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December 29, 2015

Ms. Susanne Robbins
North Carolina Department of Environmental Quality
Division of Waste Management
127 Cardinal Drive Extension
Wilmington, North Carolina 28405-3845

Re: **Remedial Action Progress Report for September 2014 to August 2015**
**Former Flint Hills Resources, LP - North Terminal – Paraxylene Facility**
**3325 River Road, Wilmington, NC**
**NCDEQ-IHSB-ID # NONCD0002797**

Dear Ms. Robbins:

Flint Hills Resources, LP, (FHR) is submitting for your review the Remedial Action Progress Report for the period of September 2014 through August 2015 for the above referenced site. The report was prepared by FHR's consultants on this project, CATLIN Engineers and Scientists.

If you should have any questions or comments regarding the information presented in this report, please feel free to contact Mr. Michael Christopher at 281.947.0083 or me at 316.828.6104.

Sincerely,

Erin K. Blume
Flint Hills Resources, LP

Enclosure

cc: Mr. Bill Walsh – CATLIN Engineers
Mr. Michael Christopher – Koch Remediation & Environmental Services, LLC (electronic copy only)
Mr. Bruce Kirk – Chemserve Terminal

THE FOLLOWING DOCUMENT HAS NOT BEEN REVIEWED OR APPROVED BY THE INACTIVE HAZARDOUS SITES PROGRAM. ON FEBRUARY 4, 2013, PROGRAM STAFF NOTIFIED THE REMEDIATING PARTY THAT BASED ON INFORMATION PROVIDED TO THE BRANCH AND KNOWN CONTAMINANT EXPOSURE CONCERNS RELATIVE TO OTHER SITES IDENTIFIED BY THE BRANCH, THIS SITE WAS DEEMED ELIGIBLE FOR PRIVATE PARTY OVERSIGHT AND CLEANUP UNDER THE REGISTERED ENVIRONMENTAL CONSULTANT (REC) PROGRAM AND FUTURE REMEDIAL ACTIVITIES NEEDED TO BE PERFORMED UNDER THE REC PROGRAM IN ORDER TO RECEIVE APPROVAL.

# REMEDIAL ACTION PROGRESS REPORT
# FOR
# SEPTEMBER 2014 – AUGUST 2015

## FORMER FLINT HILLS RESOURCES, LP
## NORTH TERMINAL – PARAXYLENE FACILITY
## 3325 RIVER ROAD
## WILMINGTON, NORTH CAROLINA

**NCDEQ-IHSB-ID NO. NONCD0002797**

## DECEMBER 29, 2015

**PREPARED ON BEHALF OF:**

**FLINT HILLS RESOURCES, LP**

**CATLIN PROJECT NO. 201125**

**PREPARED BY:**

**CATLIN ENGINEERS AND SCIENTISTS**
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**CORPORATE GEOLOGY LICENSE NUMBER C-118**

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**REMEDIAL ACTION PROGRESS REPORT**
**FOR**
**SEPTEMBER 2014 – AUGUST 2015**

**FORMER FLINT HILLS RESOURCES, LP**
**NORTH TERMINAL – PARAXYLENE FACILITY**
**3325 RIVER ROAD**
**WILMINGTON, NORTH CAROLINA**

**DECEMBER 29, 2015**

# 1.0 INTRODUCTION

## 1.1 PURPOSE

CATLIN Engineers and Scientists (CATLIN) prepared this Remedial Action Progress Report on behalf of Flint Hills Resources, LP (FHR) for the Former FHR North Terminal - Paraxylene (PX) Facility at 3325 River Road, Wilmington, North Carolina (see Figure 1). FHR is not an owner or operator of this site, but retains the obligations regarding remediation of site soil and groundwater areas of concern that originated prior to transfer of the property. The property is currently owned by Chemserve Terminal of Wilmington, LLC (Chemserve). In this report, the Former FHR North Terminal – PX Facility project site will be referred to as the Former FHR PX Facility.

The purpose of this report is to update the status of the subsurface soil and groundwater remediation activities and to present environmental findings for the period of September 2014 through August 2015 at the Former FHR PX Facility project site. Current remediation activities at the Former FHR PX Facility are conducted in general accordance with the July 2011 Remedial Investigation Workplan and the June 2005 Revised Remedial Action Plan with minor modifications proposed within subsequent Remediation Update Reports/Remedial Action Progress Reports.

Titles of applicable remedial action documents have been listed in the table below.

| Document | Date | Author | Comments |
|---|---|---|---|
| Corrective Action Plan Addendum (CAPA) | August 9, 2002 | FHR | Document updates remediation plans for the subsurface soils and groundwater remediation at two areas of concern (PX Facility and Loading Rack Area) |
| Statement of General Agreement | October 2002 | NCDEQ APS | Regulatory agreement with August 2002 plan |
| Revised Remedial Actions for FHR North Site (Letter only) | March 5, 2004 | FHR | Revised to include chemical oxidation |
| Revised Remedial Action Plan | June 2, 2005 | FHR | Provided details for chemical oxidation application |
| Approval of June 2005 Revised Remedial Action Plan | June 7, 2005 | NCDEQ APS | Regulatory agreement with revised remedial actions |
| Request for Remedial Investigation Plan | April 28, 2011 | NCDEQ IHSB | Requested Remedial Investigation Plan be prepared |
| Remedial Investigation Workplan | July 26, 2011 | FHR | Proposed evaluation of the potential for vapor intrusion into buildings and documents on-going groundwater remediation and monitoring program |
| Response to Remedial Investigation Workplan | November 18, 2011 | NCDEQ IHSB | Requested revisions to Remedial Investigation Workplan; Requested additional soil investigation and Soil Investigation Plan |
| Soil Investigation Plan | February 20, 2012 | FHR | Proposed investigation of potential soil contamination in historical areas of concern |
| Vapor Intrusion Remedial Investigation Report | February 20, 2012 | FHR | Provided results of vapor intrusion investigation |
| Response to Soil Investigation Plan | April 23, 2012 | NCDEQ IHSB | Requested revisions to Soil Investigation Plan |
| Revised Soil Investigation Plan | June 14, 2012 | FHR | Revised the February 2012 Soil Investigation Plan per NCDEQ request |
| Remedial Action Progress Report | January 31, 2013 | FHR | Included results of the soil investigation |
| Various Remediation Update Reports/Remediation Action Progress Reports | Various | FHR | Minor modifications to the active remedial system layout and monitoring schedule are typically included within these reports with regulatory response accordingly |

NCDEQ APS – North Carolina Department of Environmental Quality Aquifer Protection Section, formerly the North Carolina Department of Environment and Natural Resources (NCDENR)

## 1.2 SITE INFORMATION

The North Terminal project site is a bulk chemical storage and transfer facility, which occupies an area of approximately thirty-seven acres. Thirty-three of the thirty-seven acres are located on the east side of River Road and are currently owned by the Chemserve Terminal of Wilmington. The remaining four (4) acres are located west of River Road and are owned by FHR. The North Terminal is subdivided into four areas of environmental concern. These areas of concern are identified as the Former FHR PX Facility, the Former FHR Gasoline/#2 Fuel Oil (GFO) Facility, the Former FHR Loading Rack Area and the FHR Water Treatment Plant (WTP) Area. The Former FHR PX Facility is identified on the attached Figure 1. Figure 2 illustrates the location of each area of environmental concern. However, due to the division of responsibilities at NCDEQ, regulatory responsibility for the Former FHR Gasoline/#2 Fuel Oil Facility, the Former FHR Loading Rack Area, and the FHR Water Treatment Plant (WTP) Area now resides with NCDEQ – Division of Waste Management (DWM) – Underground Storage Tank (UST) Section. Accordingly, FHR regularly submits Remedial Update Reports for the other areas of concern under separate cover to NCDEQ – DWM – UST Section. This report only covers activities within the Former FHR PX Facility.

The Former FHR PX Facility currently has active aboveground storage tanks (ASTs) and associated pipelines for the storage and transfer of Urea-Ammonium Nitrate Solution (UAN-32). In addition, there is an inactive truck loading rack and an active railcar loading rack area.

# 2.0 PARAXYLENE FACILITY

## 2.1 PARAXYLENE FACILITY BACKGROUND

### 2.1.1 Brief Incident History

Phillips Petroleum constructed the North Terminal - Paraxylene Facility in 1954/1955, and utilized the facility to handle PX. Paraxylene had been handled at the facility until the ownership of the facility transferred to the Chemserve Terminal of Wilmington. Since 1954/1955, there have been several product releases at the PX Facility. Former and ongoing assessment, remediation and monitoring activities since 1980 have been documented and are on file at the North Carolina Department of Environmental Quality (NCDEQ) Wilmington Regional Office (WiRO). Off-site areas of concern due to product releases by previous site owners/operators are being addressed by others. This report focuses on the PX remediation efforts within the former PX Facility from September 2014 through August 2015.

### 2.1.2 Contaminants of Concern

The NCDEQ previously agreed that dissolved PX is the primary contaminant of concern at the Former FHR PX Facility. Paraxylene is one of three xylene isomers (ortho, meta, and para). Currently, analytical laboratories do not commonly have the technology to accurately distinguish between metaxylenes and PX compounds. Since the source is known to be PX, historical soil and groundwater samples have generally been analyzed for meta/para (m/p) xylenes and the resulting concentration is assumed to be PX.

The goal for groundwater remediation is to reduce dissolved m/p xylene concentrations to the 15A North Carolina Administrative Code (NCAC) 2L.0202 North Carolina Groundwater Quality Standard (2L GWQS) of 500 micrograms per liter (µg/L) or for m/p xylene analytical data to reach an asymptotic trend. Currently, Former FHR PX Facility groundwater samples are analyzed by an independent analytical laboratory for m/p xylenes concentration in µg/L per EPA Method 8260 to monitor the dissolved PX concentrations.

### 2.1.3 Historical Corrective Actions

#### 2.1.3.1. Soil Remediation

A Soil Vapor Extraction (SVE) system to remove remnant PX from subsurface soils west of AST 301 was operated from March 21, 1995 through January 2003. Operation of the SVE system was discontinued due to the minimal m/p xylene concentrations and reduction of the concentrations in the SVE exhaust combined with an equipment failure. A description of this SVE approach and the remedial progress prior to shut down has been documented in previous Remediation Update Reports/Remedial Action Progress Reports.

A soil remediation investigation was implemented in 2012. The activities associated with this investigation were documented in the Remedial Action Progress Report dated January 31, 2013. The report documented the presence of soil contamination at the site. FHR is currently implementing a monitored natural attenuation approach to address the soil contamination in this area until the groundwater remediation efforts are completed. At which time, FHR will evaluate the soil contaminant levels in these areas and pursue the use of Land Use Restrictions (LURs) as a remedial approach for addressing the identified soil contamination.

#### 2.1.3.2. Groundwater Remediation

##### 2.1.3.2.1. Chemical Oxidation

Chemical oxidation activities were conducted from October 2004 to July 2006. These activities consisted of the application of a Fenton's reagent with a water chaser via a series of trenches located throughout the Former FHR PX Facility. The locations of these trenches were in areas that had experienced m/p xylene concentrations above 100,000 µg/L at that time. The benefits of the chemical oxidation activities have been documented in previous Remediation Update Reports/Remedial Action Progress Reports.

