06/19 10:24	91-94-1	
2,4-Dichlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	120-83-2	
Diethylphthalate	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	84-66-2	
2,4-Dimethylphenol	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	105-67-9	
Dimethylphthalate	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	131-11-3	
Di-n-butylphthalate	<9.8	ug/L	9.8	1.9	1	11/05/19 09:01	11/06/19 10:24	84-74-2	
4,6-Dinitro-2-methylphenol	<19.6	ug/L	19.6	2.2	1	11/05/19 09:01	11/06/19 10:24	534-52-1	
2,4-Dinitrophenol	<49.0	ug/L	49.0	5.0	1	11/05/19 09:01	11/06/19 10:24	51-28-5	
2,4-Dinitrotoluene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	121-14-2	
2,6-Dinitrotoluene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	606-20-2	
Di-n-octylphthalate	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	117-84-0	
bis(2-Ethylhexyl)phthalate	<5.9	ug/L	5.9	2.3	1	11/05/19 09:01	11/06/19 10:24	117-81-7	
Fluoranthene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 10:24	206-44-0	
Fluorene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	86-73-7	
Hexachloro-1,3-butadiene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	87-68-3	R1
Hexachlorobenzene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	118-74-1	
Hexachlorocyclopentadiene	<9.8	ug/L	9.8	1.3	1	11/05/19 09:01	11/06/19 10:24	77-47-4	R1
Hexachloroethane	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 10:24	67-72-1	R1
Indeno(1,2,3-cd)pyrene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 10:24	193-39-5	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-9      Lab ID: 92451816001      Collected: 10/30/19 12:25      Received: 10/31/19 11:26      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Isophorone	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	78-59-1	
2-Methylnaphthalene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	91-57-6	
2-Methylphenol(o-Cresol)	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	95-48-7	R1
3&4-Methylphenol(m&p Cresol)	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	15831-10-4	
Naphthalene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	91-20-3	
2-Nitroaniline	<49.0	ug/L	49.0	2.2	1	11/05/19 09:01	11/06/19 10:24	88-74-4	v1
3-Nitroaniline	<49.0	ug/L	49.0	2.6	1	11/05/19 09:01	11/06/19 10:24	99-09-2	
4-Nitroaniline	<19.6	ug/L	19.6	3.3	1	11/05/19 09:01	11/06/19 10:24	100-01-6	
Nitrobenzene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	98-95-3	
2-Nitrophenol	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	88-75-5	R1
4-Nitrophenol	<49.0	ug/L	49.0	4.2	1	11/05/19 09:01	11/06/19 10:24	100-02-7	
N-Nitroso-di-n-propylamine	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 10:24	621-64-7	
N-Nitrosodiphenylamine	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	86-30-6	
2,2'-Oxybis(1-chloropropane)	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 10:24	108-60-1	R1
Pentachlorophenol	<24.5	ug/L	24.5	3.5	1	11/05/19 09:01	11/06/19 10:24	87-86-5	
Phenanthrene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 10:24	85-01-8	
Phenol	<9.8	ug/L	9.8	1.3	1	11/05/19 09:01	11/06/19 10:24	108-95-2	R1
Pyrene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 10:24	129-00-0	
2,4,5-Trichlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 10:24	95-95-4	
2,4,6-Trichlorophenol	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 10:24	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	70	%	21-110		1	11/05/19 09:01	11/06/19 10:24	4165-60-0	
2-Fluorobiphenyl (S)	63	%	27-110		1	11/05/19 09:01	11/06/19 10:24	321-60-8	
Terphenyl-d14 (S)	58	%	31-107		1	11/05/19 09:01	11/06/19 10:24	1718-51-0	
Phenol-d6 (S)	30	%	10-110		1	11/05/19 09:01	11/06/19 10:24	13127-88-3	
2-Fluorophenol (S)	41	%	12-110		1	11/05/19 09:01	11/06/19 10:24	367-12-4	
2,4,6-Tribromophenol (S)	63	%	27-110		1	11/05/19 09:01	11/06/19 10:24	118-79-6	

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: **MW-10** Lab ID: **92451816002** Collected: 10/30/19 13:05 Received: 10/31/19 11:26 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>			Analytical Method: EPA 8270D Preparation Method: EPA 3510C						
Acenaphthene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	83-32-9	
Acenaphthylene	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	208-96-8	
Acetophenone	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 11:56	98-86-2	
Anthracene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	120-12-7	
Atrazine	<19.2	ug/L	19.2	2.5	1	11/05/19 09:01	11/06/19 11:56	1912-24-9	
Benzaldehyde	<19.2	ug/L	19.2	1.2	1	11/05/19 09:01	11/06/19 11:56	100-52-7	
Benzo(a)anthracene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 11:56	56-55-3	
Benzo(a)pyrene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 11:56	50-32-8	
Benzo(b)fluoranthene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 11:56	205-99-2	
Benzo(g,h,i)perylene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 11:56	191-24-2	
Benzo(k)fluoranthene	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 11:56	207-08-9	
Biphenyl (Diphenyl)	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 11:56	92-52-4	
4-Bromophenylphenyl ether	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	101-55-3	
Butylbenzylphthalate	<9.6	ug/L	9.6	2.4	1	11/05/19 09:01	11/06/19 11:56	85-68-7	
Caprolactam	<9.6	ug/L	9.6	0.92	1	11/05/19 09:01	11/06/19 11:56	105-60-2	
Carbazole	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 11:56	86-74-8	
4-Chloro-3-methylphenol	<19.2	ug/L	19.2	2.7	1	11/05/19 09:01	11/06/19 11:56	59-50-7	
4-Chloroaniline	<19.2	ug/L	19.2	2.7	1	11/05/19 09:01	11/06/19 11:56	106-47-8	
bis(2-Chloroethoxy)methane	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	111-91-1	
bis(2-Chloroethyl) ether	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	111-44-4	
2-Chloronaphthalene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	91-58-7	
2-Chlorophenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	95-57-8	
4-Chlorophenylphenyl ether	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	7005-72-3	
Chrysene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 11:56	218-01-9	
Dibenzo(a,e)pyrene	<48.1	ug/L	48.1	3.3	1	11/05/19 09:01	11/06/19 11:56	192-65-4	L2,v3
Dibenzofuran	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	132-64-9	
3,3'-Dichlorobenzidine	<19.2	ug/L	19.2	3.7	1	11/05/19 09:01	11/06/19 11:56	91-94-1	
2,4-Dichlorophenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	120-83-2	
Diethylphthalate	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	84-66-2	
2,4-Dimethylphenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	105-67-9	
Dimethylphthalate	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	131-11-3	
Di-n-butylphthalate	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 11:56	84-74-2	
4,6-Dinitro-2-methylphenol	<19.2	ug/L	19.2	2.2	1	11/05/19 09:01	11/06/19 11:56	534-52-1	
2,4-Dinitrophenol	<48.1	ug/L	48.1	4.9	1	11/05/19 09:01	11/06/19 11:56	51-28-5	
2,4-Dinitrotoluene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	121-14-2	
2,6-Dinitrotoluene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 11:56	606-20-2	
Di-n-octylphthalate	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	117-84-0	
bis(2-Ethylhexyl)phthalate	<5.8	ug/L	5.8	2.2	1	11/05/19 09:01	11/06/19 11:56	117-81-7	
Fluoranthene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 11:56	206-44-0	
Fluorene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	86-73-7	
Hexachloro-1,3-butadiene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	87-68-3	
Hexachlorobenzene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	118-74-1	
Hexachlorocyclopentadiene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 11:56	77-47-4	
Hexachloroethane	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 11:56	67-72-1	
Indeno(1,2,3-cd)pyrene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 11:56	193-39-5	
Isophorone	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

**Sample: MW-10**      **Lab ID: 92451816002**      Collected: 10/30/19 13:05      Received: 10/31/19 11:26      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b>									
Analytical Method: EPA 8270D    Preparation Method: EPA 3510C									
2-Methylnaphthalene	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	91-57-6	
2-Methylphenol(o-Cresol)	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	95-48-7	
3&4-Methylphenol(m&p Cresol)	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	15831-10-4	
Naphthalene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 11:56	91-20-3	
2-Nitroaniline	<48.1	ug/L	48.1	2.2	1	11/05/19 09:01	11/06/19 11:56	88-74-4	v1
3-Nitroaniline	<48.1	ug/L	48.1	2.6	1	11/05/19 09:01	11/06/19 11:56	99-09-2	
4-Nitroaniline	<19.2	ug/L	19.2	3.2	1	11/05/19 09:01	11/06/19 11:56	100-01-6	
Nitrobenzene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	98-95-3	
2-Nitrophenol	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	88-75-5	
4-Nitrophenol	<48.1	ug/L	48.1	4.1	1	11/05/19 09:01	11/06/19 11:56	100-02-7	
N-Nitroso-di-n-propylamine	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 11:56	621-64-7	
N-Nitrosodiphenylamine	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	86-30-6	
2,2'-Oxybis(1-chloropropane)	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 11:56	108-60-1	
Pentachlorophenol	<24.0	ug/L	24.0	3.4	1	11/05/19 09:01	11/06/19 11:56	87-86-5	
Phenanthrene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 11:56	85-01-8	
Phenol	<9.6	ug/L	9.6	1.2	1	11/05/19 09:01	11/06/19 11:56	108-95-2	
Pyrene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 11:56	129-00-0	
2,4,5-Trichlorophenol	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	95-95-4	
2,4,6-Trichlorophenol	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 11:56	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	41	%	21-110		1	11/05/19 09:01	11/06/19 11:56	4165-60-0	
2-Fluorobiphenyl (S)	37	%	27-110		1	11/05/19 09:01	11/06/19 11:56	321-60-8	
Terphenyl-d14 (S)	36	%	31-107		1	11/05/19 09:01	11/06/19 11:56	1718-51-0	
Phenol-d6 (S)	18	%	10-110		1	11/05/19 09:01	11/06/19 11:56	13127-88-3	
2-Fluorophenol (S)	25	%	12-110		1	11/05/19 09:01	11/06/19 11:56	367-12-4	
2,4,6-Tribromophenol (S)	36	%	27-110		1	11/05/19 09:01	11/06/19 11:56	118-79-6	

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-11      Lab ID: 92451816003      Collected: 10/30/19 10:00      Received: 10/31/19 11:26      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Acenaphthene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	83-32-9	
Acenaphthylene	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	208-96-8	
Acetophenone	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 12:26	98-86-2	
Anthracene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	120-12-7	
Atrazine	<19.2	ug/L	19.2	2.5	1	11/05/19 09:01	11/06/19 12:26	1912-24-9	
Benzaldehyde	<19.2	ug/L	19.2	1.2	1	11/05/19 09:01	11/06/19 12:26	100-52-7	
Benzo(a)anthracene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 12:26	56-55-3	
Benzo(a)pyrene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 12:26	50-32-8	
Benzo(b)fluoranthene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 12:26	205-99-2	
Benzo(g,h,i)perylene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 12:26	191-24-2	
Benzo(k)fluoranthene	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 12:26	207-08-9	
Biphenyl (Diphenyl)	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 12:26	92-52-4	
4-Bromophenylphenyl ether	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	101-55-3	
Butylbenzylphthalate	<9.6	ug/L	9.6	2.4	1	11/05/19 09:01	11/06/19 12:26	85-68-7	
Caprolactam	<9.6	ug/L	9.6	0.92	1	11/05/19 09:01	11/06/19 12:26	105-60-2	
Carbazole	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 12:26	86-74-8	
4-Chloro-3-methylphenol	<19.2	ug/L	19.2	2.7	1	11/05/19 09:01	11/06/19 12:26	59-50-7	
4-Chloroaniline	<19.2	ug/L	19.2	2.7	1	11/05/19 09:01	11/06/19 12:26	106-47-8	
bis(2-Chloroethoxy)methane	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	111-91-1	
bis(2-Chloroethyl) ether	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	111-44-4	
2-Chloronaphthalene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	91-58-7	
2-Chlorophenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	95-57-8	
4-Chlorophenylphenyl ether	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	7005-72-3	
Chrysene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 12:26	218-01-9	
Dibenzo(a,e)pyrene	<48.1	ug/L	48.1	3.3	1	11/05/19 09:01	11/06/19 12:26	192-65-4	L2,v3
Dibenzofuran	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	132-64-9	
3,3'-Dichlorobenzidine	<19.2	ug/L	19.2	3.7	1	11/05/19 09:01	11/06/19 12:26	91-94-1	
2,4-Dichlorophenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	120-83-2	
Diethylphthalate	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	84-66-2	
2,4-Dimethylphenol	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	105-67-9	
Dimethylphthalate	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	131-11-3	
Di-n-butylphthalate	<9.6	ug/L	9.6	1.9	1	11/05/19 09:01	11/06/19 12:26	84-74-2	
4,6-Dinitro-2-methylphenol	<19.2	ug/L	19.2	2.2	1	11/05/19 09:01	11/06/19 12:26	534-52-1	
2,4-Dinitrophenol	<48.1	ug/L	48.1	4.9	1	11/05/19 09:01	11/06/19 12:26	51-28-5	
2,4-Dinitrotoluene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	121-14-2	
2,6-Dinitrotoluene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 12:26	606-20-2	
Di-n-octylphthalate	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	117-84-0	
bis(2-Ethylhexyl)phthalate	<5.8	ug/L	5.8	2.2	1	11/05/19 09:01	11/06/19 12:26	117-81-7	
Fluoranthene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 12:26	206-44-0	
Fluorene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	86-73-7	
Hexachloro-1,3-butadiene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	87-68-3	
Hexachlorobenzene	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	118-74-1	
Hexachlorocyclopentadiene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 12:26	77-47-4	
Hexachloroethane	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 12:26	67-72-1	
Indeno(1,2,3-cd)pyrene	<9.6	ug/L	9.6	2.0	1	11/05/19 09:01	11/06/19 12:26	193-39-5	
Isophorone	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	78-59-1	

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-11									
Lab ID: 92451816003 Collected: 10/30/19 10:00 Received: 10/31/19 11:26 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	91-57-6	
2-Methylphenol(o-Cresol)	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	95-48-7	
3&4-Methylphenol(m&p Cresol)	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	15831-10-4	
Naphthalene	<9.6	ug/L	9.6	1.3	1	11/05/19 09:01	11/06/19 12:26	91-20-3	
2-Nitroaniline	<48.1	ug/L	48.1	2.2	1	11/05/19 09:01	11/06/19 12:26	88-74-4	v1
3-Nitroaniline	<48.1	ug/L	48.1	2.6	1	11/05/19 09:01	11/06/19 12:26	99-09-2	
4-Nitroaniline	<19.2	ug/L	19.2	3.2	1	11/05/19 09:01	11/06/19 12:26	100-01-6	
Nitrobenzene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	98-95-3	
2-Nitrophenol	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	88-75-5	
4-Nitrophenol	<48.1	ug/L	48.1	4.1	1	11/05/19 09:01	11/06/19 12:26	100-02-7	
N-Nitroso-di-n-propylamine	<9.6	ug/L	9.6	1.6	1	11/05/19 09:01	11/06/19 12:26	621-64-7	
N-Nitrosodiphenylamine	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	86-30-6	
2,2'-Oxybis(1-chloropropane)	<9.6	ug/L	9.6	1.8	1	11/05/19 09:01	11/06/19 12:26	108-60-1	
Pentachlorophenol	<24.0	ug/L	24.0	3.4	1	11/05/19 09:01	11/06/19 12:26	87-86-5	
Phenanthrene	<9.6	ug/L	9.6	1.5	1	11/05/19 09:01	11/06/19 12:26	85-01-8	
Phenol	<9.6	ug/L	9.6	1.2	1	11/05/19 09:01	11/06/19 12:26	108-95-2	
Pyrene	<9.6	ug/L	9.6	2.1	1	11/05/19 09:01	11/06/19 12:26	129-00-0	
2,4,5-Trichlorophenol	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	95-95-4	
2,4,6-Trichlorophenol	<9.6	ug/L	9.6	1.4	1	11/05/19 09:01	11/06/19 12:26	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	74	%	21-110		1	11/05/19 09:01	11/06/19 12:26	4165-60-0	
2-Fluorobiphenyl (S)	71	%	27-110		1	11/05/19 09:01	11/06/19 12:26	321-60-8	
Terphenyl-d14 (S)	65	%	31-107		1	11/05/19 09:01	11/06/19 12:26	1718-51-0	
Phenol-d6 (S)	35	%	10-110		1	11/05/19 09:01	11/06/19 12:26	13127-88-3	
2-Fluorophenol (S)	45	%	12-110		1	11/05/19 09:01	11/06/19 12:26	367-12-4	
2,4,6-Tribromophenol (S)	75	%	27-110		1	11/05/19 09:01	11/06/19 12:26	118-79-6	
<b>Tentatively Identified Compounds</b>									
Unknown	8.6J	ug/L			1	11/05/19 09:01	11/06/19 12:26		