##### 2.1.3.2.2. Air Sparging

In situ air sparging has been utilized as a remediation alternative for dissolved phase contamination at this site since 1998. Specifically, continuous air sparging in vertical wells along the northwest property boundary (Network A) and in the area between monitoring wells 106 and 116 (Network B) began in February 1998. Additional continuous air sparge wells along the northern property boundary (Network C) began operation in January 2003. In August 2007 pulse air sparging (PAS) activities began at the site as two PAS well networks (Pulse Network 1 and Pulse Network 2) began operation. In October 2010, the PAS system was expanded with the installation of five additional PAS wells upgradient of well KRW-5 (Pulse Network 3).

#### 2.1.3.3. Free Phase Product Recovery

Historical free phase product recovery efforts included manual/passive recovery via sorbent/bailers as well as active recovery utilizing pump and treat technologies. Free phase product has not been detected at the Former FHR PX Facility since December 2004.

The remedial approach was modified in 2005 (with NCDEQ approval, in a letter dated June 7, 2005), to address the contaminant plume within the Former FHR PX Facility without pumping groundwater. The cessation of pumping was implemented for a number of reasons discussed in

previous reports. With NCDEQ approval, the pumps in the six recovery wells illustrated on Figure 3 (KRW-3, KRW-4, KRW-5, KRW-6, KRW-7 and KRW-8) were turned off in February of 2005. The recovery wells were converted to monitoring wells in November 2006.

#### 2.1.3.4. Vapor Intrusion

A Vapor Intrusion Remedial Investigation Report (dated February 20, 2012) documented the results of a vapor intrusion investigation at the Former FHR PX Facility conducted in December 2011. The sub-slab sampling results did not reveal the occurrence of a vapor intrusion pathway into on-site buildings from the groundwater contamination. The Vapor Intrusion Remedial Investigation Report recommended no additional vapor intrusion assessment be conducted at the site. The sub-slab soil gas probes were properly abandoned on June 19, 2013 in accordance with the July 2011 Remedial Investigation Workplan.

## 2.2 PARAXYLENE FACILITY - ADDITIONAL ASSESSMENT ACTIVITIES

No additional assessment activities were performed during this latest monitoring period.

## 2.3 PARAXYLENE FACILITY MONITORING PLAN

The following activities were generally conducted on a routine basis during this reporting period:

***Monthly***
The following activities were completed monthly:

- Operation of the air sparge systems were checked and system components maintained.
- Select monitoring wells were gauged in order to assist with the operations of the pulse air sparge (PAS) wells.
- Beginning in May 2015, collected a groundwater sample from monitoring well MW-20 for m/p xylenes analysis per EPA Method 8260. Please note, no sample was collected in June 2015.

***Quarterly***
The following activities were completed quarterly:

- Representative groundwater samples were obtained when possible (see Table 3) at down-gradient property boundary wells (MW-18 and MW-19) and at select locations (MW-16, MW-35, 106, 107 and KRW-

5) to assist with operation of the remedial system. Please note the November 2014 quarterly sampling event was not performed due to the unexpected death of this site's Project Manager.

***Annual (August)***

The following annual activities were completed in addition to the tasks performed on a monthly and quarterly basis:

- Representative groundwater samples were obtained from selected site monitoring wells (MW-2, MW-8, MW-11, MW-12, MW-13, MW-16, MW-18, MW-19, MW-20, MW-35, MW-36, MW-37, 101, 102, 107, 117, and KRW-5) for m/p xylenes analysis per EPA Method 8260. Monitoring wells were selected to provide data concerning PX plume boundary and high historical concentration conditions.
- In order to monitor the effectiveness of the air sparge system, dissolved oxygen concentrations were measured at selected monitoring wells (MW-2, MW-3, MW-8, MW-11, MW-12, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-32, MW-33, 101, 102, 105, 107, KRW-5, PTW-3 and PTW-6).

## 2.4 PARAXYLENE FACILITY UPDATE

### 2.4.1 Soil Remediation Update

As stated above in Section 2.1.3.1, FHR is currently implementing a natural attenuation approach to address the soil contamination documented in the January 2013 Remedial Action Progress Report.

### 2.4.2 Groundwater Remedial Approach

#### 2.4.2.1 Air Sparge

The remedial approach implemented within the Former FHR PX Facility during the time period from September 2014 through August 2015 included the use of various groundwater air sparge techniques in combination with natural attenuation.

The site air sparge system utilizes two methods (continuous air sparge and PAS) as illustrated on the attached Figure 3. Networks A, B and C were operated as a continuous sparge system during this time period. The Pulse Networks Zone 1, Zone 2 and Zone 3 were also operational during the time period of this report. Previous Remediation Update Reports/Remedial Action Progress Reports documented modifications that have historically been implemented for both the continuous and PAS networks.

From September 2014 through August 2015, the PAS and

continuous air sparge systems were operational 86% of the time. The downtime was due to inclement weather, routine maintenance and equipment repair activities that necessitated the shutdown of the PAS system.

### 2.4.3 Groundwater Field Data

#### 2.4.3.1 Groundwater Table Data

In June 2015, Paramounte Engineering, Inc. conducted a monitoring well survey consisting of updating the well locations (latitude and longitude) and top of casing elevations at all FHR monitoring wells along River Road in Wilmington, NC. On August 4, 2015, selected monitoring wells were gauged for depth to water and potential free-phase product. The monitoring wells selected for the measurement of groundwater table elevations were based on the recommendations of the previous Remedial Action Progress Report. Table 1 lists a summary of the water table data and interpolated water table isocontour elevations have been illustrated on Figure 4. The interpolated groundwater migration trend within the Former FHR PX Facility is predominantly to the west-northwest. This migration trend is consistent with historical site groundwater data.

#### 2.4.3.2 Dissolved Oxygen Data

The goal of an air sparge system is to remediate organic constituents from impacted groundwater by volatilization and biodegradation from indigenous aerobic microbes. Groundwater aerobic conditions are assessed by monitoring the dissolved oxygen (DO) levels within site monitoring wells. Aerobic conditions are generally indicated by groundwater with DO levels greater than one (1) milligram per liter (mg/L). The monitoring wells selected for the measurement of DO were based on the recommendations of the previous Remedial Action Progress Report. This data was obtained through the use of an YSI DO meter.

CATLIN collected DO concentrations in August 2015; however, after evaluating the data, it appears the DO meter was malfunctioning at the time these measurements were taken. Therefore, CATLIN collected additional DO concentration data on October 1, 2015. The latest (October 2015) groundwater DO concentration data has been summarized in Table 2 and illustrated on Figure 5.

Dissolved oxygen concentrations of monitoring wells associated with the monitoring of the air sparge networks have been summarized as follows:

| Network | Monitoring Wells | DO Range (mg/L) |
|---|---|---|
| A | MW-17, MW-18*, MW-20 | 1.38 to 5.33 |
| B | 106, 107, MW-14* | 0.70 to 1.90 |
| C | MW-32, MW-33 | 5.29 |
| Pulse Zone 1 | MW-18*, MW-19 | 3.95 to 4.05 |
| Pulse Zone 2 | 102, 105, 117, MW-2, MW-15 | 1.05 to 3.35 |
| Pulse Zone 3 | MW-12 | 3.30 |
| Background wells | MW-3, MW-16, MW-36, KRW-5 | 1.78 to 3.84 |

* Note: Monitoring well is within the influence of multiple networks.

Active remediation efforts are maintaining groundwater DO concentrations at favorable levels for aerobic biodegradation. The wide range of DO concentrations within the contaminated areas affected by sparging activities suggests the introduction of oxygen to the aquifer by sparging operation and the subsequent depletion of DO as a result of aerobic biodegradation.

### 2.4.4 Groundwater Laboratory Data

CATLIN personnel obtained the latest representative groundwater samples from selected monitoring wells on August 4, 2015. Prior to obtaining a groundwater sample, select monitoring wells were developed by removing a minimum of three well volumes utilizing a disposable bailer or pump. The monitoring wells were selected for sampling based on the recommendations of the previous Remedial Action Progress Report. All groundwater samples from the August 2015 sampling event were submitted to Pace Analytical Services, Inc. (NC Certification # 12) in Huntersville, North Carolina for analysis of dissolved m/p xylene concentrations per EPA Method 8260. A copy of the laboratory reports and Chain-of-Custody documentation has been provided in Appendix A. Results of the latest, as well as a portion of the historical, m/p xylenes concentration data have been summarized on Table 3 and graphically represented in Appendix B. The current horizontal extent of dissolved m/p xylenes within the site groundwater has been illustrated on Figure 6. While results have fluctuated over time, an evaluation of historical data summarized in Appendix B continues to illustrate an overall decreasing trend. In addition, on-going air sparge remedial efforts have been successful in remediating the migration pathway toward River Road.

As previously stated, selected monitoring wells are sampled on a

quarterly basis to monitor the downgradient boundary as well as provide information for the adjustment of the operation of the PAS system. This additional data is also included in Table 3 and illustrated on the graphs in Appendix B.

## 3.0 FUTURE ACTIVITIES AND RECOMMENDATIONS

- Monitoring and operation of air sparge systems as follows:

  1) Continue to operate Networks A, B and C as a continuous air sparge system.
  2) Continue to operate Pulse Networks 1, 2 and 3 as a PAS system.

- Continue quarterly sampling of the downgradient property boundary wells (MW-18, MW-19 and MW-20).

- Sampling at select locations as necessary to assist with operation of the remedial system.

- The number of monitoring wells recommended to be sampled were previously reduced to only wells deemed significant for the continual evaluation of remedial progress. Monitoring wells that had not changed over the past couple years were not proposed to be sampled; however, they continue to be maintained for future sampling as necessary. The following monitoring wells will be sampled to evaluate remedial progress during the next annual sampling event scheduled for August 2016:

  MW-2, MW-8, MW-10R, MW-11, MW-12, MW-13, MW-16, MW-18, MW-19, MW-20, MW-35, MW-36, MW-37, KRW-5, 106, 107, and 117 for m/p xylenes per EPA Method 8260. Monitoring wells are selected to provide data concerning PX plume boundary and historical high concentration conditions.

  <u>Groundwater at the following monitoring wells will be field gauged for DO:</u>
  MW-2, MW-3, MW-8, MW-10R, MW-11, MW-12, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-32, MW-33, MW-36, KRW-5, 102, 105, 106, 107, 117, PTW-3, PTW-6 and PTW-9.