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-15      Lab ID: 92451816004      Collected: 10/30/19 15:05      Received: 10/31/19 11:26      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
Acenaphthene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	83-32-9	
Acenaphthylene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	208-96-8	
Acetophenone	<9.8	ug/L	9.8	1.9	1	11/05/19 09:01	11/06/19 12:56	98-86-2	
Anthracene	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 12:56	120-12-7	
Atrazine	<19.6	ug/L	19.6	2.6	1	11/05/19 09:01	11/06/19 12:56	1912-24-9	
Benzaldehyde	<19.6	ug/L	19.6	1.2	1	11/05/19 09:01	11/06/19 12:56	100-52-7	
Benzo(a)anthracene	<9.8	ug/L	9.8	2.1	1	11/05/19 09:01	11/06/19 12:56	56-55-3	
Benzo(a)pyrene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 12:56	50-32-8	
Benzo(b)fluoranthene	<9.8	ug/L	9.8	2.1	1	11/05/19 09:01	11/06/19 12:56	205-99-2	
Benzo(g,h,i)perylene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 12:56	191-24-2	
Benzo(k)fluoranthene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 12:56	207-08-9	
Biphenyl (Diphenyl)	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	92-52-4	
4-Bromophenylphenyl ether	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	101-55-3	
Butylbenzylphthalate	<9.8	ug/L	9.8	2.4	1	11/05/19 09:01	11/06/19 12:56	85-68-7	
Caprolactam	<9.8	ug/L	9.8	0.94	1	11/05/19 09:01	11/06/19 12:56	105-60-2	
Carbazole	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 12:56	86-74-8	
4-Chloro-3-methylphenol	<19.6	ug/L	19.6	2.8	1	11/05/19 09:01	11/06/19 12:56	59-50-7	
4-Chloroaniline	<19.6	ug/L	19.6	2.8	1	11/05/19 09:01	11/06/19 12:56	106-47-8	
bis(2-Chloroethoxy)methane	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	111-91-1	
bis(2-Chloroethyl) ether	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 12:56	111-44-4	
2-Chloronaphthalene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	91-58-7	
2-Chlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	95-57-8	
4-Chlorophenylphenyl ether	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	7005-72-3	
Chrysene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 12:56	218-01-9	
Dibenzo(a,e)pyrene	<49.0	ug/L	49.0	3.3	1	11/05/19 09:01	11/06/19 12:56	192-65-4	L2,v3
Dibenzofuran	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	132-64-9	
3,3'-Dichlorobenzidine	<19.6	ug/L	19.6	3.8	1	11/05/19 09:01	11/06/19 12:56	91-94-1	
2,4-Dichlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	120-83-2	
Diethylphthalate	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	84-66-2	
2,4-Dimethylphenol	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	105-67-9	
Dimethylphthalate	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	131-11-3	
Di-n-butylphthalate	<9.8	ug/L	9.8	1.9	1	11/05/19 09:01	11/06/19 12:56	84-74-2	
4,6-Dinitro-2-methylphenol	<19.6	ug/L	19.6	2.2	1	11/05/19 09:01	11/06/19 12:56	534-52-1	
2,4-Dinitrophenol	<49.0	ug/L	49.0	5.0	1	11/05/19 09:01	11/06/19 12:56	51-28-5	
2,4-Dinitrotoluene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	121-14-2	
2,6-Dinitrotoluene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	606-20-2	
Di-n-octylphthalate	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	117-84-0	
bis(2-Ethylhexyl)phthalate	<5.9	ug/L	5.9	2.3	1	11/05/19 09:01	11/06/19 12:56	117-81-7	
Fluoranthene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 12:56	206-44-0	
Fluorene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	86-73-7	
Hexachloro-1,3-butadiene	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	87-68-3	
Hexachlorobenzene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	118-74-1	
Hexachlorocyclopentadiene	<9.8	ug/L	9.8	1.3	1	11/05/19 09:01	11/06/19 12:56	77-47-4	
Hexachloroethane	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 12:56	67-72-1	
Indeno(1,2,3-cd)pyrene	<9.8	ug/L	9.8	2.0	1	11/05/19 09:01	11/06/19 12:56	193-39-5	
Isophorone	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	78-59-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: MW-15      Lab ID: 92451816004      Collected: 10/30/19 15:05      Received: 10/31/19 11:26      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D      Preparation Method: EPA 3510C									
2-Methylnaphthalene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	91-57-6	
2-Methylphenol(o-Cresol)	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	95-48-7	
3&4-Methylphenol(m&p Cresol)	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	15831-10-4	
Naphthalene	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	91-20-3	
2-Nitroaniline	<49.0	ug/L	49.0	2.2	1	11/05/19 09:01	11/06/19 12:56	88-74-4	v1
3-Nitroaniline	<49.0	ug/L	49.0	2.6	1	11/05/19 09:01	11/06/19 12:56	99-09-2	
4-Nitroaniline	<19.6	ug/L	19.6	3.3	1	11/05/19 09:01	11/06/19 12:56	100-01-6	
Nitrobenzene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	98-95-3	
2-Nitrophenol	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	88-75-5	
4-Nitrophenol	<49.0	ug/L	49.0	4.2	1	11/05/19 09:01	11/06/19 12:56	100-02-7	
N-Nitroso-di-n-propylamine	<9.8	ug/L	9.8	1.7	1	11/05/19 09:01	11/06/19 12:56	621-64-7	
N-Nitrosodiphenylamine	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	86-30-6	
2,2'-Oxybis(1-chloropropane)	<9.8	ug/L	9.8	1.8	1	11/05/19 09:01	11/06/19 12:56	108-60-1	
Pentachlorophenol	<24.5	ug/L	24.5	3.5	1	11/05/19 09:01	11/06/19 12:56	87-86-5	
Phenanthrene	<9.8	ug/L	9.8	1.6	1	11/05/19 09:01	11/06/19 12:56	85-01-8	
Phenol	<9.8	ug/L	9.8	1.3	1	11/05/19 09:01	11/06/19 12:56	108-95-2	
Pyrene	<9.8	ug/L	9.8	2.2	1	11/05/19 09:01	11/06/19 12:56	129-00-0	
2,4,5-Trichlorophenol	<9.8	ug/L	9.8	1.5	1	11/05/19 09:01	11/06/19 12:56	95-95-4	
2,4,6-Trichlorophenol	<9.8	ug/L	9.8	1.4	1	11/05/19 09:01	11/06/19 12:56	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	75	%	21-110		1	11/05/19 09:01	11/06/19 12:56	4165-60-0	
2-Fluorobiphenyl (S)	70	%	27-110		1	11/05/19 09:01	11/06/19 12:56	321-60-8	
Terphenyl-d14 (S)	70	%	31-107		1	11/05/19 09:01	11/06/19 12:56	1718-51-0	
Phenol-d6 (S)	34	%	10-110		1	11/05/19 09:01	11/06/19 12:56	13127-88-3	
2-Fluorophenol (S)	48	%	12-110		1	11/05/19 09:01	11/06/19 12:56	367-12-4	
2,4,6-Tribromophenol (S)	71	%	27-110		1	11/05/19 09:01	11/06/19 12:56	118-79-6	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: DUPLICATE									
Lab ID: 92451816005 Collected: 10/30/19 09:00 Received: 10/31/19 11:26 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
Acenaphthene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	83-32-9	
Acenaphthylene	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	208-96-8	
Acetophenone	<9.9	ug/L	9.9	1.9	1	11/05/19 09:01	11/06/19 13:27	98-86-2	
Anthracene	<9.9	ug/L	9.9	1.7	1	11/05/19 09:01	11/06/19 13:27	120-12-7	
Atrazine	<19.8	ug/L	19.8	2.6	1	11/05/19 09:01	11/06/19 13:27	1912-24-9	
Benzaldehyde	<19.8	ug/L	19.8	1.2	1	11/05/19 09:01	11/06/19 13:27	100-52-7	
Benzo(a)anthracene	<9.9	ug/L	9.9	2.1	1	11/05/19 09:01	11/06/19 13:27	56-55-3	
Benzo(a)pyrene	<9.9	ug/L	9.9	2.2	1	11/05/19 09:01	11/06/19 13:27	50-32-8	
Benzo(b)fluoranthene	<9.9	ug/L	9.9	2.2	1	11/05/19 09:01	11/06/19 13:27	205-99-2	
Benzo(g,h,i)perylene	<9.9	ug/L	9.9	2.1	1	11/05/19 09:01	11/06/19 13:27	191-24-2	
Benzo(k)fluoranthene	<9.9	ug/L	9.9	2.0	1	11/05/19 09:01	11/06/19 13:27	207-08-9	
Biphenyl (Diphenyl)	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	92-52-4	
4-Bromophenylphenyl ether	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	101-55-3	
Butylbenzylphthalate	<9.9	ug/L	9.9	2.5	1	11/05/19 09:01	11/06/19 13:27	85-68-7	
Caprolactam	<9.9	ug/L	9.9	0.95	1	11/05/19 09:01	11/06/19 13:27	105-60-2	
Carbazole	<9.9	ug/L	9.9	1.9	1	11/05/19 09:01	11/06/19 13:27	86-74-8	
4-Chloro-3-methylphenol	<19.8	ug/L	19.8	2.8	1	11/05/19 09:01	11/06/19 13:27	59-50-7	
4-Chloroaniline	<19.8	ug/L	19.8	2.8	1	11/05/19 09:01	11/06/19 13:27	106-47-8	
bis(2-Chloroethoxy)methane	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	111-91-1	
bis(2-Chloroethyl) ether	<9.9	ug/L	9.9	1.7	1	11/05/19 09:01	11/06/19 13:27	111-44-4	
2-Chloronaphthalene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	91-58-7	
2-Chlorophenol	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	95-57-8	
4-Chlorophenylphenyl ether	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	7005-72-3	
Chrysene	<9.9	ug/L	9.9	2.1	1	11/05/19 09:01	11/06/19 13:27	218-01-9	
Dibenzo(a,e)pyrene	<49.5	ug/L	49.5	3.4	1	11/05/19 09:01	11/06/19 13:27	192-65-4	L2,v3
Dibenzofuran	<9.9	ug/L	9.9	1.7	1	11/05/19 09:01	11/06/19 13:27	132-64-9	
3,3'-Dichlorobenzidine	<19.8	ug/L	19.8	3.8	1	11/05/19 09:01	11/06/19 13:27	91-94-1	
2,4-Dichlorophenol	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	120-83-2	
Diethylphthalate	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	84-66-2	
2,4-Dimethylphenol	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	105-67-9	
Dimethylphthalate	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	131-11-3	
Di-n-butylphthalate	<9.9	ug/L	9.9	2.0	1	11/05/19 09:01	11/06/19 13:27	84-74-2	
4,6-Dinitro-2-methylphenol	<19.8	ug/L	19.8	2.2	1	11/05/19 09:01	11/06/19 13:27	534-52-1	
2,4-Dinitrophenol	<49.5	ug/L	49.5	5.0	1	11/05/19 09:01	11/06/19 13:27	51-28-5	
2,4-Dinitrotoluene	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	121-14-2	
2,6-Dinitrotoluene	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	606-20-2	
Di-n-octylphthalate	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	117-84-0	
bis(2-Ethylhexyl)phthalate	<5.9	ug/L	5.9	2.3	1	11/05/19 09:01	11/06/19 13:27	117-81-7	
Fluoranthene	<9.9	ug/L	9.9	2.2	1	11/05/19 09:01	11/06/19 13:27	206-44-0	
Fluorene	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	86-73-7	
Hexachloro-1,3-butadiene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	87-68-3	
Hexachlorobenzene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	118-74-1	
Hexachlorocyclopentadiene	<9.9	ug/L	9.9	1.3	1	11/05/19 09:01	11/06/19 13:27	77-47-4	
Hexachloroethane	<9.9	ug/L	9.9	1.8	1	11/05/19 09:01	11/06/19 13:27	67-72-1	
Indeno(1,2,3-cd)pyrene	<9.9	ug/L	9.9	2.0	1	11/05/19 09:01	11/06/19 13:27	193-39-5	
Isophorone	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	78-59-1	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Sample: DUPLICATE									
Lab ID: 92451816005 Collected: 10/30/19 09:00 Received: 10/31/19 11:26 Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>8270 MSSV Semivolatile Organic</b> Analytical Method: EPA 8270D Preparation Method: EPA 3510C									
2-Methylnaphthalene	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	91-57-6	
2-Methylphenol(o-Cresol)	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	95-48-7	
3&4-Methylphenol(m&p Cresol)	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	15831-10-4	
Naphthalene	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	91-20-3	
2-Nitroaniline	<49.5	ug/L	49.5	2.2	1	11/05/19 09:01	11/06/19 13:27	88-74-4	v1
3-Nitroaniline	<49.5	ug/L	49.5	2.6	1	11/05/19 09:01	11/06/19 13:27	99-09-2	
4-Nitroaniline	<19.8	ug/L	19.8	3.3	1	11/05/19 09:01	11/06/19 13:27	100-01-6	
Nitrobenzene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	98-95-3	
2-Nitrophenol	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	88-75-5	
4-Nitrophenol	<49.5	ug/L	49.5	4.2	1	11/05/19 09:01	11/06/19 13:27	100-02-7	
N-Nitroso-di-n-propylamine	<9.9	ug/L	9.9	1.7	1	11/05/19 09:01	11/06/19 13:27	621-64-7	
N-Nitrosodiphenylamine	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	86-30-6	
2,2'-Oxybis(1-chloropropane)	<9.9	ug/L	9.9	1.8	1	11/05/19 09:01	11/06/19 13:27	108-60-1	
Pentachlorophenol	<24.8	ug/L	24.8	3.5	1	11/05/19 09:01	11/06/19 13:27	87-86-5	
Phenanthrene	<9.9	ug/L	9.9	1.6	1	11/05/19 09:01	11/06/19 13:27	85-01-8	
Phenol	<9.9	ug/L	9.9	1.3	1	11/05/19 09:01	11/06/19 13:27	108-95-2	
Pyrene	<9.9	ug/L	9.9	2.2	1	11/05/19 09:01	11/06/19 13:27	129-00-0	
2,4,5-Trichlorophenol	<9.9	ug/L	9.9	1.5	1	11/05/19 09:01	11/06/19 13:27	95-95-4	
2,4,6-Trichlorophenol	<9.9	ug/L	9.9	1.4	1	11/05/19 09:01	11/06/19 13:27	88-06-2	
<b>Surrogates</b>									
Nitrobenzene-d5 (S)	53	%	21-110		1	11/05/19 09:01	11/06/19 13:27	4165-60-0	
2-Fluorobiphenyl (S)	49	%	27-110		1	11/05/19 09:01	11/06/19 13:27	321-60-8	
Terphenyl-d14 (S)	45	%	31-107		1	11/05/19 09:01	11/06/19 13:27	1718-51-0	
Phenol-d6 (S)	25	%	10-110		1	11/05/19 09:01	11/06/19 13:27	13127-88-3	
2-Fluorophenol (S)	33	%	12-110		1	11/05/19 09:01	11/06/19 13:27	367-12-4	
2,4,6-Tribromophenol (S)	54	%	27-110		1	11/05/19 09:01	11/06/19 13:27	118-79-6	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C  
Pace Project No.: 92451816

QC Batch: 507601 Analysis Method: EPA 8270D  
QC Batch Method: EPA 3510C Analysis Description: 8270 Water MSSV  
Associated Lab Samples: 92451816001, 92451816002, 92451816003, 92451816004, 92451816005

METHOD BLANK: 2725023 Matrix: Water  
Associated Lab Samples: 92451816001, 92451816002, 92451816003, 92451816004, 92451816005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,2'-Oxybis(1-chloropropane)	ug/L	<10.0	10.0	1.8	11/06/19 09:24	
2,4,5-Trichlorophenol	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
2,4,6-Trichlorophenol	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
2,4-Dichlorophenol	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
2,4-Dimethylphenol	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
2,4-Dinitrophenol	ug/L	<50.0	50.0	5.1	11/06/19 09:24	
2,4-Dinitrotoluene	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
2,6-Dinitrotoluene	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
2-Chloronaphthalene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
2-Chlorophenol	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
2-Methylnaphthalene	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
2-Methylphenol(o-Cresol)	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
2-Nitroaniline	ug/L	<50.0	50.0	2.3	11/06/19 09:24	v1
2-Nitrophenol	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
3&4-Methylphenol(m&p Cresol)	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
3,3'-Dichlorobenzidine	ug/L	<20.0	20.0	3.9	11/06/19 09:24	
3-Nitroaniline	ug/L	<50.0	50.0	2.7	11/06/19 09:24	
4,6-Dinitro-2-methylphenol	ug/L	<20.0	20.0	2.2	11/06/19 09:24	
4-Bromophenylphenyl ether	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
4-Chloro-3-methylphenol	ug/L	<20.0	20.0	2.8	11/06/19 09:24	
4-Chloroaniline	ug/L	<20.0	20.0	2.8	11/06/19 09:24	
4-Chlorophenylphenyl ether	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
4-Nitroaniline	ug/L	<20.0	20.0	3.4	11/06/19 09:24	
4-Nitrophenol	ug/L	<50.0	50.0	4.3	11/06/19 09:24	
Acenaphthene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Acenaphthylene	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
Acetophenone	ug/L	<10.0	10.0	1.9	11/06/19 09:24	
Anthracene	ug/L	<10.0	10.0	1.7	11/06/19 09:24	
Atrazine	ug/L	<20.0	20.0	2.6	11/06/19 09:24	
Benzaldehyde	ug/L	<20.0	20.0	1.3	11/06/19 09:24	
Benzo(a)anthracene	ug/L	<10.0	10.0	2.1	11/06/19 09:24	
Benzo(a)pyrene	ug/L	<10.0	10.0	2.2	11/06/19 09:24	
Benzo(b)fluoranthene	ug/L	<10.0	10.0	2.2	11/06/19 09:24	
Benzo(g,h,i)perylene	ug/L	<10.0	10.0	2.1	11/06/19 09:24	
Benzo(k)fluoranthene	ug/L	<10.0	10.0	2.0	11/06/19 09:24	
Biphenyl (Diphenyl)	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
bis(2-Chloroethoxy)methane	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
bis(2-Chloroethyl) ether	ug/L	<10.0	10.0	1.7	11/06/19 09:24	
bis(2-Ethylhexyl)phthalate	ug/L	<6.0	6.0	2.3	11/06/19 09:24	
Butylbenzylphthalate	ug/L	<10.0	10.0	2.5	11/06/19 09:24	
Caprolactam	ug/L	<10.0	10.0	0.96	11/06/19 09:24	

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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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C  
Pace Project No.: 92451816

METHOD BLANK: 2725023

Matrix: Water

Associated Lab Samples: 92451816001, 92451816002, 92451816003, 92451816004, 92451816005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbazole	ug/L	<10.0	10.0	1.9	11/06/19 09:24	
Chrysene	ug/L	<10.0	10.0	2.1	11/06/19 09:24	
Di-n-butylphthalate	ug/L	<10.0	10.0	2.0	11/06/19 09:24	
Di-n-octylphthalate	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
Dibenzo(a,e)pyrene	ug/L	<50.0	50.0	3.4	11/06/19 09:24	v3
Dibenzofuran	ug/L	<10.0	10.0	1.7	11/06/19 09:24	
Diethylphthalate	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Dimethylphthalate	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
Fluoranthene	ug/L	<10.0	10.0	2.2	11/06/19 09:24	
Fluorene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Hexachloro-1,3-butadiene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Hexachlorobenzene	ug/L	<10.0	10.0	1.7	11/06/19 09:24	
Hexachlorocyclopentadiene	ug/L	<10.0	10.0	1.3	11/06/19 09:24	
Hexachloroethane	ug/L	<10.0	10.0	1.8	11/06/19 09:24	
Indeno(1,2,3-cd)pyrene	ug/L	<10.0	10.0	2.0	11/06/19 09:24	
Isophorone	ug/L	<10.0	10.0	1.5	11/06/19 09:24	
N-Nitroso-di-n-propylamine	ug/L	<10.0	10.0	1.7	11/06/19 09:24	
N-Nitrosodiphenylamine	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
Naphthalene	ug/L	<10.0	10.0	1.4	11/06/19 09:24	
Nitrobenzene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Pentachlorophenol	ug/L	<25.0	25.0	3.5	11/06/19 09:24	
Phenanthrene	ug/L	<10.0	10.0	1.6	11/06/19 09:24	
Phenol	ug/L	<10.0	10.0	1.3	11/06/19 09:24	
Pyrene	ug/L	<10.0	10.0	2.2	11/06/19 09:24	
2,4,6-Tribromophenol (S)	%	70	27-110		11/06/19 09:24	
2-Fluorobiphenyl (S)	%	71	27-110		11/06/19 09:24	
2-Fluorophenol (S)	%	47	12-110		11/06/19 09:24	
Nitrobenzene-d5 (S)	%	75	21-110		11/06/19 09:24	
Phenol-d6 (S)	%	32	10-110		11/06/19 09:24	
Terphenyl-d14 (S)	%	82	31-107		11/06/19 09:24	

LABORATORY CONTROL SAMPLE: 2725024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,2'-Oxybis(1-chloropropane)	ug/L	50	46.9	94	33-130	
2,4,5-Trichlorophenol	ug/L	50	39.2	78	17-130	
2,4,6-Trichlorophenol	ug/L	50	41.8	84	10-137	
2,4-Dichlorophenol	ug/L	50	42.3	85	24-130	
2,4-Dimethylphenol	ug/L	50	43.6	87	37-130	
2,4-Dinitrophenol	ug/L	250	205	82	10-160	
2,4-Dinitrotoluene	ug/L	50	46.7	93	61-130	
2,6-Dinitrotoluene	ug/L	50	48.9	98	64-130	
2-Chloronaphthalene	ug/L	50	48.0	96	54-130	
2-Chlorophenol	ug/L	50	42.6	85	24-130	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

LABORATORY CONTROL SAMPLE: 2725024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	50	40.7	81	47-130	
2-Methylphenol(o-Cresol)	ug/L	50	39.6	79	30-130	
2-Nitroaniline	ug/L	100	103	103	52-130	v1
2-Nitrophenol	ug/L	50	46.6	93	15-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	81.7	163	10-168	
3,3'-Dichlorobenzidine	ug/L	100	82.9	83	10-143	
3-Nitroaniline	ug/L	100	96.0	96	57-130	
4,6-Dinitro-2-methylphenol	ug/L	100	98.2	98	10-166	
4-Bromophenylphenyl ether	ug/L	50	38.8	78	55-130	
4-Chloro-3-methylphenol	ug/L	100	91.1	91	37-130	
4-Chloroaniline	ug/L	100	89.7	90	46-130	
4-Chlorophenylphenyl ether	ug/L	50	41.8	84	55-130	
4-Nitroaniline	ug/L	100	96.7	97	58-130	
4-Nitrophenol	ug/L	250	136	54	10-130	
Acenaphthene	ug/L	50	43.6	87	54-130	
Acenaphthylene	ug/L	50	47.0	94	54-130	
Acetophenone	ug/L	50	43.6	87	41-130	
Anthracene	ug/L	50	45.0	90	60-130	
Atrazine	ug/L	50	39.0	78	50-158	
Benzaldehyde	ug/L	50	44.7	89	10-130	
Benzo(a)anthracene	ug/L	50	44.5	89	60-130	
Benzo(a)pyrene	ug/L	50	46.0	92	56-130	
Benzo(b)fluoranthene	ug/L	50	49.2	98	59-130	
Benzo(g,h,i)perylene	ug/L	50	41.9	84	58-130	
Benzo(k)fluoranthene	ug/L	50	46.4	93	56-130	
Biphenyl (Diphenyl)	ug/L	50	40.6	81	49-130	
bis(2-Chloroethoxy)methane	ug/L	50	41.5	83	46-130	
bis(2-Chloroethyl) ether	ug/L	50	43.8	88	41-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	42.4	85	54-130	
Butylbenzylphthalate	ug/L	50	42.0	84	52-130	
Caprolactam	ug/L	50	15.1	30	10-130	
Carbazole	ug/L	50	45.7	91	59-130	
Chrysene	ug/L	50	41.5	83	60-130	
Di-n-butylphthalate	ug/L	50	44.0	88	57-130	
Di-n-octylphthalate	ug/L	50	47.9	96	52-130	
Dibenzo(a,e)pyrene	ug/L	50	<50.0	25	49-130	L2,v3
Dibenzofuran	ug/L	50	40.9	82	57-130	
Diethylphthalate	ug/L	50	42.5	85	53-130	
Dimethylphthalate	ug/L	50	42.1	84	54-130	
Fluoranthene	ug/L	50	46.4	93	58-130	
Fluorene	ug/L	50	45.4	91	58-130	
Hexachloro-1,3-butadiene	ug/L	50	34.7	69	27-130	
Hexachlorobenzene	ug/L	50	38.7	77	55-130	
Hexachlorocyclopentadiene	ug/L	50	36.0	72	22-130	
Hexachloroethane	ug/L	50	39.5	79	25-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	43.5	87	58-130	
Isophorone	ug/L	50	43.3	87	39-130	

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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C  
Pace Project No.: 92451816

LABORATORY CONTROL SAMPLE: 2725024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
N-Nitroso-di-n-propylamine	ug/L	50	48.8	98	47-130	
N-Nitrosodiphenylamine	ug/L	50	40.8	82	56-130	
Naphthalene	ug/L	50	43.2	86	41-130	
Nitrobenzene	ug/L	50	45.4	91	42-130	
Pentachlorophenol	ug/L	100	85.7	86	10-137	
Phenanthrene	ug/L	50	43.1	86	59-130	
Phenol	ug/L	50	23.0	46	10-130	
Pyrene	ug/L	50	40.4	81	59-130	
2,4,6-Tribromophenol (S)	%			83	27-110	
2-Fluorobiphenyl (S)	%			80	27-110	
2-Fluorophenol (S)	%			59	12-110	
Nitrobenzene-d5 (S)	%			87	21-110	
Phenol-d6 (S)	%			43	10-110	
Terphenyl-d14 (S)	%			68	31-107	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2725025 2725026

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92451816001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
2,2'-Oxybis(1-chloropropane)	ug/L	<9.8	48.1	49	42.7	29.6	89	60	10-130	36	30	R1
2,4,5-Trichlorophenol	ug/L	<9.8	48.1	49	38.7	31.6	80	64	23-133	20	30	
2,4,6-Trichlorophenol	ug/L	<9.8	48.1	49	40.6	32.5	84	66	10-146	22	30	
2,4-Dichlorophenol	ug/L	<9.8	48.1	49	40.4	29.9	84	61	11-136	30	30	
2,4-Dimethylphenol	ug/L	<9.8	48.1	49	41.7	30.9	87	63	20-130	30	30	
2,4-Dinitrophenol	ug/L	<49.0	240	245	235	219	98	89	10-159	7	30	
2,4-Dinitrotoluene	ug/L	<9.8	48.1	49	43.6	41.6	91	85	66-130	5	30	
2,6-Dinitrotoluene	ug/L	<9.8	48.1	49	47.6	41.5	99	85	65-130	14	30	
2-Chloronaphthalene	ug/L	<9.8	48.1	49	42.6	32.5	89	66	40-132	27	30	
2-Chlorophenol	ug/L	<9.8	48.1	49	40.5	27.5	84	56	10-130	38	30	R1
2-Methylnaphthalene	ug/L	<9.8	48.1	49	36.2	27.5	75	56	47-130	27	30	
2-Methylphenol(o-Cresol)	ug/L	<9.8	48.1	49	39.8	27.6	83	56	10-130	36	30	R1
2-Nitroaniline	ug/L	<49.0	96.2	98	83.5	75.2	87	77	49-130	10	30	v1
2-Nitrophenol	ug/L	<9.8	48.1	49	45.4	32.0	95	65	10-145	35	30	R1
3&4-Methylphenol(m&p Cresol)	ug/L	<9.8	48.1	49	78.1	58.7	162	120	10-197	28	30	
3,3'-Dichlorobenzidine	ug/L	<19.6	96.2	98	62.2	57.2	65	58	10-130	8	30	
3-Nitroaniline	ug/L	<49.0	96.2	98	88.3	80.3	92	82	58-130	9	30	
4,6-Dinitro-2-methylphenol	ug/L	<19.6	96.2	98	103	90.7	107	93	10-174	12	30	
4-Bromophenylphenyl ether	ug/L	<9.8	48.1	49	39.2	32.2	81	66	52-130	20	30	
4-Chloro-3-methylphenol	ug/L	<19.6	96.2	98	87.4	72.7	91	74	38-130	18	30	
4-Chloroaniline	ug/L	<19.6	96.2	98	83.1	66.3	86	68	31-130	22	30	
4-Chlorophenylphenyl ether	ug/L	<9.8	48.1	49	39.8	34.0	83	69	19-130	16	30	
4-Nitroaniline	ug/L	<19.6	96.2	98	71.3	68.8	74	70	59-130	4	30	
4-Nitrophenol	ug/L	<49.0	240	245	174	155	72	63	10-130	11	30	
Acenaphthene	ug/L	<9.8	48.1	49	40.9	33.8	85	69	50-130	19	30	