# TABLES

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| **TYPE II MONITORING WELLS** | | | | | | |
| MW-1 | 8/2/2006 | 39.45 | 8.80 | NMT | NA | 30.65 |
| | 2/5/2007 | | 6.75 | NMT | NA | 32.70 |
| | 8/8/2007 | | 9.27 | NMT | NA | 30.18 |
| | 2/20/2008 | | 10.44 | NMT | NA | 29.01 |
| | 8/14/2008 | | 10.63 | NMT | NA | 28.82 |
| | 2/11/2009 | | 11.04 | NMT | NA | 28.41 |
| | 8/17/2009 | | 10.48 | NMT | NA | 28.97 |
| | 8/9/2010 | | 9.15 | NMT | NA | 30.30 |
| | 8/15/2011 | | 10.16 | NMT | NA | 29.29 |
| | 8/13/2012 | | 9.02 | NMT | NA | 30.43 |
| | 8/7/2013 | | 7.60 | NMT | NA | 31.85 |
| | 8/27/2014 | | 5.87 | NMT | NA | 33.58 |
| | 8/4/2015 | 38.35 | NM | | | |
| | | | | | | |
| MW-2 | 8/2/2006 | 29.11 | 3.80 | NMT | NA | 25.31 |
| | 2/5/2007 | | 2.25 | NMT | NA | 26.86 |
| | 8/8/2007 | | 4.48 | NMT | NA | 24.63 |
| | 2/20/2008 | | 5.13 | NMT | NA | 23.98 |
| | 8/14/2008 | | 5.63 | NMT | NA | 23.48 |
| | 2/11/2009 | | 5.89 | NMT | NA | 23.22 |
| | 8/17/2009 | | 5.12 | NMT | NA | 23.99 |
| | 8/9/2010 | | 4.55 | NMT | NA | 24.56 |
| | 8/15/2011 | | 5.38 | NMT | NA | 23.73 |
| | 8/13/2012 | | 3.70 | NMT | NA | 25.41 |
| | 8/7/2013 | | 2.75 | NMT | NA | 26.36 |
| | 8/27/2014 | | 1.66 | NMT | NA | 27.45 |
| | 2/9/2015 | | 2.22 | NMT | NA | 26.89 |
| | 3/24/2015 | | 2.60 | NMT | NA | 26.51 |
| | 6/15/2015 | 28.03 | 2.47 | NMT | NA | 25.56 |
| | 8/4/2015 | | 2.32 | NMT | NA | 25.71 |
| | | | | | | |
| MW-3 | 8/2/2006 | 37.84 | 8.61 | NMT | NA | 29.23 |
| | 2/5/2007 | | 6.76 | NMT | NA | 31.08 |
| | 8/8/2007 | | 9.02 | NMT | NA | 28.82 |
| | 2/20/2008 | | 10.13 | NMT | NA | 27.71 |
| | 8/14/2008 | | 10.36 | NMT | NA | 27.48 |
| | 2/11/2009 | | 10.63 | NMT | NA | 27.21 |
| | 8/17/2009 | | 10.07 | NMT | NA | 27.77 |
| | 8/9/2010 | | 8.91 | NMT | NA | 28.93 |
| | 8/15/2011 | | 9.86 | NMT | NA | 27.98 |
| | 8/13/2012 | | 9.72 | NMT | NA | 28.12 |
| | 8/7/2013 | | 7.59 | NMT | NA | 30.25 |
| | 8/24/2014 | | 6.18 | NMT | NA | 31.66 |
| | 8/4/2015 | 36.72 | NM | | | |
| | | | | | | |
| MW-4 | 8/2/2006 | 33.84 | 8.21 | NMT | NA | 25.63 |
| | 2/5/2007 | | 6.65 | NMT | NA | 27.19 |
| | 2/11/2009 | | 10.62 | NMT | NA | 23.22 |
| | 8/17/2009 | | 10.06 | NMT | NA | 23.78 |
| | 8/9/2010 | | 9.08 | NMT | NA | 24.76 |
| | 8/15/2011 | | 9.99 | NMT | NA | 23.85 |
| | 8/13/2012 | | 8.28 | NMT | NA | 25.56 |
| | 8/7/2013 | | 7.16 | NMT | NA | 26.68 |
| | 8/27/2014 | | 5.85 | NMT | NA | 27.99 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-5 | 8/2/2006 | 39.56 | 8.30 | NMT | NA | 31.26 |
| | 2/5/2007 | | 6.15 | NMT | NA | 33.41 |
| | 8/8/2007 | | 8.76 | NMT | NA | 30.80 |
| | 2/20/2008 | | 9.97 | NMT | NA | 29.59 |
| | 8/14/2008 | | 10.27 | NMT | NA | 29.29 |
| | 2/11/2009 | | 10.69 | NMT | NA | 28.87 |
| | 8/17/2009 | | 10.12 | NMT | NA | 29.44 |
| | 8/9/2010 | | 8.72 | NMT | NA | 30.84 |
| | 8/15/2011 | | 9.74 | NMT | NA | 29.82 |
| | 8/13/2012 | | 8.72 | NMT | NA | 30.84 |
| | 8/7/2013 | | 7.12 | NMT | NA | 32.44 |
| | 8/27/2014 | | 5.70 | NMT | NA | 33.86 |
| | 8/4/2015 | 38.74 | NM | | | |
| MW-6 | NA | 38.92 | NM | | | |
| | 8/9/2010 | | 7.73 | NMT | NM | 31.19 |
| | 8/7/2013 | | 9.15 | NMT | NM | 29.77 |
| | 8/4/2015 | 37.91 | NM | | | |
| MW-7 | NA | 38.71 | ABANDONED | | | |
| MW-8 | 8/2/2006 | 39.85 | 10.20 | NMT | NA | 29.65 |
| | 2/5/2007 | | 6.64 | NMT | NA | 33.21 |
| | 8/8/2007 | | 9.17 | NMT | NA | 30.68 |
| | 2/20/2008 | | 10.35 | NMT | NA | 29.50 |
| | 8/14/2008 | | 10.64 | NMT | NA | 29.21 |
| | 2/11/2009 | | 11.08 | NMT | NA | 28.77 |
| | 8/17/2009 | | 10.51 | NMT | NA | 29.34 |
| | 8/9/2010 | | 9.13 | NMT | NA | 30.72 |
| | 8/15/2011 | | 10.12 | NMT | NA | 29.73 |
| | 8/13/2012 | | 9.12 | NMT | NA | 30.73 |
| | 8/7/2013 | | 7.59 | NMT | NA | 32.26 |
| | 8/27/2014 | | 5.94 | NMT | NA | 33.91 |
| | 8/4/2015 | 38.79 | 7.29 | NMT | NA | 31.50 |
| MW-9 | NA | 36.88 | NM | | | |
| | 8/9/2010 | | 5.36 | NMT | NA | 31.52 |
| | 8/7/2013 | | 3.74 | NMT | NA | 33.14 |
| | 8/4/2015 | 35.62 | NM | | | |
| MW-10 | 8/2/2006 | 35.45 | 5.40 | NMT | NA | 30.05 |
| | 2/5/2007 | | 3.39 | NMT | NA | 32.06 |
| | 8/8/2007 | | 5.79 | NMT | NA | 29.66 |
| | 2/20/2008 | | 6.86 | NMT | NA | 28.59 |
| | 8/14/2008 | | 7.12 | NMT | NA | 28.33 |
| | 2/11/2009 | | 7.46 | NMT | NA | 27.99 |
| | 8/17/2009 | | 6.91 | NMT | NA | 28.54 |
| | 8/9/2010 | | 5.62 | NMT | NA | 29.83 |
| | 8/15/2011 | | 6.67 | NMT | NA | 28.78 |
| | 8/13/2012 | | 5.55 | NMT | NA | 29.90 |
| | 8/7/2013 | | 4.20 | NMT | NA | 31.25 |
| | 8/27/2014 | | COULD NOT LOCATE | | | |
| MW-10R | 8/4/2015 | 34.75 | 4.27 | NMT | NA | 30.48 |
| MW-11 | 8/2/2006 | 35.37 | 7.76 | NMT | NA | 27.61 |
| | 2/5/2007 | | 5.90 | NMT | NA | 29.47 |
| | 8/9/2010 | | 8.18 | NMT | NA | 27.19 |
| | 8/15/2011 | | 9.24 | NMT | NA | 26.13 |
| | 8/13/2012 | | 8.35 | NMT | NA | 27.02 |
| | 8/7/2013 | | 6.89 | NMT | NA | 28.48 |
| | 8/27/2014 | | 5.11 | NMT | NA | 30.26 |
| | 9/15/2014 | | 4.33 | NMT | NA | 31.04 |
| | 2/9/2015 | | 6.00 | NMT | NA | 29.37 |
| | 3/24/2015 | | 7.83 | NMT | NA | 27.54 |
| | 6/15/2015 | 36.30 | 6.52 | NMT | NA | 29.78 |
| | 8/4/2015 | | 6.12 | NMT | NA | 30.18 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-12 | 8/2/2006 | 35.23 | 7.29 | NMT | NA | 27.94 |
| | 2/5/2007 | | 5.41 | NMT | NA | 29.82 |
| | 8/8/2007 | | 8.07 | NMT | NA | 27.16 |
| | 2/20/2008 | | 9.31 | NMT | NA | 25.92 |
| | 8/14/2008 | | 9.72 | NMT | NA | 25.51 |
| | 2/11/2009 | | 10.08 | NMT | NA | 25.15 |
| | 8/17/2009 | | 9.25 | NMT | NA | 25.98 |
| | 8/9/2010 | | 7.84 | NMT | NA | 27.39 |
| | 8/15/2011 | | 8.92 | NMT | NA | 26.31 |
| | 8/13/2012 | | 8.80 | NMT | NA | 26.43 |
| | 8/7/2013 | | 6.13 | NMT | NA | 29.10 |
| | 8/27/2014 | | 4.53 | NMT | NA | 30.70 |
| | 2/9/2015 | | 5.32 | NMT | NA | 29.91 |
| | 3/24/2015 | | 6.27 | NMT | NA | 28.96 |
| | 6/15/2015 | 34.10 | 5.93 | NMT | NA | 28.17 |
| | 8/4/2015 | | 5.29 | NMT | NA | 28.81 |
| | | | | | | |
| MW-13 | 8/2/2006 | 33.90 | 7.50 | NMT | NA | 26.40 |
| | 2/5/2007 | | 5.83 | NMT | NA | 28.07 |
| | 8/8/2007 | | 7.97 | NMT | NA | 25.93 |
| | 2/20/2008 | | 9.55 | NMT | NA | 24.35 |
| | 8/14/2008 | | 9.74 | NMT | NA | 24.16 |
| | 2/11/2009 | | 10.23 | NMT | NA | 23.67 |
| | 8/17/2009 | | 8.48 | NMT | NA | 25.42 |
| | 8/9/2010 | | 7.54 | NMT | NA | 26.36 |
| | 8/15/2011 | | 8.24 | NMT | NA | 25.66 |
| | 8/13/2012 | | 7.20 | NMT | NA | 26.70 |
| | 8/7/2013 | | 6.37 | NMT | NA | 27.53 |
| | 8/27/2014 | | 4.71 | NMT | NA | 29.19 |
| | 8/4/2015 | 32.79 | 6.22 | NMT | NA | 26.57 |
| | | | | | | |
| MW-14 | 8/2/2006 | 29.39 | 4.87 | NMT | NA | 24.52 |
| | 2/5/2007 | | 3.53 | NMT | NA | 25.86 |
| | 8/8/2007 | | 5.60 | NMT | NA | 23.79 |
| | 2/20/2008 | | 6.38 | NMT | NA | 23.01 |
| | 8/14/2008 | | 6.66 | NMT | NA | 22.73 |
| | 2/11/2009 | | 7.08 | NMT | NA | 22.31 |
| | 8/17/2009 | | 6.56 | NMT | NA | 22.83 |
| | 8/9/2010 | | 5.72 | NMT | NA | 23.67 |
| | 8/15/2011 | | 6.44 | NMT | NA | 22.95 |
| | 8/13/2012 | | 4.85 | NMT | NA | 24.54 |
| | 8/7/2013 | | 3.99 | NMT | NA | 25.40 |
| | 8/27/2014 | | 2.81 | NMT | NA | 26.58 |
| | 2/9/2015 | | 3.58 | NMT | NA | 25.81 |
| | 3/24/2015 | | 3.21 | NMT | NA | 26.18 |
| | 6/15/2015 | 28.38 | 3.66 | NMT | NA | 24.72 |
| | | | | | | |
| MW-15 | 8/2/2006 | 28.82 | 5.83 | NMT | NA | 22.99 |
| | 2/5/2007 | | 4.47 | NMT | NA | 24.35 |
| | 8/8/2007 | | 6.74 | NMT | NA | 22.08 |
| | 2/20/2008 | | 7.26 | NMT | NA | 21.56 |
| | 8/14/2008 | | 8.17 | NMT | NA | 20.65 |
| | 2/11/2009 | | 7.69 | NMT | NA | 21.13 |
| | 8/17/2009 | | 7.31 | NMT | NA | 21.51 |
| | 8/9/2010 | | 6.52 | NMT | NA | 22.30 |
| | 8/15/2011 | | 7.05 | NMT | NA | 21.77 |
| | 8/13/2012 | | 5.27 | NMT | NA | 23.55 |
| | 8/7/2013 | | 4.55 | NMT | NA | 24.27 |
| | 8/27/2014 | | 3.23 | NMT | NA | 25.59 |
| | 8/4/2015 | 27.47 | NM | | | |
| | | | | | | |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-16 | 8/2/2006 | 28.21 | 5.61 | NMT | NA | 22.60 |
| | 2/5/2007 | | 4.31 | NMT | NA | 23.90 |
| | 8/8/2007 | | 6.45 | NMT | NA | 21.76 |
| | 2/20/2008 | | 6.87 | NMT | NA | 21.34 |
| | 8/14/2008 | | 7.20 | NMT | NA | 21.01 |
| | 2/11/2009 | | 7.55 | NMT | NA | 20.66 |
| | 8/17/2009 | | 7.08 | NMT | NA | 21.13 |
| | 8/9/2010 | | 6.50 | NMT | NA | 21.71 |
| | 8/15/2011 | | 7.06 | NMT | NA | 21.15 |
| | 8/13/2012 | | 5.41 | NMT | NA | 22.80 |
| | 3/5/2013 | | 5.63 | NMT | NA | 22.58 |
| | 5/14/2013 | | 5.48 | NMT | NA | 22.73 |
| | 8/7/2013 | | 4.77 | NMT | NA | 23.44 |
| | 11/22/2013 | | 6.16 | NMT | NA | 22.05 |
| | 3/14/2014 | | 5.76 | NMT | NA | 22.45 |
| | 5/20/2014 | | 5.17 | NMT | NA | 23.04 |
| | 8/27/2014 | | 3.62 | NMT | NA | 24.59 |
| | 2/9/2015 | | 4.38 | NMT | NA | 23.83 |
| | 3/24/2015 | | 4.68 | NMT | NA | 23.53 |
| | 6/15/2015 | 27.14 | 4.48 | NMT | NA | 22.66 |
| | 8/4/2015 | | 4.39 | NMT | NA | 22.75 |