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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Parameter	Units	2725025		2725026		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92451816001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Acenaphthylene	ug/L	<9.8	48.1	49	43.7	36.1	91	74	50-130	19	30	
Acetophenone	ug/L	<9.8	48.1	49	40.3	30.0	84	61	26-130	29	30	
Anthracene	ug/L	<9.8	48.1	49	43.8	39.6	91	81	61-130	10	30	
Atrazine	ug/L	<19.6	48.1	49	36.6	33.0	76	67	46-150	10	30	
Benzaldehyde	ug/L	<19.6	48.1	49	44.0	35.3	92	72	10-130	22	30	
Benzo(a)anthracene	ug/L	<9.8	48.1	49	43.2	39.5	90	81	60-130	9	30	
Benzo(a)pyrene	ug/L	<9.8	48.1	49	45.0	40.6	94	83	58-130	10	30	
Benzo(b)fluoranthene	ug/L	<9.8	48.1	49	47.9	43.2	100	88	53-139	10	30	
Benzo(g,h,i)perylene	ug/L	<9.8	48.1	49	40.1	36.6	83	75	58-130	9	30	
Benzo(k)fluoranthene	ug/L	<9.8	48.1	49	45.5	40.4	95	83	51-130	12	30	
Biphenyl (Diphenyl)	ug/L	<9.8	48.1	49	37.7	29.2	78	60	44-130	25	30	
bis(2-Chloroethoxy)methane	ug/L	<9.8	48.1	49	40.0	28.8	83	59	29-130	33	30	R1
bis(2-Chloroethyl) ether	ug/L	<9.8	48.1	49	41.1	28.2	86	58	21-130	37	30	R1
bis(2-Ethylhexyl)phthalate	ug/L	<5.9	48.1	49	41.5	39.0	86	80	46-140	6	30	
Butylbenzylphthalate	ug/L	<9.8	48.1	49	41.6	38.2	87	78	45-147	8	30	
Caprolactam	ug/L	<9.8	48.1	49	22.0	19.2	46	39	10-130	13	30	
Carbazole	ug/L	<9.8	48.1	49	43.9	40.7	91	83	63-130	8	30	
Chrysene	ug/L	<9.8	48.1	49	39.4	37.1	82	76	60-130	6	30	
Di-n-butylphthalate	ug/L	<9.8	48.1	49	42.8	39.0	89	79	56-130	9	30	
Di-n-octylphthalate	ug/L	<9.8	48.1	49	46.8	42.4	97	87	38-155	10	30	
Dibenzo(a,e)pyrene	ug/L	<49.0	48.1	49	<48.1	<49.0	26	23	51-130		30	M0,v3
Dibenzofuran	ug/L	<9.8	48.1	49	37.1	32.7	77	67	56-130	13	30	
Diethylphthalate	ug/L	<9.8	48.1	49	40.7	37.2	85	76	54-130	9	30	
Dimethylphthalate	ug/L	<9.8	48.1	49	40.4	35.7	84	73	53-130	12	30	
Fluoranthene	ug/L	<9.8	48.1	49	44.6	41.0	93	84	61-130	8	30	
Fluorene	ug/L	<9.8	48.1	49	42.7	37.8	89	77	56-130	12	30	
Hexachloro-1,3-butadiene	ug/L	<9.8	48.1	49	27.5	18.9	57	39	10-130	37	30	R1
Hexachlorobenzene	ug/L	<9.8	48.1	49	40.1	33.1	83	67	54-130	19	30	
Hexachlorocyclopentadiene	ug/L	<9.8	48.1	49	33.2	21.2	69	43	10-137	44	30	R1
Hexachloroethane	ug/L	<9.8	48.1	49	31.2	21.2	65	43	13-130	38	30	R1
Indeno(1,2,3-cd)pyrene	ug/L	<9.8	48.1	49	42.0	37.6	87	77	58-130	11	30	
Isophorone	ug/L	<9.8	48.1	49	41.8	31.2	87	64	25-130	29	30	
N-Nitroso-di-n-propylamine	ug/L	<9.8	48.1	49	45.2	33.3	94	68	21-132	30	30	
N-Nitrosodiphenylamine	ug/L	<9.8	48.1	49	40.6	35.5	84	72	53-130	13	30	
Naphthalene	ug/L	<9.8	48.1	49	40.2	29.7	84	61	26-130	30	30	
Nitrobenzene	ug/L	<9.8	48.1	49	47.1	34.9	98	71	27-130	30	30	
Pentachlorophenol	ug/L	<24.5	96.2	98	89.9	77.6	93	79	10-130	15	30	
Phenanthrene	ug/L	<9.8	48.1	49	41.9	38.0	87	78	57-130	10	30	
Phenol	ug/L	<9.8	48.1	49	31.1	20.1	65	41	10-130	43	30	R1
Pyrene	ug/L	<9.8	48.1	49	40.2	36.3	84	74	54-130	10	30	
2,4,6-Tribromophenol (S)	%						93	73	27-110			
2-Fluorobiphenyl (S)	%						79	59	27-110			
2-Fluorophenol (S)	%						71	45	12-110			
Nitrobenzene-d5 (S)	%						88	61	21-110			
Phenol-d6 (S)	%						61	40	10-110			

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### QUALITY CONTROL DATA

Project: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2725025												2725026	
Parameter	Units	92451816001 Result	MS	MSD	MS Result	MSD	MS % Rec	MSD	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.		MSD Result		MSD % Rec					
Terphenyl-d14 (S)	%						71	57	31-107				

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## QUALIFIERS

Project: Marsh Lumber 1584-98-146C  
Pace Project No.: 92451816

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### 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.

### LABORATORIES

PASI-C Pace Analytical Services - Charlotte

### WORKORDER QUALIFIERS

WO: 92451816

[1] Samples were received outside of the recommended temperature range of 0-6 degrees Celsius. The samples were received from the field on ice.

### ANALYTE QUALIFIERS

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

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

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: Marsh Lumber 1584-98-146C

Pace Project No.: 92451816

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92451816001	MW-9	EPA 3510C	507601	EPA 8270D	507823
92451816002	MW-10	EPA 3510C	507601	EPA 8270D	507823
92451816003	MW-11	EPA 3510C	507601	EPA 8270D	507823
92451816004	MW-15	EPA 3510C	507601	EPA 8270D	507823
92451816005	DUPLICATE	EPA 3510C	507601	EPA 8270D	507823

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**Laboratory receiving samples:**

Asheville  Eden  Greenwood  Huntersville  Raleigh  Mechanicsville

Sample Condition Upon Receipt

Client Name: SEME Greensboro Project #:

**WO#: 92451816**



Date/Initials Person Examining Contents: 10/31/19 JL

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: \_\_\_\_\_

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: 92T049 Type of Ice:  Wet  Blue  None

Cooler Temp (°C): 8.0 Correction Factor: Add/Subtract (°C) 0.0

Temp should be above freezing to 6°C  
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 8.0

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>WT</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: AMB

Date: 10-31-19

Project Manager SRF Review: AMB

Date: 10-31-19



\*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 bottle

Project #

**WO# : 92451816**

PM: AMB

Due Date: 11/07/19

CLIENT: 92-S&ME Gbor

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	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) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	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)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

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.





**Client:** Ed Henriques  
S&ME, Inc.  
8646 West Market Street  
Suite 105  
Greensboro, NC 27409

**Phone:** 336-288-7180

**Fax:**

**Identifier:** 087QL

**Date Rec:** 12/19/2019

**Report Date:** 12/26/2019

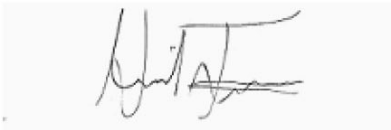
**Client Project #:** 1584-98-146C

**Client Project Name:** Marsh Pamplico

**Purchase Order #:** 1584-98-146C

**Analysis Requested:** CENSUS

**Reviewed By:**



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**MICROBIAL INSIGHTS, INC.**

10515 Research Dr., Knoxville, TN 37932  
Tel. (865) 573-8188 Fax. (865) 573-8133

**CENSUS**

**Client:** S&ME, Inc.  
**Project:** Marsh Pamplico

**MI Project Number:** 087QL  
**Date Received:** 12/19/2019

**Sample Information**

<b>Client Sample ID:</b>	<b>MW-14A</b>	<b>MW-22</b>
Sample Date:	12/18/2019	12/18/2019
Units:	cells/mL	cells/mL
Analyst/Reviewer:	HT	HT

**Dechlorinating Bacteria**

<i>Dehalococcoides</i>	DHC	6.00E-01	<3.00E-01
<i>Desulfitobacterium spp.</i>	DSB	<2.60E+00	1.80E+00 (J)

**Functional Genes**

PCP Regulator Gene	pcpR	<2.60E+00	<2.50E+00
Maleylacetate Reductase	pcpE	7.00E-01 (J)	<2.50E+00
PCP-4-Monooxygenase	pcpB	<2.60E+00	<2.50E+00

**Legend:**

NA = Not Analyzed    NS = Not Sampled    J = Estimated gene copies below PQL but above LQL    I = Inhibited  
< = Result not detected

Quality Assurance/Quality Control Data

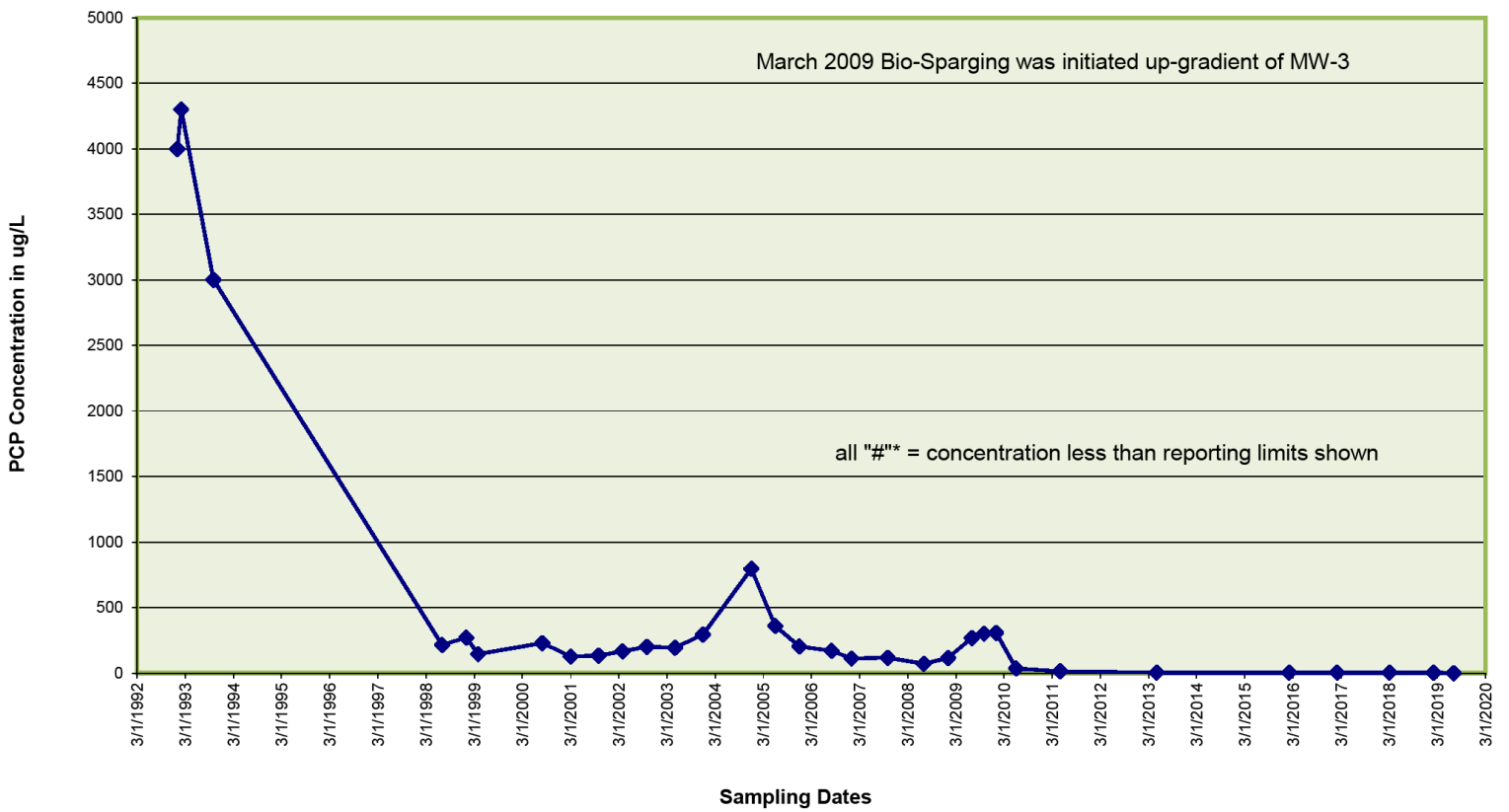
Samples Received 12/19/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
pcpB	12/19/2019	12/26/2019	1 °C	93%	non-detect	non-detect
DHC	12/19/2019	12/26/2019	1 °C	114%	non-detect	non-detect
DSB	12/19/2019	12/26/2019	1 °C	117%	non-detect	non-detect
pcpE	12/19/2019	12/26/2019	1 °C	109%	non-detect	non-detect
pcpR	12/19/2019	12/26/2019	1 °C	114%	non-detect	non-detect