| | | | | | | |
| MW-17 | 8/2/2006 | 25.57 | 3.35 | NMT | NA | 22.22 |
| | 2/5/2007 | | 1.41 | NMT | NA | 24.16 |
| | 8/8/2007 | | 3.28 | NMT | NA | 22.29 |
| | 2/20/2008 | | 3.88 | NMT | NA | 21.69 |
| | 8/14/2008 | | 4.30 | NMT | NA | 21.27 |
| | 2/11/2009 | | 5.41 | NMT | NA | 20.16 |
| | 8/17/2009 | | 4.65 | NMT | NA | 20.92 |
| | 8/9/2010 | | 4.28 | NMT | NA | 21.29 |
| | 8/15/2011 | | 4.86 | NMT | NA | 20.71 |
| | 8/13/2012 | | 3.33 | NMT | NA | 22.24 |
| | 8/7/2013 | | 3.11 | NMT | NA | 22.46 |
| | 8/27/2014 | | 2.36 | NMT | NA | 23.21 |
| | 8/4/2015 | 24.33 | NM | | | |
| | | | | | | |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-18 | 8/2/2006 | 26.92 | 8.60 | NMT | NA | 18.32 |
| | 2/5/2007 | | 6.50 | NMT | NA | 20.42 |
| | 8/8/2007 | | 8.95 | NMT | NA | 17.97 |
| | 2/20/2008 | | 9.81 | NMT | NA | 17.11 |
| | 8/14/2008 | | 9.60 | NMT | NA | 17.32 |
| | 2/11/2009 | | 10.15 | NMT | NA | 16.77 |
| | 8/17/2009 | | 9.73 | NMT | NA | 17.19 |
| | 11/24/2009 | | 9.12 | NMT | NA | 17.80 |
| | 1/25/2010 | | 8.04 | NMT | NA | 18.88 |
| | 6/1/2010 | | 8.97 | NMT | NA | 17.95 |
| | 8/9/2010 | | 9.18 | NMT | NA | 17.74 |
| | 11/17/2010 | | 6.90 | NMT | NA | 20.02 |
| | 2/24/2011 | | 7.75 | NMT | NA | 19.17 |
| | 3/14/2011 | | 8.18 | NMT | NA | 18.74 |
| | 3/29/2011 | | 8.61 | NMT | NA | 18.31 |
| | 4/28/2011 | | 8.98 | NMT | NA | 17.94 |
| | 5/27/2011 | | 8.81 | NMT | NA | 18.11 |
| | 7/1/2011 | | 10.19 | NMT | NA | 16.73 |
| | 8/1/2011 | | 10.28 | NMT | NA | 16.64 |
| | 8/15/2011 | | 9.92 | NMT | NA | 17.00 |
| | 9/29/2011 | | 7.02 | NMT | NA | 19.90 |
| | 10/27/2011 | | 8.05 | NMT | NA | 18.87 |
| | 11/29/2011 | | 8.78 | NMT | NA | 18.14 |
| | 12/29/2011 | | 9.43 | NMT | NA | 17.49 |
| | 3/1/2012 | | 10.02 | NMT | NA | 16.90 |
| | 3/27/2012 | | 9.72 | NMT | NA | 17.20 |
| | 5/22/2012 | | 10.42 | NMT | NA | 16.50 |
| | 8/13/2012 | | 7.85 | NMT | NA | 19.07 |
| | 11/19/2012 | | 8.49 | NMT | NA | 18.43 |
| | 3/5/2013 | | 8.61 | NMT | NA | 18.31 |
| | 5/14/2013 | | 8.42 | NMT | NA | 18.50 |
| | 8/7/2013 | | 6.77 | NMT | NA | 20.15 |
| | 11/22/2013 | | 9.09 | NMT | NA | 17.83 |
| | 3/14/2014 | | 8.48 | NMT | NA | 18.44 |
| | 5/20/2014 | | 7.56 | NMT | NA | 19.36 |
| | 8/27/2014 | | 5.21 | NMT | NA | 21.71 |
| | 2/9/2015 | | 6.80 | NMT | NA | 20.12 |
| | 3/24/2015 | | 7.71 | NMT | NA | 19.21 |
| | 6/15/2015 | 25.85 | 6.81 | NMT | NA | 19.04 |
| | 8/4/2015 | | 6.82 | NMT | NA | 19.03 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-19 | 8/2/2006 | 27.59 | 7.95 | NMT | NA | 19.64 |
| | 2/5/2007 | | 8.70 | NMT | NA | 18.89 |
| | 3/30/2007 | | 9.38 | NMT | NA | 18.21 |
| | 5/25/2007 | | 10.80 | NMT | NA | 16.79 |
| | 7/2/2007 | | 10.66 | NMT | NA | 16.93 |
| | 8/8/2007 | | 9.98 | NMT | NA | 17.61 |
| | 10/26/2007 | | 10.67 | NMT | NA | 16.92 |
| | 12/5/2007 | | 11.15 | NMT | NA | 16.44 |
| | 2/20/2008 | | 10.50 | NMT | NA | 17.09 |
| | 4/30/2008 | | 10.58 | NMT | NA | 17.01 |
| | 5/28/2008 | | 9.95 | NMT | NA | 17.64 |
| | 6/30/2008 | | 10.72 | NMT | NA | 16.87 |
| | 7/31/2008 | | 3.45 | NMT | NA | 24.14 |
| | 8/14/2008 | | 10.65 | NMT | NA | 16.94 |
| | 9/29/2008 | | 9.88 | NMT | NA | 17.71 |
| | 10/30/2008 | | 10.50 | NMT | NA | 17.09 |
| | 12/1/2008 | | 9.88 | NMT | NA | 17.71 |
| | 2/11/2009 | | 10.80 | NMT | NA | 16.79 |
| | 8/17/2009 | | 10.50 | NMT | NA | 17.09 |
| | 11/24/2009 | | 10.20 | NMT | NA | 17.39 |
| | 1/25/2010 | | 8.38 | NMT | NA | 19.21 |
| | 6/1/2010 | | 9.78 | NMT | NA | 17.81 |
| | 8/9/2010 | | DRY | NA | NA | NA |
| | 11/17/2010 | | 4.65 | NMT | NA | 22.94 |
| | 2/24/2011 | | 8.46 | NMT | NA | 19.13 |
| | 3/14/2011 | | 9.14 | NMT | NA | 18.45 |
| | 3/29/2011 | | 9.40 | NMT | NA | 18.19 |
| | 4/28/2011 | | 9.65 | NMT | NA | 17.94 |
| | 5/27/2011 | | 9.32 | NMT | NA | 18.27 |
| | 7/1/2011 | | 10.87 | NMT | NA | 16.72 |
| | 8/1/2011 | | 10.93 | NMT | NA | 16.66 |
| | 8/15/2011 | | 10.40 | NMT | NA | 17.19 |
| | 9/29/2011 | | 7.70 | NMT | NA | 19.89 |
| | 10/27/2011 | | 8.73 | NMT | NA | 18.86 |
| | 11/29/2011 | | 9.74 | NMT | NA | 17.85 |
| | 12/29/2011 | | 10.71 | NMT | NA | 16.88 |
| | 3/1/2012 | | 10.19 | NMT | NA | 17.40 |
| | 3/27/2012 | | 10.60 | NMT | NA | 16.99 |
| | 5/22/2012 | | 11.24 | NMT | NA | 16.35 |
| | 8/13/2012 | | 8.25 | NMT | NA | 19.34 |
| | 11/19/2012 | | 8.04 | NMT | NA | 19.55 |
| | 3/5/2013 | | 9.48 | NMT | NA | 18.11 |
| | 5/14/2013 | | 8.10 | NMT | NA | 19.49 |
| | 8/7/2013 | | 7.67 | NMT | NA | 19.92 |
| | 11/22/2013 | | 9.75 | NMT | NA | 17.84 |
| | 3/14/2014 | | 9.61 | NMT | NA | 17.98 |
| | 5/20/2014 | | 8.65 | NMT | NA | 18.94 |
| | 8/27/2014 | | 5.81 | NMT | NA | 21.78 |
| | 2/9/2015 | | 4.20 | NMT | NA | 23.39 |
| | 3/3/2015 | | 6.92 | NMT | NA | 20.67 |
| | 3/24/2015 | | 7.84 | NMT | NA | 19.75 |
| | 6/15/2015 | 26.53 | 7.37 | NMT | NA | 19.16 |
| | 8/4/2015 | | 5.89 | NMT | NA | 20.64 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-20 | 8/2/2006 | 29.29 | 10.51 | NMT | NA | 18.78 |
| | 2/5/2007 | | 8.62 | NMT | NA | 20.67 |
| | 8/8/2007 | | 11.28 | NMT | NA | 18.01 |
| | 2/20/2008 | | 11.82 | NMT | NA | 17.47 |
| | 8/14/2008 | | 11.52 | NMT | NA | 17.77 |
| | 2/11/2009 | | 12.47 | NMT | NA | 16.82 |
| | 8/17/2009 | | 11.96 | NMT | NA | 17.33 |
| | 8/9/2010 | | 8.87 | NMT | NA | 20.42 |
| | 8/15/2011 | | 12.03 | NMT | NA | 17.26 |
| | 8/13/2012 | | 9.61 | NMT | NA | 19.68 |
| | 8/7/2013 | | 8.62 | NMT | NA | 20.67 |
| | 8/27/2014 | | 6.67 | NMT | NA | 22.62 |
| | 7/28/2015 | 28.29 | 8.50 | NMT | NA | 19.79 |
| | 8/25/2015 | | 9.45 | NMT | NA | 18.84 |
| | | | | | | |
| MW-28 | 8/2/2006 | 36.41 | 6.63 | NMT | NA | 29.78 |
| | 2/5/2007 | | 4.38 | NMT | NA | 32.03 |
| | 8/8/2007 | | 7.66 | NMT | NA | 28.75 |
| | 2/20/2008 | | 8.96 | NMT | NA | 27.45 |
| | 8/14/2008 | | 8.95 | NMT | NA | 27.46 |
| | 2/11/2009 | | 9.27 | NMT | NA | 27.14 |
| | 8/17/2009 | | 8.71 | NMT | NA | 27.70 |
| | 8/9/2010 | | 7.59 | NMT | NA | 28.82 |
| | 8/15/2011 | | 8.52 | NMT | NA | 27.89 |
| | 8/13/2012 | | 7.90 | NMT | NA | 28.51 |
| | 8/7/2013 | | 5.98 | NMT | NA | 30.43 |
| | 8/27/2014 | | 4.43 | NMT | NA | 31.98 |
| | 8/4/2015 | 35.30 | NM | | | |
| | | | | | | |
| MW-30 | NA | 35.20 | NOT LOCATED | | | |
| | | | | | | |
| MW-32 | 8/2/2006 | 33.69 | 7.78 | NMT | NA | 25.91 |
| | 2/5/2007 | | 6.16 | NMT | NA | 27.53 |
| | 8/8/2007 | | 9.35 | NMT | NA | 24.34 |
| | 2/20/2008 | | 9.76 | NMT | NA | 23.93 |
| | 8/14/2008 | | 10.05 | NMT | NA | 23.64 |
| | 2/11/2009 | | 10.40 | NMT | NA | 23.29 |
| | 8/17/2009 | | 9.87 | NMT | NA | 23.82 |
| | 8/9/2010 | | 8.70 | NMT | NA | 24.99 |
| | 8/15/2011 | | 9.67 | NMT | NA | 24.02 |
| | 8/13/2012 | | 8.15 | NMT | NA | 25.54 |
| | 8/7/2013 | | 6.97 | NMT | NA | 26.72 |
| | 8/27/2014 | | 5.23 | NMT | NA | 28.46 |
| | 8/4/2015 | 32.67 | NM | | | |
| | | | | | | |
| MW-33 | 8/2/2006 | 35.16 | 9.41 | NMT | NA | 25.75 |
| | 2/5/2007 | | 5.51 | NMT | NA | 29.65 |
| | 8/8/2007 | | 11.55 | NMT | NA | 23.61 |
| | 2/20/2008 | | 10.48 | NMT | NA | 24.68 |
| | 8/14/2008 | | 10.75 | NMT | NA | 24.41 |
| | 2/11/2009 | | 11.40 | NMT | NA | 23.76 |
| | 8/17/2009 | | 10.67 | NMT | NA | 24.49 |
| | 8/9/2010 | | 8.48 | NMT | NA | 26.68 |
| | 8/15/2011 | | 10.53 | NMT | NA | 24.63 |
| | 8/7/2013 | | 8.18 | NMT | NA | 26.98 |
| | 8/4/2015 | 34.11 | NM | | | |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| MW-34 | 8/2/2006 | 33.89 | 6.64 | NMT | NA | 27.25 |
| | 2/5/2007 | | 4.97 | NMT | NA | 28.92 |
| | 8/8/2007 | | 7.68 | NMT | NA | 26.21 |
| | 2/20/2008 | | 8.83 | NMT | NA | 25.06 |
| | 8/14/2008 | | 9.00 | NMT | NA | 24.89 |
| | 9/9/2008 | | 9.02 | NMT | NA | 24.87 |
| | 2/11/2009 | | 9.42 | NMT | NA | 24.47 |
| | 8/17/2009 | | 8.77 | NMT | NA | 25.12 |
| | 8/9/2010 | | 7.52 | NMT | NA | 26.37 |
| | 8/15/2011 | | 8.54 | NMT | NA | 25.35 |
| | 8/13/2012 | | 6.93 | NMT | NA | 26.96 |
| | 8/7/2013 | | 5.55 | NMT | NA | 28.34 |
| | 8/27/2014 | | 3.89 | NMT | NA | 30.00 |
| | 8/4/2015 | 32.08 | NM | | | |
| MW-35 | 8/2/2006 | 28.41 | 2.70 | NMT | NA | 25.71 |
| | 2/5/2007 | | 1.75 | NMT | NA | 26.66 |
| | 8/8/2007 | | 3.27 | NMT | NA | 25.14 |
| | 2/20/2008 | | 3.67 | NMT | NA | 24.74 |
| | 8/14/2008 | | 4.17 | NMT | NA | 24.24 |
| | 2/11/2009 | | 4.50 | NMT | NA | 23.91 |
| | 8/17/2009 | | 4.03 | NMT | NA | 24.38 |
| | 8/9/2010 | | 3.37 | NMT | NA | 25.04 |
| | 8/15/2011 | | 3.99 | NMT | NA | 24.42 |
| | 8/13/2012 | | 2.30 | NMT | NA | 26.11 |
| | 3/5/2013 | | 2.72 | NMT | NA | 25.69 |
| | 5/14/2013 | | 2.56 | NMT | NA | 25.85 |
| | 8/7/2013 | | 1.64 | NMT | NA | 26.77 |
| | 11/22/2013 | | 3.13 | NMT | NA | 25.28 |
| | 3/14/2014 | | 2.88 | NMT | NA | 25.53 |
| | 5/20/2014 | | 2.19 | NMT | NA | 26.22 |
| | 8/27/2014 | | 1.35 | NMT | NA | 27.06 |
| | 3/3/2015 | | 1.00 | NMT | NA | 27.41 |
| | 8/4/2015 | 25.29 | 1.38 | NMT | NA | 23.91 |
| MW-36 | 8/2/2006 | 35.46 | 7.90 | NMT | NA | 27.56 |
| | 2/5/2007 | | 4.35 | NMT | NA | 31.11 |
| | 8/8/2007 | | 6.21 | NMT | NA | 29.25 |
| | 2/20/2008 | | 7.25 | NMT | NA | 28.21 |
| | 8/14/2008 | | 7.42 | NMT | NA | 28.04 |
| | 2/11/2009 | | 7.80 | NMT | NA | 27.66 |
| | 8/17/2009 | | 7.24 | NMT | NA | 28.22 |
| | 8/9/2010 | | 6.17 | NMT | NA | 29.29 |
| | 8/15/2011 | | 7.01 | NMT | NA | 28.45 |
| | 8/13/2012 | | 5.98 | NMT | NA | 29.48 |
| | 8/7/2013 | | 5.04 | NMT | NA | 30.42 |
| | 8/4/2015 | 37.84 | 8.29 | NMT | NA | 29.55 |
| MW-37 | 8/2/2006 | 36.26 | 7.10 | NMT | NA | 29.16 |
| | 2/5/2007 | | 3.87 | NMT | NA | 32.39 |
| | 8/8/2007 | | 6.30 | NMT | NA | 29.96 |
| | 2/20/2008 | | 6.85 | NMT | NA | 29.41 |
| | 8/14/2008 | | Dry | NMT | NA | NA |
| | 2/11/2009 | | Dry | NMT | NA | NA |
| | 8/17/2009 | | 6.97 | NMT | NA | 29.29 |
| | 8/9/2010 | | 6.18 | NMT | NA | 30.08 |
| | 8/15/2011 | | 7.00 | NMT | NA | 29.26 |
| | 8/13/2012 | | 6.02 | NMT | NA | 30.24 |
| | 8/7/2013 | | 4.71 | NMT | NA | 31.55 |
| | 9/3/2014 | | 3.01 | NMT | NA | 33.25 |
| | 8/4/2015 | 35.22 | 4.70 | NMT | NA | 30.52 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| 101 | 8/2/2006 | 28.88 | 3.55 | NMT | NA | 25.33 |
| | 2/5/2007 | | 2.25 | NMT | NA | 26.63 |
| | 8/8/2007 | | 4.17 | NMT | NA | 24.71 |
| | 2/20/2008 | | 4.78 | NMT | NA | 24.10 |
| | 8/14/2008 | | 5.13 | NMT | NA | 23.75 |
| | 2/11/2009 | | 5.45 | NMT | NA | 23.43 |
| | 8/17/2009 | | 4.88 | NMT | NA | 24.00 |
| | 8/9/2010 | | 4.18 | NMT | NA | 24.70 |
| | 8/15/2011 | | 5.03 | NMT | NA | 23.85 |
| | 8/13/2012 | | 3.35 | NMT | NA | 25.53 |
| | 8/7/2013 | | 2.66 | NMT | NA | 26.22 |
| | 9/4/2014 | | 1.93 | NMT | NA | 26.95 |
| | 8/4/2015 | 27.81 | NM | | | |
| 102 | 8/2/2006 | 29.88 | 4.39 | NMT | NA | 25.49 |
| | 2/5/2007 | | 2.90 | NMT | NA | 26.98 |
| | 8/8/2007 | | 5.06 | NMT | NA | 24.82 |
| | 2/20/2008 | | 5.75 | NMT | NA | 24.13 |
| | 8/14/2008 | | 6.18 | NMT | NA | 23.70 |
| | 2/11/2009 | | 6.42 | NMT | NA | 23.46 |
| | 8/17/2009 | | 5.88 | NMT | NA | 24.00 |
| | 8/9/2010 | | 5.10 | NMT | NA | 24.78 |
| | 8/15/2011 | | 5.99 | NMT | NA | 23.89 |
| | 8/13/2012 | | 4.26 | NMT | NA | 25.62 |
| | 8/7/2013 | | 3.44 | NMT | NA | 26.44 |
| | 8/27/2014 | | 2.38 | NMT | NA | 27.50 |
| | 9/4/2014 | | 2.62 | NMT | NA | 27.26 |
| | 8/4/2015 | 29.00 | NM | | | |
| 104 | 8/17/2009 | 28.10 | 4.68 | NMT | NA | 23.42 |
| | 8/9/2010 | | 3.95 | NMT | NA | 24.15 |
| | 8/13/2012 | | 3.15 | NMT | NA | 24.95 |
| | 8/7/2013 | | 2.44 | NMT | NA | 25.66 |
| | 8/27/2014 | | 1.55 | NMT | NA | 26.55 |
| | 8/4/2015 | 27.09 | NM | | | |
| 105* | 8/2/2006 | 29.51 | 7.12 | NMT | NA | 22.39 |
| | 2/5/2007 | | 2.81 | NMT | NA | 26.70 |
| | 8/8/2007 | | 4.84 | NMT | NA | 24.67 |
| | 2/20/2008 | | 5.43 | NMT | NA | 24.08 |
| | 8/14/2008 | | 5.90 | NMT | NA | 23.61 |
| | 2/11/2009 | | Unable to gauge well - obstruction present. | | | |
| | 8/17/2009 | | Well damaged - Previous top of casing measurment no longer valid | | | |
| | 8/9/2010 | 29.31 | 4.77 | NMT | NA | 24.54 |
| | 8/15/2011 | | 5.63 | NMT | NA | 23.68 |
| | 8/13/2012 | | 3.91 | NMT | NA | 25.40 |
| | 8/7/2013 | | 3.13 | NMT | NA | 26.18 |
| | 8/27/2014 | | 2.14 | NMT | NA | 27.17 |
| | 8/4/2015 | 28.43 | NM | | | |
| 106* | 8/2/2006 | 26.51 | 1.35 | NMT | NA | 25.16 |
| | 2/5/2007 | | 0.15 | NMT | NA | 26.36 |
| | 8/8/2007 | | 2.02 | NMT | NA | 24.49 |
| | 2/20/2008 | | 2.68 | NMT | NA | 23.83 |
| | 8/14/2008 | | 3.08 | NMT | NA | 23.43 |
| | 2/11/2009 | | 3.38 | NMT | NA | 23.13 |
| | 8/17/2009 | | 2.81 | NMT | NA | 23.70 |
| | 8/9/2010 | 26.31 | 2.05 | NMT | NA | 24.26 |
| | 8/15/2011 | | 2.89 | NMT | NA | 23.42 |
| | 8/13/2012 | | 1.23 | NMT | NA | 25.08 |
| | 3/5/2013 | | 1.44 | NMT | NA | 24.87 |
| | 5/14/2013 | | 1.24 | NMT | NA | 25.07 |
| | 8/7/2013 | | 0.47 | NMT | NA | 25.84 |
| | 11/22/2013 | | 1.85 | NMT | NA | 24.46 |
| | 3/14/2014 | | 1.76 | NMT | NA | 24.55 |
| | 5/20/2014 | | 1.01 | NMT | NA | 25.30 |
| | 8/27/2014 | | 0.00 | NMT | NA | 26.31 |
| | 8/4/2015 | 25.40 | NM | | | |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| 107 | 8/2/2006 | 31.33 | 5.05 | NMT | NA | 26.28 |
| | 2/5/2007 | | 3.78 | NMT | NA | 27.55 |
| | 8/8/2007 | | 5.76 | NMT | NA | 25.57 |
| | 2/20/2008 | | 6.31 | NMT | NA | 25.02 |
| | 8/14/2008 | | 6.69 | NMT | NA | 24.64 |
| | 2/11/2009 | | 7.07 | NMT | NA | 24.26 |
| | 8/17/2009 | | 6.56 | NMT | NA | 24.77 |
| | 8/9/2010 | | 5.84 | NMT | NA | 25.49 |
| | 8/15/2011 | | 6.51 | NMT | NA | 24.82 |
| | 8/13/2012 | | 4.91 | NMT | NA | 26.42 |
| | 3/5/2013 | | 3.25 | NMT | NA | 28.08 |
| | 5/14/2013 | | 4.99 | NMT | NA | 26.34 |
| | 8/7/2013 | | 4.20 | NMT | NA | 27.13 |
| | 3/14/2014 | | 3.03 | NMT | NA | 28.30 |
| | 5/20/2014 | | 2.43 | NMT | NA | 28.90 |
| | 8/27/2014 | | NM - NEEDS REPAIRED | | | |
| | 9/15/2014 | | 3.35 | NMT | NA | 27.98 |
| | 3/3/2015 | | 1.24 | NMT | NA | 30.09 |
| | 8/4/2015 | 26.12 | 1.46 | NMT | NA | 24.66 |
| 108 | 8/2/2006 | 31.50 | 6.85 | NMT | NA | 24.65 |
| | 2/5/2007 | | 5.08 | NMT | NA | 26.42 |
| | 8/8/2007 | | 7.31 | NMT | NA | 24.19 |
| | 2/20/2008 | | 8.07 | NMT | NA | 23.43 |
| | 8/14/2008 | | 8.31 | NMT | NA | 23.19 |
| | 2/11/2009 | | 8.75 | NMT | NA | 22.75 |
| | 8/17/2009 | | 8.22 | NMT | NA | 23.28 |
| | 8/9/2010 | | 7.42 | NMT | NA | 24.08 |
| | 8/15/2011 | | 8.09 | NMT | NA | 23.41 |
| | 8/13/2012 | | 6.50 | NMT | NA | 25.00 |
| | 8/7/2013 | | 5.61 | NMT | NA | 25.89 |
| | 3/24/2015 | | 5.24 | NMT | NA | 26.26 |
| | 6/15/2015 | 30.19 | 5.11 | NMT | NA | 25.08 |
| 113 | 8/2/2006 | 33.90 | 9.10 | NMT | NA | 24.80 |
| | 2/5/2007 | | 7.51 | NMT | NA | 26.39 |
| | 8/8/2007 | | 9.91 | NMT | NA | 23.99 |
| | 2/20/2008 | | 10.40 | NMT | NA | 23.50 |
| | 8/14/2008 | | 11.02 | NMT | NA | 22.88 |
| | 2/11/2009 | | 11.24 | NMT | NA | 22.66 |
| | 8/17/2009 | | 10.77 | NMT | NA | 23.13 |
| | 8/9/2010 | | 9.80 | NMT | NA | 24.10 |
| | 8/15/2011 | | 10.68 | NMT | NA | 23.22 |
| | 8/13/2012 | | 9.95 | NMT | NA | 23.95 |
| | 8/7/2013 | | 8.04 | NMT | NA | 25.86 |
| | 8/27/2014 | | 6.60 | NMT | NA | 27.30 |
| | 8/4/2015 | 32.87 | NM | | | |
| 114 | NA | 34.74 | NM | | | |
| | 8/9/2010 | | Dry | NA | NA | NA |
| | 8/13/2012 | | 9.32 | NMT | NA | 25.42 |
| | 8/7/2013 | | 8.32 | NMT | NA | 26.42 |
| | 8/4/2015 | 33.77 | NM | | | |
| 116 | NA | 28.76 | NM | | | |
| | 8/9/2010 | | 9.05 | NMT | NA | 19.71 |
| | 8/7/2013 | | 7.46 | NMT | NA | 21.30 |
| | 8/27/2014 | | 6.02 | NMT | NA | 22.74 |
| | 8/4/2015 | 27.76 | NM | | | |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| 117 | 8/2/2006 | 31.33 | 9.10 | NMT | NA | 22.23 |
| | 2/5/2007 | | 7.65 | NMT | NA | 23.68 |
| | 8/8/2007 | | 9.90 | NMT | NA | 21.43 |
| | 2/20/2008 | | 10.43 | NMT | NA | 20.90 |
| | 8/14/2008 | | 10.90 | NMT | NA | 20.43 |
| | 2/11/2009 | | 10.95 | NMT | NA | 20.38 |
| | 8/17/2009 | | 10.51 | NMT | NA | 20.82 |
| | 8/9/2010 | | 9.73 | NMT | NA | 21.60 |
| | 8/15/2011 | | 10.78 | NMT | NA | 20.55 |
| | 8/13/2012 | | 9.52 | NMT | NA | 21.81 |
| | 8/7/2013 | | 7.91 | NMT | NA | 23.42 |
| | 8/27/2014 | | 6.42 | NMT | NA | 24.91 |
| | 3/24/2015 | | 7.94 | NMT | NA | 23.39 |
| | 6/15/2015 | 30.17 | 7.60 | NMT | NA | 22.57 |
| | 8/4/2015 | | 7.61 | NMT | NA | 22.56 |
| 119 | 8/2/2006 | 26.68 | 4.71 | NMT | NA | 21.97 |
| | 2/5/2007 | | 3.10 | NMT | NA | 23.58 |
| | 8/8/2007 | | 4.85 | NMT | NA | 21.83 |
| | 2/20/2008 | | 4.97 | NMT | NA | 21.71 |
| | 8/14/2008 | | 5.72 | NMT | NA | 20.96 |
| | 2/11/2009 | | 6.07 | NMT | NA | 20.61 |
| | 8/17/2009 | | 5.87 | NMT | NA | 20.81 |
| | 8/9/2010 | | 5.31 | NMT | NA | 21.37 |
| | 8/15/2011 | | 5.93 | NMT | NA | 20.75 |
| | 8/13/2012 | | 4.24 | NMT | NA | 22.44 |
| | 8/7/2013 | | 4.02 | NMT | NA | 22.66 |
| | 8/27/2014 | | 3.22 | NMT | NA | 23.46 |
| | 8/4/2015 | 25.79 | NM | | | |
| 121 | NA | 29.20 | NM | | | |
| | 8/9/2010 | | 5.33 | NMT | NA | 23.87 |
| | 8/13/2012 | | 4.87 | NMT | NA | 24.33 |
| | 8/7/2013 | | 3.55 | NMT | NA | 25.65 |
| | 8/4/2015 | 28.28 | NM | | | |
| PTW-1 | NA | 36.67 | NM | | | |
| | 8/13/2012 | | 8.11 | NMT | NA | 28.56 |
| | 8/4/2015 | 35.63 | NM | | | |
| PTW-2 | NA | 35.63 | NM | | | |
| PTW-3 | NA | 36.68 | NM | | | |
| | 8/13/2012 | | 8.47 | NMT | NA | 28.21 |
| | 8/4/2015 | 35.60 | NM | | | |
| PTW-4 | NA | 35.33 | NM | | | |
| PTW-5 | NA | 35.52 | NM | | | |
| PTW-6 | NA | 36.42 | NM | | | |
| | 8/13/2012 | | 8.20 | NMT | NA | 28.22 |
| | 8/4/2015 | 35.38 | NM | | | |
| PTW-7 | NA | 35.66 | NM | | | |
| PTW-8 | NA | 35.66 | NM | | | |
| PTW-9 | NA | 36.90 | NM | | | |
| | 8/13/2012 | | 8.28 | NMT | NA | 28.62 |
| | 3/24/2015 | | 6.64 | NMT | NA | 30.26 |
| | 6/15/2015 | 35.82 | 6.40 | NMT | NA | 29.42 |