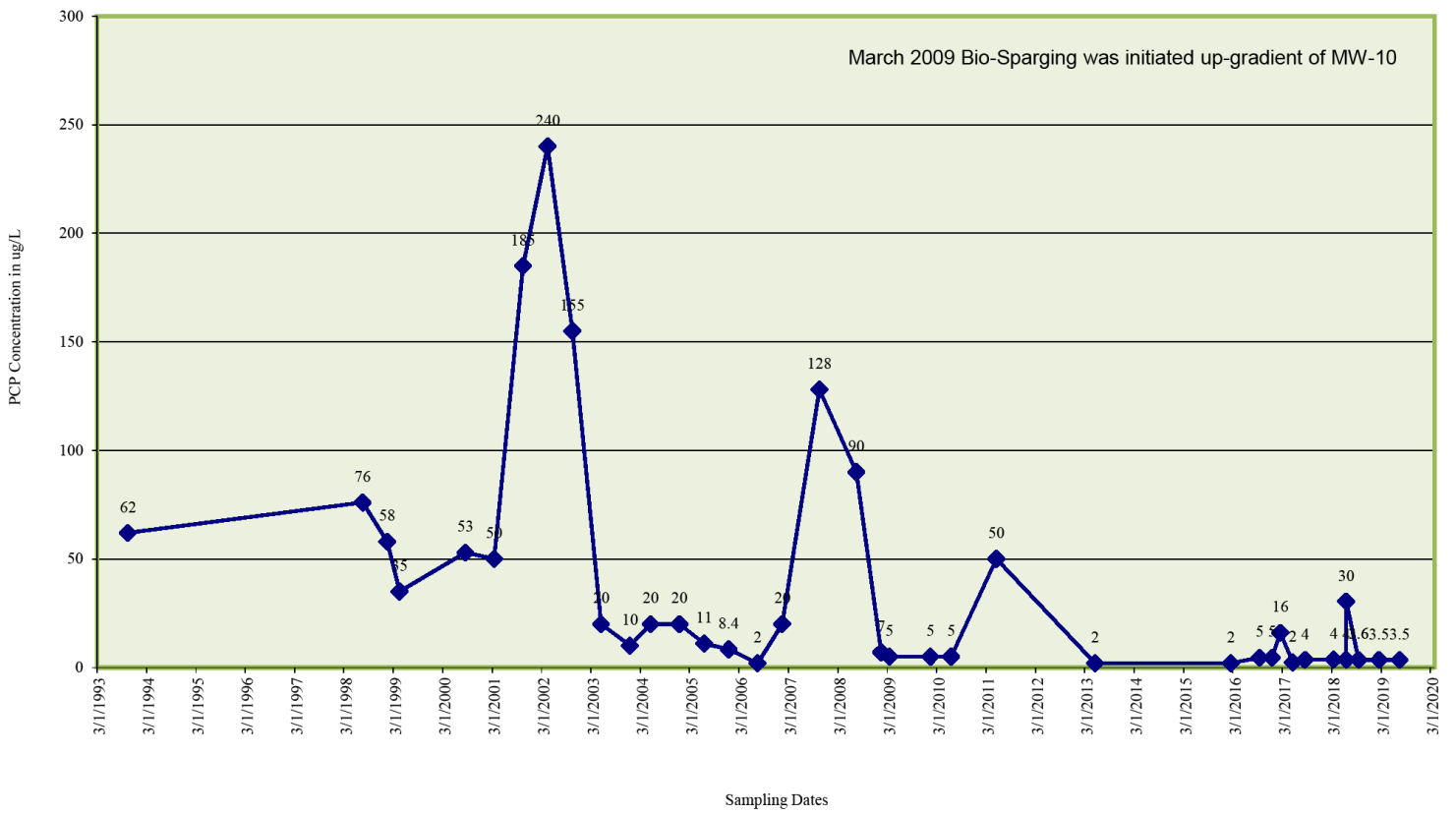
## **Appendix III – Time vs Concentration Charts**