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATIONS AT SELECTED MONITORING WELLS – AUGUST 2006 THROUGH AUGUST 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| DATA POINT | DATE DATA COLLECTED | TOP OF CASING ELEVATION (in feet) | DEPTH TO WATER (in feet) | FREE-PHASE PRODUCT THICKNESS (in feet) | SPECIFIC GRAVITY ADJUSTMENT | WATER TABLE ELEVATION (in feet) |
|---|---|---|---|---|---|---|
| **TYPE III MONITORING WELLS** | | | | | | |
| TMW-1 | NA | 30.43 | NM | | | |
| | 8/9/2010 | | 11.40 | NMT | NA | 19.03 |
| | 8/13/2012 | | 10.52 | NMT | NA | 19.91 |
| | 8/7/2013 | | 9.63 | NMT | NA | 20.80 |
| | 8/4/2015 | 29.36 | NM | | | |
| TMW-2 | NA | 35.40 | NM | | | |
| | 8/9/2010 | | 6.52 | NMT | NA | 28.88 |
| | 8/13/2012 | | 6.75 | NMT | NA | 28.65 |
| | 8/7/2013 | | 5.02 | NMT | NA | 30.38 |
| | 8/4/2015 | 34.39 | NM | | | |
| **FORMER RECOVERY WELLS CONVERTED TO MONITORING WELLS** | | | | | | |
| RW-2 | NA | 36.18 | ABANDONED | | | |
| KRW-3 | NA | 29.07 | NM | | | |
| | 8/9/2010 | | 7.80 | NMT | NA | 21.27 |
| | 8/13/2012 | | 7.01 | NMT | NA | 22.06 |
| | 8/7/2013 | | 5.01 | NMT | NA | 24.06 |
| | 8/4/2015 | 26.47 | NM | | | |
| KRW-4 | NA | 27.82 | NM | | | |
| | 8/9/2010 | | 2.31 | NMT | NA | 25.51 |
| | 8/13/2012 | | 1.25 | NMT | NA | 26.57 |
| | 8/7/2013 | | 0.66 | NMT | NA | 27.16 |
| | 8/4/2015 | 25.35 | NM | | | |
| KRW-5 | NA | 32.58 | NM | | | |
| | 2/11/2009 | | 8.29 | NMT | NA | 24.29 |
| | 8/17/2009 | | 7.74 | NMT | NA | 24.84 |
| | 8/9/2010 | | 6.81 | NMT | NA | 25.77 |
| | 8/15/2011 | | 7.72 | NMT | NA | 24.86 |
| | 8/13/2012 | | 6.00 | NMT | NA | 26.58 |
| | 3/5/2013 | | 6.16 | NMT | NA | 26.42 |
| | 5/14/2013 | | 5.93 | NMT | NA | 26.65 |
| | 8/7/2013 | | 4.95 | NMT | NA | 27.63 |
| | 11/22/2013 | | 6.55 | NMT | NA | 26.03 |
| | 3/14/2014 | | 6.91 | NMT | NA | 25.67 |
| | 5/20/2014 | | 5.64 | NMT | NA | 26.94 |
| | 8/27/2014 | | 3.60 | NMT | NA | 28.98 |
| | 3/3/2015 | | 4.25 | NMT | NA | 28.33 |
| | 8/4/2015 | 29.92 | 4.67 | NMT | NA | 25.25 |
| KRW-6 | NA | 30.90 | NM | | | |
| | 8/9/2010 | | 7.30 | NMT | NA | 23.60 |
| | 8/13/2012 | | 7.04 | NMT | NA | 23.86 |
| | 8/7/2013 | | 5.29 | NMT | NA | 25.61 |
| | 8/27/2014 | | 3.94 | NMT | NA | 26.96 |
| | 8/4/2015 | 28.22 | NM | | | |
| KRW-7 | NA | 29.47 | NM | | | |
| | 8/9/2010 | | 5.03 | NMT | NA | 24.44 |
| | 8/13/2012 | | 3.97 | NMT | NA | 25.50 |
| | 8/7/2013 | | 3.25 | NMT | NA | 26.22 |
| | 8/4/2015 | 26.74 | NM | | | |
| KRW-8 | NA | 38.01 | NM | | | |
| | 8/9/2010 | | 8.42 | NMT | NA | 29.59 |
| | 8/13/2012 | | 8.50 | NMT | NA | 29.51 |
| | 8/7/2013 | | 6.98 | NMT | NA | 31.03 |
| | 8/4/2015 | 34.56 | NM | | | |

Notes:
Specific gravity adjustment for Paraxylene is 0.86.
NMT = No Measurable Thickness
NM = Not Measured
NA = Not Applicable
Top of Casing Elevations surveyed by Paramounte Engineering, Inc. in June 2015
* Top of Casing measurement was changed due to damage to the well.

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

## PARAXYLENE FACILITY

**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| 101 | 8/9/2007 | 2.09 |
| | 2/25/2008 | 0.49 |
| | 8/18/2008 | 0.10 |
| | 2/16/2009 | 0.56 |
| | 9/4/2014 | 0.32 |
| 102 | 8/9/2007 | 1.10 |
| | 2/25/2008 | 0.41 |
| | 8/18/2008 | 0.12 |
| | 2/16/2009 | 0.54 |
| | 8/25/2009 | 0.78 |
| | 8/16/2010 | 0.41 |
| | 8/17/2011 | 0.79 |
| | 8/31/2012 | 0.39 |
| | 8/12/2013 | 0.07 |
| | 9/4/2014 | 1.04 |
| | 8/5/2015 | 0.13 |
| | 10/1/2015 | 2.41 |
| 104 | 8/25/2009 | 0.61 |
| 105 | 8/8/2006 | 0.85 |
| | 2/8/2007 | 0.80 |
| | 8/9/2007 | 1.49 |
| | 2/25/2008 | 0.19 |
| | 8/18/2008 | 0.52 |
| | 8/25/2009 | 0.83 |
| | 8/16/2010 | 0.25 |
| | 8/17/2011 | 0.59 |
| | 8/31/2012 | 0.20 |
| | 8/12/2013 | 0.07 |
| | 9/2/2014 | 0.72 |
| | 8/5/2015 | 0.12 |
| 106 | 8/8/2007 | 1.62 |
| | 2/27/2008 | 0.66 |
| | 8/18/2008 | 0.32 |
| | 2/16/2009 | 0.71 |
| | 8/25/2009 | 0.76 |
| | 8/16/2010 | 0.29 |
| | 8/17/2011 | 0.65 |
| | 8/31/2012 | 0.22 |
| | 8/12/2013 | 0.36 |
| | 9/2/2014 | 0.69 |
| | 8/5/2015 | 0.10 |
| 107 | 8/8/2007 | 0.86 |
| | 2/27/2008 | 0.43 |
| | 8/18/2008 | 0.20 |
| | 2/16/2009 | 0.56 |
| | 8/25/2009 | 0.67 |
| | 8/16/2010 | 0.40 |
| | 8/17/2011 | 1.41 |
| | 8/12/2013 | 0.07 |
| | 9/2/2014 | 0.68 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 1.90 |

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

## PARAXYLENE FACILITY

**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| 108 | 8/8/2006 | 3.90 |
| | 2/8/2007 | 0.37 |
| | 8/8/2007 | 1.29 |
| | 2/27/2008 | 0.61 |
| | 8/18/2008 | 0.19 |
| | 2/16/2009 | 0.59 |
| | 8/25/2009 | 0.91 |
| 113 | 8/8/2006 | 1.01 |
| | 2/8/2007 | 0.15 |
| | 8/8/2007 | 5.02 |
| | 2/26/2008 | 0.42 |
| | 8/18/2008 | 0.70 |
| | 2/16/2009 | 0.57 |
| | 8/25/2009 | 0.98 |
| 117 | 8/8/2006 | 1.22 |
| | 2/8/2007 | 0.32 |
| | 8/8/2007 | 0.57 |
| | 2/27/2008 | 0.26 |
| | 8/18/2008 | 8.23 |
| | 2/16/2009 | 6.56 |
| | 8/25/2009 | 0.89 |
| | 8/16/2010 | 6.50 |
| | 8/17/2011 | 2.03 |
| | 8/31/2012 | 3.15 |
| | 8/12/2013 | 0.12 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 1.05 |
| 119 | 8/8/2007 | 1.52 |
| MW-1 | 8/18/2008 | 6.63 |
| | 2/16/2009 | 7.55 |
| | 8/25/2009 | 6.71 |
| MW-2 | 8/8/2007 | 5.61 |
| | 2/27/2008 | 1.43 |
| | 8/18/2008 | 0.17 |
| | 2/16/2009 | 0.62 |
| | 8/25/2009 | 0.84 |
| | 8/16/2010 | 0.39 |
| | 8/17/2011 | 1.24 |
| | 8/31/2012 | 0.19 |
| | 8/13/2013 | 0.49 |
| | 9/2/2014 | 0.90 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 2.88 |
| MW-3 | 8/9/2007 | 1.56 |
| | 2/26/2008 | 0.81 |
| | 8/18/2008 | 0.19 |
| | 2/16/2009 | 0.52 |
| | 8/25/2009 | 0.73 |
| | 8/16/2010 | 0.37 |
| | 8/17/2011 | 2.19 |
| | 8/31/2012 | 0.27 |
| | 8/12/2013 | 0.13 |
| | 9/2/2014 | 0.72 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 2.52 |

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

## PARAXYLENE FACILITY

**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| MW-4 | 2/16/2009 | 0.56 |
| | 8/25/2009 | 0.98 |
| MW-8 | 8/31/2012 | 0.45 |
| | 9/2/2014 | 0.75 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 2.68 |
| MW-10 | 8/31/2012 | 0.31 |
| | 9/2/2014 | NM - could not locate |
| MW-10R | 8/5/2015 | 0.11 |
| MW-11 | 8/31/2012 | 7.30 |
| | 9/2/2014 | 9.79 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 4.41 |
| MW-12 | 8/8/2006 | 0.53 |
| | 2/8/2007 | 0.40 |
| | 8/9/2007 | 1.76 |
| | 2/25/2008 | 0.72 |
| | 8/18/2008 | 0.21 |
| | 2/16/2009 | 0.53 |
| | 8/25/2009 | 0.78 |
| | 8/16/2010 | 0.27 |
| | 8/17/2011 | 1.27 |
| | 8/31/2012 | 0.37 |
| | 8/12/2013 | 0.33 |
| | 9/2/2014 | 1.31 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 3.30 |
| MW-14 | 8/8/2006 | 0.49 |
| | 2/8/2007 | 0.30 |
| | 8/8/2007 | 2.27 |
| | 2/27/2008 | 0.30 |
| | 8/18/2008 | 0.15 |
| | 2/16/2009 | 0.46 |
| | 8/25/2009 | 0.95 |
| | 8/16/2010 | 0.18 |
| | 8/17/2011 | 1.41 |
| | 8/31/2012 | 0.05 |
| | 8/12/2013 | 0.06 |
| | 9/2/2014 | 0.53 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 0.70 |
| MW-15 | 8/8/2007 | 0.69 |
| | 2/27/2008 | 0.38 |
| | 8/18/2008 | 9.60 |
| | 2/16/2009 | 0.52 |
| | 8/25/2009 | 5.57 |
| | 8/16/2010 | 6.47 |
| | 8/17/2011 | 5.49 |
| | 8/31/2012 | 5.75 |
| | 8/12/2013 | 0.64 |
| | 9/2/2014 | 8.70 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 3.35 |

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

## PARAXYLENE FACILITY

**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| MW-16 | 8/8/2006 | 1.04 |
| | 2/8/2007 | 0.35 |
| | 8/8/2007 | 0.63 |
| | 2/27/2008 | 0.37 |
| | 8/18/2008 | 0.18 |
| | 2/16/2009 | 0.56 |
| | 8/25/2009 | 0.63 |
| | 8/16/2010 | 0.29 |
| | 8/17/2011 | 1.17 |
| | 8/31/2012 | 0.19 |
| | 8/12/2013 | 0.07 |
| | 9/2/2014 | 0.95 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 1.78 |
| | | |
| MW-17 | 8/8/2006 | 8.80 |
| | 2/8/2007 | 8.58 |
| | 8/8/2007 | 11.06 |
| | 2/27/2008 | 9.73 |
| | 8/18/2008 | 9.20 |
| | 2/16/2009 | 3.18 |
| | 8/25/2009 | 8.06 |
| | 8/16/2010 | 5.93 |
| | 8/17/2011 | 8.65 |
| | 8/31/2012 | 3.59 |
| | 8/12/2013 | 7.43 |
| | 9/2/2014 | 0.65 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 1.38 |
| | | |
| MW-18 | 8/8/2006 | 1.00 |
| | 2/8/2007 | 7.44 |
| | 8/8/2007 | 5.80 |
| | 2/27/2008 | 6.82 |
| | 8/18/2008 | 0.78 |
| | 2/16/2009 | 0.56 |
| | 8/25/2009 | 4.92 |
| | 8/16/2010 | 6.96 |
| | 8/17/2011 | 4.54 |
| | 8/31/2012 | 3.61 |
| | 8/13/2013 | 4.70 |
| | 9/2/2014 | 6.71 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 4.05 |
| | | |
| MW-19 | 8/8/2006 | 1.91 |
| | 2/8/2007 | 3.65 |
| | 8/8/2007 | 6.36 |
| | 2/27/2008 | 8.05 |
| | 8/18/2008 | 8.08 |
| | 2/16/2009 | 0.80 |
| | 8/25/2009 | 5.01 |
| | 8/16/2010 | 6.29 |
| | 8/17/2011 | 5.40 |
| | 8/31/2012 | 4.15 |
| | 8/12/2013 | 5.65 |
| | 9/2/2014 | 7.56 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 3.95 |