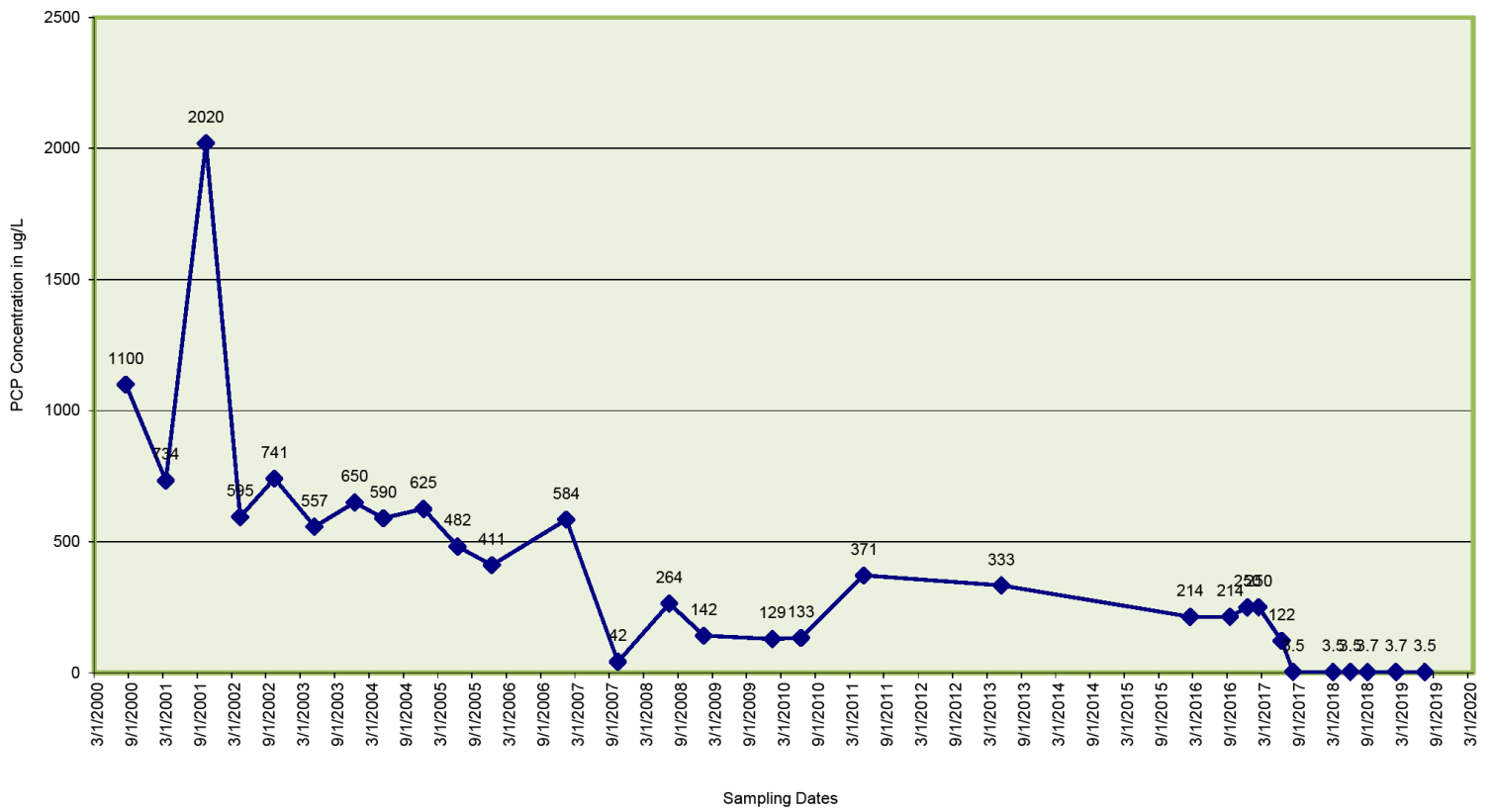
### PCP Concentrations vs Time @ MW-3



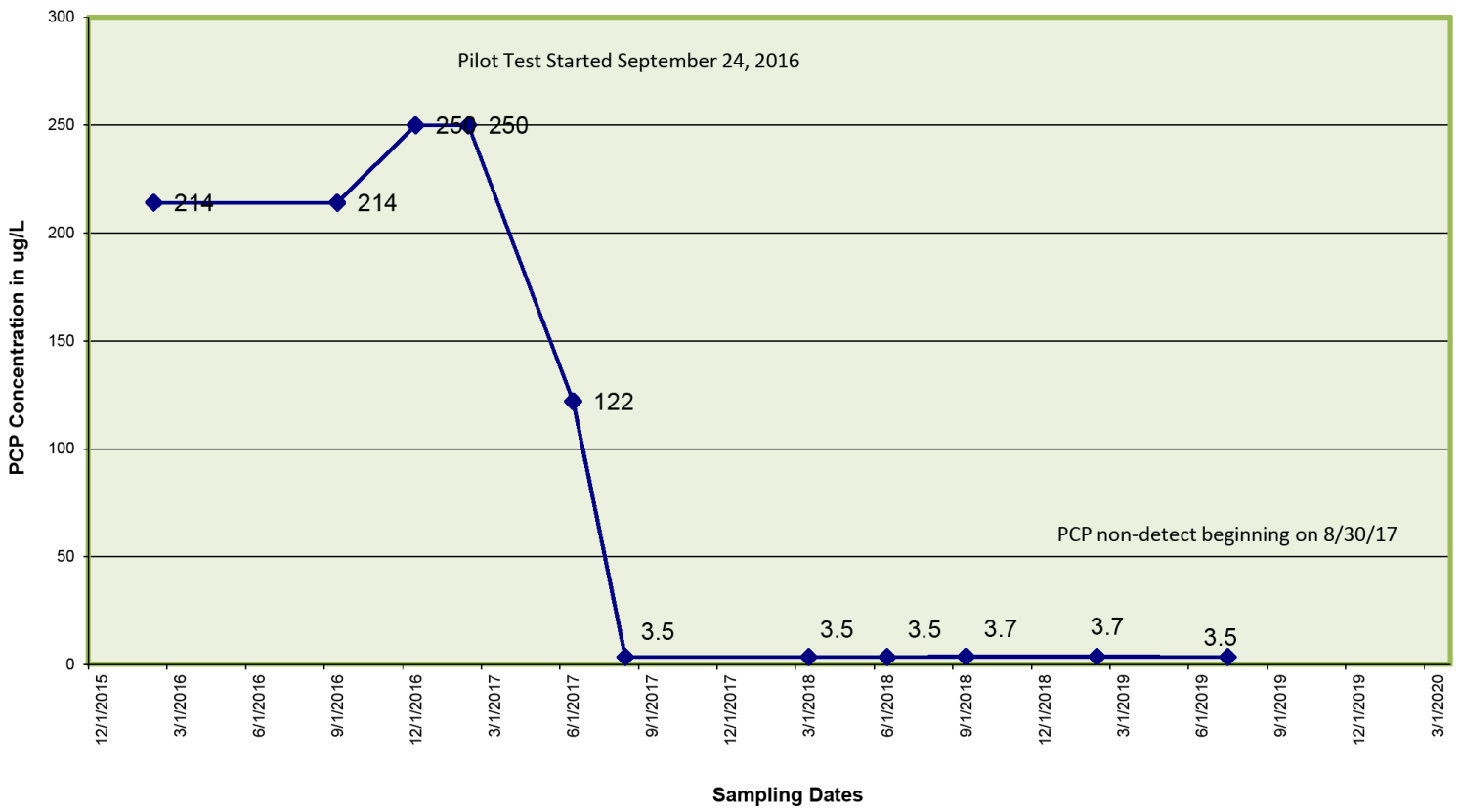
PCP Concentrations vs Time @ MW-10



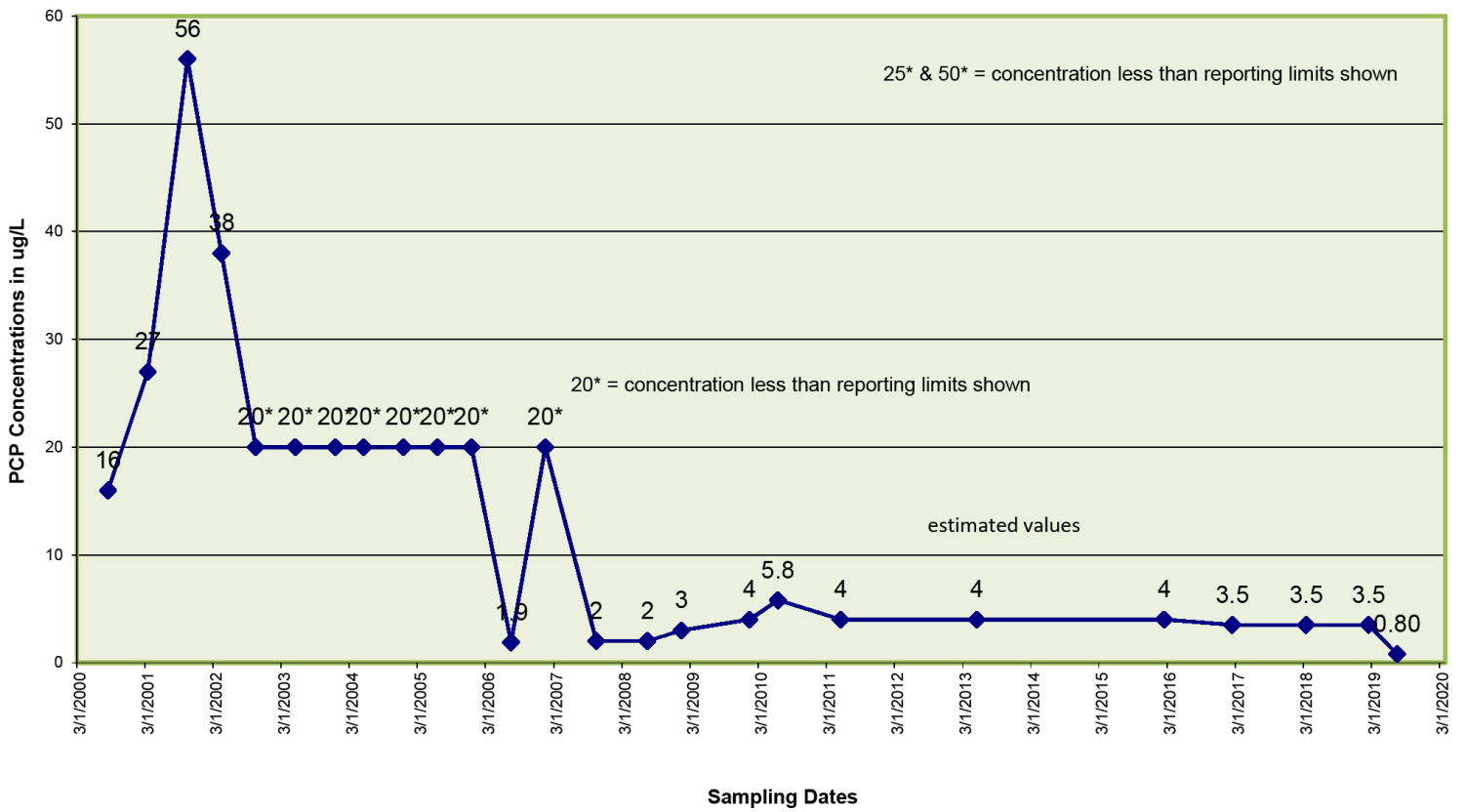
PCP Concentration vs Time @ MW-14



PCP Concentration vs Time @ MW-14

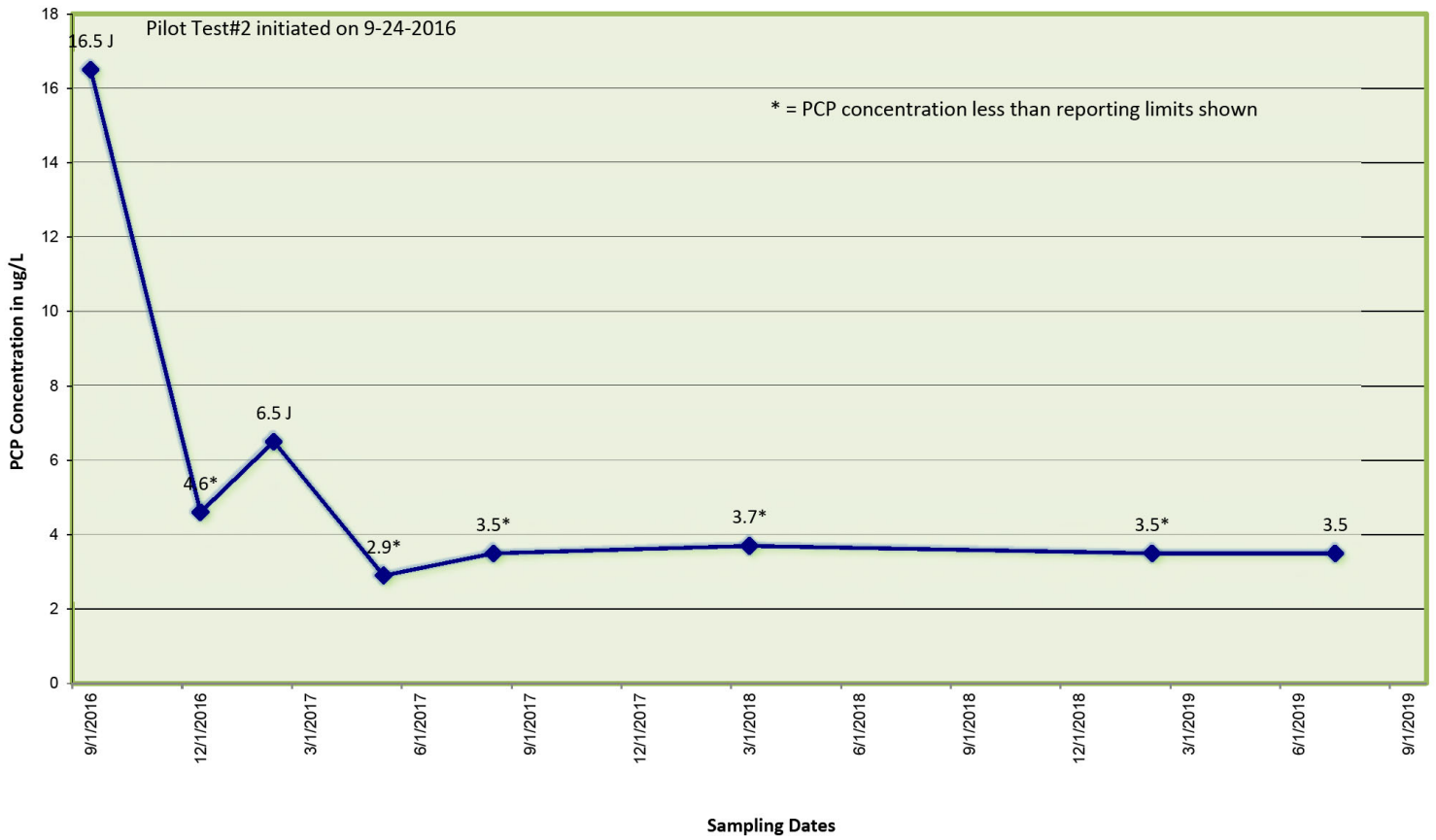


PCP Concentrations vs Time @ MW-16

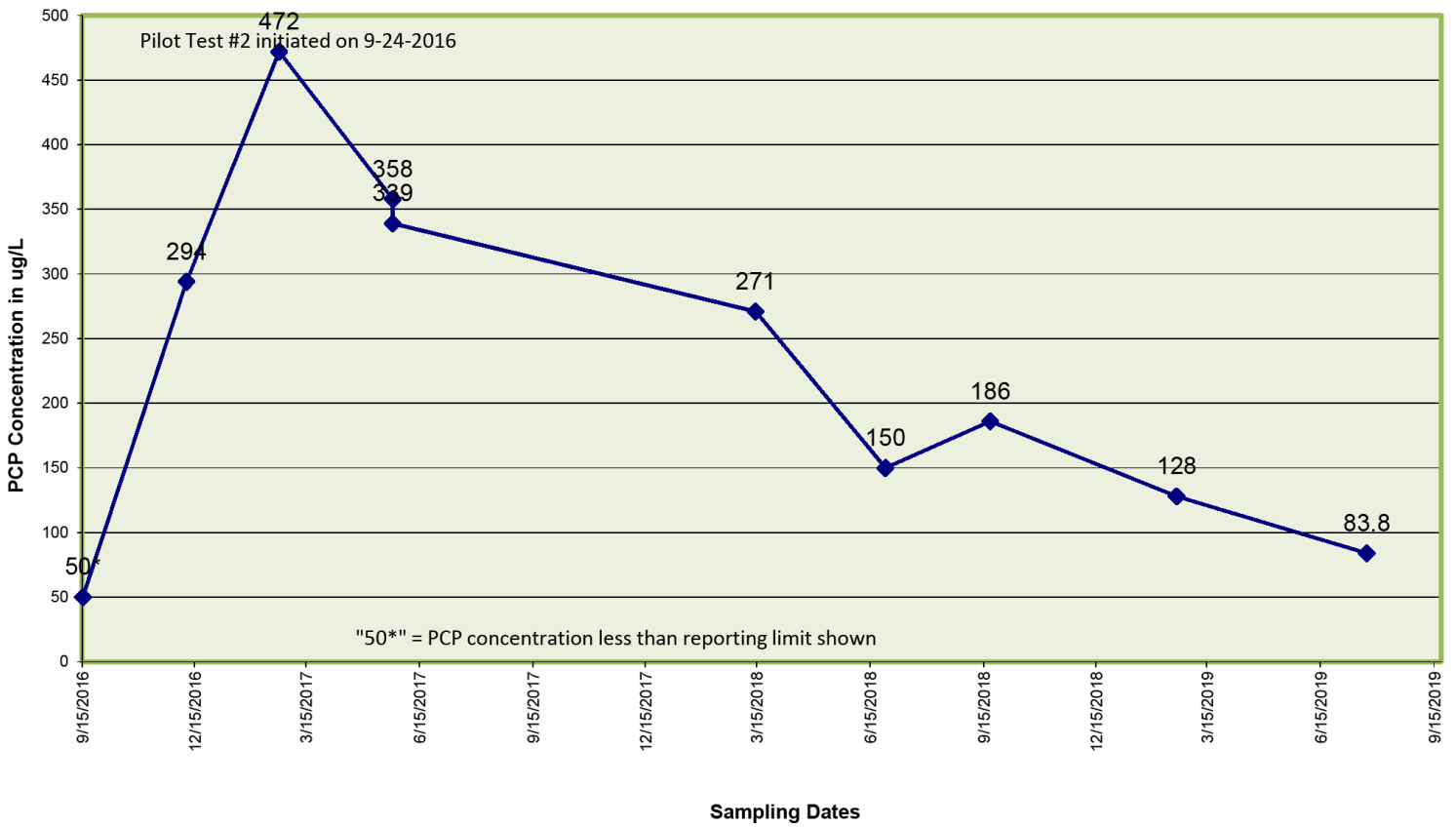




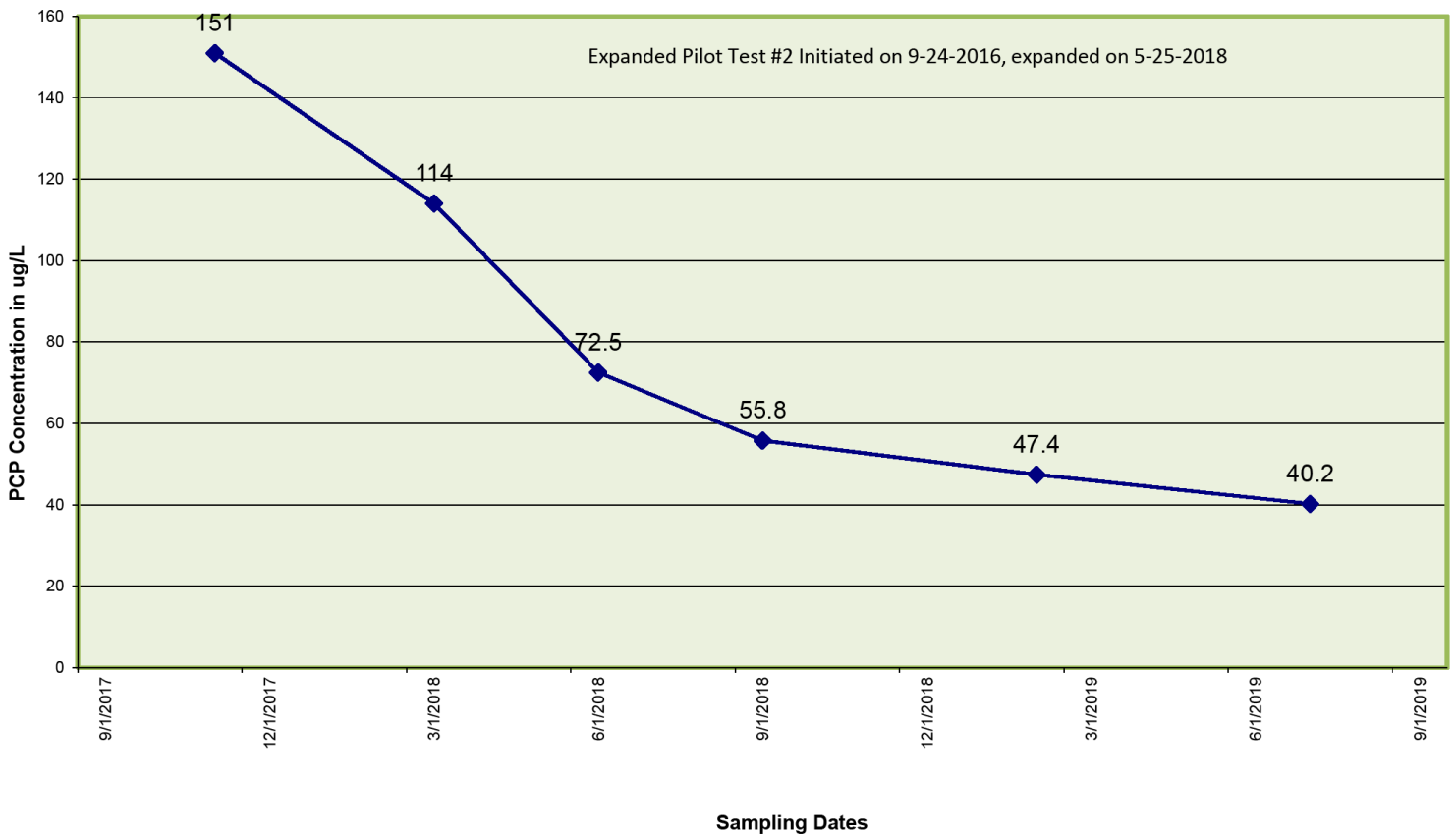
PCP Concentration vs Time @ MW-21



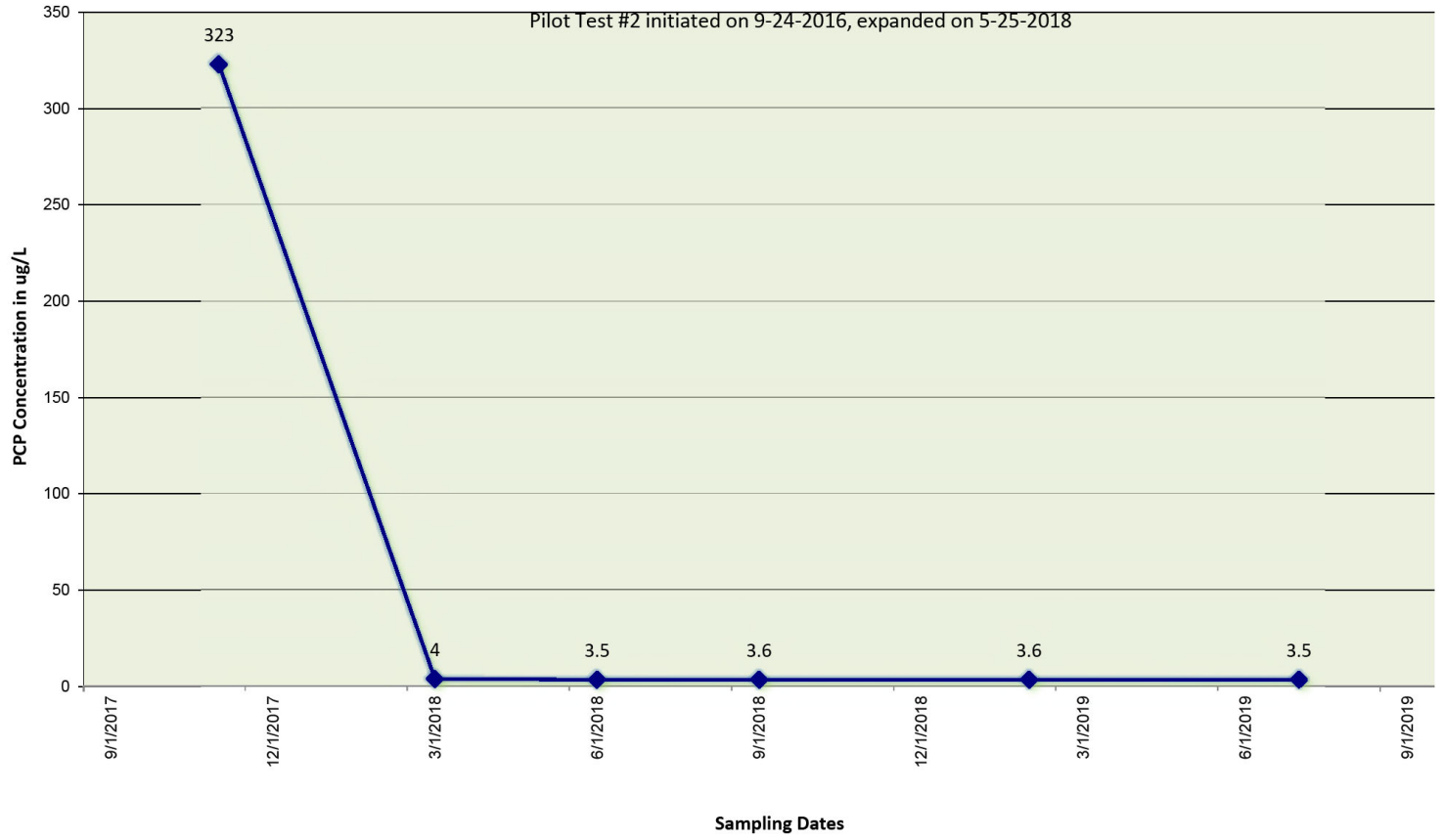
PCP Concentration vs Time @ MW-22



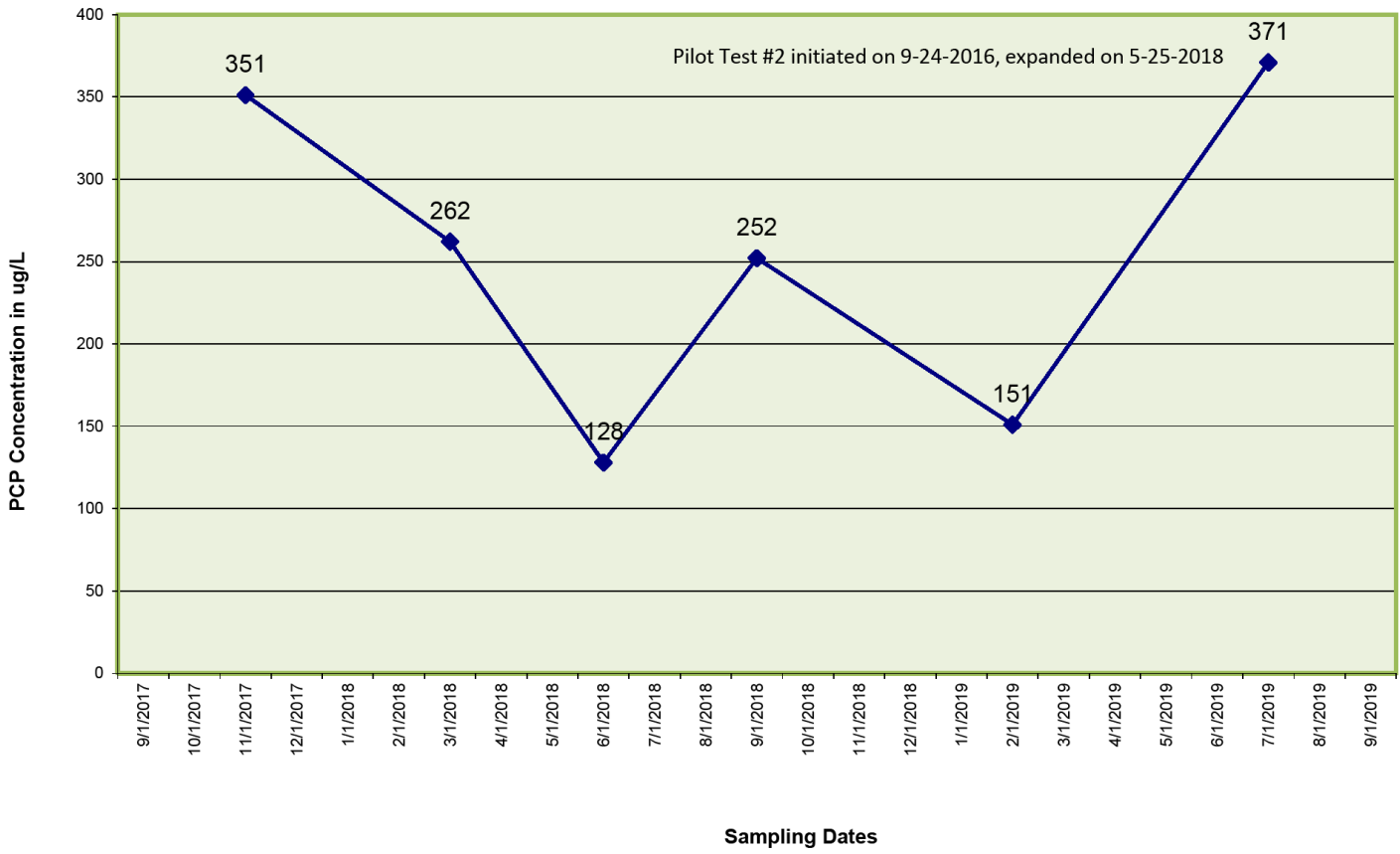
### PCP Concentration vs Time @ MW-25



### PCP Concentration vs Time @ MW-27



PCP Concentration vs Time @ MW-28





### PCP Concentration vs Time @ MW-29