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

## PARAXYLENE FACILITY

**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| MW-20 | 8/8/2006 | 0.85 |
| | 2/8/2007 | 4.70 |
| | 8/8/2007 | 3.76 |
| | 2/27/2008 | 4.71 |
| | 8/18/2008 | 0.38 |
| | 2/16/2009 | 0.57 |
| | 8/25/2009 | 3.81 |
| | 8/16/2010 | 1.13 |
| | 8/17/2011 | 1.14 |
| | 8/31/2012 | 1.63 |
| | 8/13/2013 | 0.11 |
| | 9/2/2014 | 1.14 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 5.33 |
| | | |
| MW-32 | 8/8/2006 | 2.50 |
| | 2/8/2007 | 4.07 |
| | 8/8/2007 | 0.96 |
| | 2/27/2008 | 5.88 |
| | 8/18/2008 | 7.01 |
| | 2/16/2009 | 8.28 |
| | 8/25/2009 | 4.03 |
| | 8/16/2010 | 2.21 |
| | 8/17/2011 | 4.14 |
| | 8/31/2012 | 2.26 |
| | 8/12/2013 | 4.82 |
| | 9/2/2014 | 6.14 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 5.29 |
| | | |
| MW-33 | 8/8/2006 | 8.80 |
| | 2/8/2007 | 8.17 |
| | 8/8/2007 | 9.32 |
| | 2/25/2008 | 8.42 |
| | 8/18/2008 | 9.57 |
| | 2/16/2009 | 0.75 |
| | 8/25/2009 | 5.22 |
| | 8/16/2010 | 6.19 |
| | 8/17/2011 | 9.74 |
| | 8/12/2013 | 8.69 |
| | 9/2/2014 | 5.95 |
| | 8/5/2015 | 0.11 |
| | | |
| MW-35 | 8/8/2007 | 1.27 |
| | 2/27/2008 | 0.42 |
| | 8/18/2008 | 0.20 |
| | 2/16/2009 | 0.48 |
| | 8/25/2009 | 0.84 |
| | | |
| MW-36 | 8/9/2007 | 1.29 |
| | 2/25/2008 | 0.40 |
| | 2/16/2009 | 0.53 |
| | 8/25/2009 | 0.92 |
| | 8/16/2010 | 0.22 |
| | 8/17/2011 | 1.99 |
| | 8/31/2012 | 0.48 |
| | 8/12/2013 | 0.10 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 3.84 |
| | | |

**TABLE 2**

**SUMMARY OF DISSOLVED OXYGEN MEASUREMENTS FROM SELECTED MONITORING WELLS - AUGUST 2006 THROUGH OCTOBER 2015**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | DISSOLVED OXYGEN (mg/L) |
|---|---|---|
| PTW-3 | 8/31/2012 | 0.28 |
| | 9/2/2014 | 0.60 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 2.86 |
| | | |
| PTW-6 | 8/31/2012 | 0.65 |
| | 9/2/2014 | 0.70 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 1.89 |
| | | |
| PTW-9 | 8/31/2012 | 0.02 |
| | 8/5/2015 | 0.10 |
| | 10/1/2015 | 2.55 |
| | | |
| KRW-5 | 2/16/2009 | 0.52 |
| | 8/25/2009 | 0.69 |
| | 8/16/2010 | 0.42 |
| | 8/17/2011 | 1.91 |
| | 8/31/2012 | 0.28 |
| | 8/12/2013 | 0.08 |
| | 9/2/2014 | 0.54 |
| | 8/5/2015 | 0.11 |
| | 10/1/2015 | 2.21 |

mg/L = milligrams per liter
NM = not measured

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| **TYPE II MONITORING WELLS** | | |
| MW-1 | 12/8/1995 | 29,000 |
| | 2/13/1996 | 11,000 |
| | 6/24/1996 | 9,400 |
| | 1/28/1997 | 340 |
| | 12/4/1997 | 4,000 |
| | 6/13/1998 | 360 |
| | 1/19/1999 | 250 |
| | 7/14/1999 | 26 |
| | 2/29/2000 | <1.0 |
| | 6/13/2000 | 470 |
| | 2/21/2001 | <1.0 |
| | 7/31/2001 | 2.3 |
| | 4/1/2002 | 260 |
| | 7/31/2002 | 4,200 |
| | 2/24/2003 | <1.0 |
| | 8/20/2003 | <1.0 |
| | 2/20/2004 | <1.0 |
| | 8/4/2004 | <1.0 |
| | 2/22/2005 | 950 |
| | 8/25/2005 | <0.31 |
| | 2/9/2006 | <1.3 |
| | 8/9/2006 | <1.3 |
| | 2/9/2007 | 1.9 J |
| | 8/9/2007 | <0.53 |
| | 2/22/2008 | <0.53 |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | <0.53 |
| | 8/18/2009 | <2.0 |
| | | |
| MW-2 | 2/20/2004 | 140,000 |
| | 8/4/2004 | 360,000 |
| | 2/21/2005 | 130,000 |
| | 8/25/2005 | 69,000 |
| | 2/9/2006 | 150,000 |
| | 8/9/2006 | 140,000 |
| | 2/8/2007 | 100,000 |
| | 8/8/2007 | 120,000 |
| | 2/21/2008 | 42,000 |
| | 8/15/2008 | 91,000 |
| | 2/11/2009 | 72,000 |
| | 8/19/2009 | 44,100 |
| | 8/11/2010 | 10,700 |
| | 8/16/2011 | 4,780 |
| | 8/29/2012 | 3,650 |
| | 8/8/2013 | 15,400 |
| | 8/28/2014 | 75,400 |
| | 8/4/2015 | 8,900 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-3 | 12/8/1995 | 180,000 |
| | 6/24/1996 | 28,000 |
| | 1/28/1997 | 53,000 |
| | 12/4/1997 | 100,000 |
| | 6/13/1998 | 35,000 |
| | 1/19/1999 | 49,000 |
| | 7/14/1999 | 20,000 |
| | 2/29/2000 | 37,000 |
| | 6/13/2000 | 63,000 |
| | 2/21/2001 | 120,000 |
| | 7/31/2001 | 110,000 |
| | 4/1/2002 | 81,000 |
| | 7/31/2002 | 96,000 |
| | 2/24/2003 | 120,000 |
| | 8/19/2003 | 96,000 |
| | 2/20/2004 | 110,000 |
| | 8/4/2004 | 89,000 |
| | 2/22/2005 | 130,000 |
| | 8/25/2005 | 27,000 |
| | 2/9/2006 | 16,000 |
| | 8/8/2006 | 110,000 |
| | 2/8/2007 | 10,000 |
| | 8/9/2007 | 110,000 |
| | 2/21/2008 | 100,000 |
| | 8/15/2008 | 90,000 |
| | 2/11/2009 | 91,000 |
| | 8/19/2009 | 69,400 |
| | | |
| MW-4 | 12/8/1995 | 1,600,000 |
| | 2/13/1996 | 140,000 |
| | 6/24/1996 | 140,000 |
| | 1/28/1997 | 190,000 |
| | 12/4/1997 | 220,000 |
| | 6/13/1998 | 180,000 |
| | 1/19/1999 | 190,000 |
| | 7/14/1999 | 300,000 |
| | 2/29/2000 | 100,000 |
| | 6/13/2000 | 45,000 |
| | 2/20/2004 | 66,000 |
| | 8/4/2004 | 80,000 |
| | 2/21/2005 | 36,000 |
| | 8/25/2005 | 25,000 |
| | 2/9/2006 | 24,000 |
| | 8/9/2006 | 75,000 |
| | 2/8/2007 | 52,000 |
| | 2/11/2009 | 130,000 |
| | 8/19/2009 | 77,300 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-5 | 2/13/1996 | 9,800 |
| | 6/24/1996 | 2,500 |
| | 1/28/1997 | 1,400 |
| | 12/4/1997 | 790 |
| | 6/13/1998 | 7,800 |
| | 1/19/1999 | 2,400 |
| | 7/14/1999 | 4,900 |
| | 2/29/2000 | 2,100 |
| | 6/13/2000 | 2,800 |
| | 7/31/2001 | 12,000 |
| | 4/1/2002 | 2,000 |
| | 7/31/2002 | <5.0 |
| | 2/24/2003 | 1,200 |
| | 8/20/2003 | 630 |
| | 2/20/2004 | 1,400 |
| | 8/4/2004 | 390 |
| | 2/22/2005 | 34 |
| | 8/25/2005 | <0.31 |
| | 2/9/2006 | 1,400 |
| | 8/9/2006 | 1,900 |
| | 2/8/2007 | 390 |
| | 8/9/2007 | 79 |
| | 2/21/2008 | 5,200 |
| | 8/15/2008 | 360 |
| | 2/11/2009 | <0.53 |
| | 8/19/2009 | 2.0 |
| | | |
| MW-7 | 10/15/1999 | 150,000 |
| | 2/29/2000 | 130,000 |
| | 2/21/2001 | 150,000 |
| | 7/31/2001 | 120,000 |
| | 4/2/2002 | 140,000 |
| | 2/24/2003 | 400,000 |
| | 8/20/2003 | 2,200,000 |
| | 2/20/2004 | 570,000 D |
| | 8/4/2004 | 3,100,000 |
| | 8/6/2004 | 110,000 |
| | 2/22/2005 | 120,000 |
| | WELL HAS BEEN PERMANENTLY ABANDONED | |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-8 | 10/5/1999 | 4,400 |
| | 2/29/2000 | 12,000 |
| | 2/21/2001 | 5,500 |
| | 7/31/2001 | 8,500 |
| | 4/2/2002 | 17,000 |
| | 2/24/2003 | 15,000 |
| | 8/20/2003 | 16,000 |
| | 2/20/2004 | 6,800 |
| | 8/4/2004 | 5,800 |
| | 2/22/2005 | 20,000 |
| | 8/25/2005 | 38,000 |
| | 2/9/2006 | 21,000 |
| | 8/9/2006 | 95 |
| | 2/8/2007 | 6,400 |
| | 8/9/2007 | 3,400 |
| | 2/21/2008 | 12,000 |
| | 8/15/2008 | 13,000 |
| | 2/11/2009 | 37,000 |
| | 8/18/2009 | 8,190 |
| | 8/11/2010 | 82.0 |
| | 8/16/2011 | 5,050 |
| | 8/29/2012 | 4,270 |
| | 8/8/2013 | 1,220 |
| | 8/28/2014 | 290 |
| | 8/4/2015 | 101 |
| | | |
| MW-9 | 2/29/2000 | <1 |
| | 2/24/2003 | <1 |
| | 8/20/2003 | <1 |
| | 2/20/2004 | <1 |
| | | |
| MW-10 | 2/29/2000 | 96,000 |
| | 2/21/2001 | 89,000 |
| | 7/31/2001 | 110,000 |
| | 8/25/2005 | 150,000 |
| | 2/9/2006 | 150,000 |
| | 8/9/2006 | 150,000 |
| | 2/9/2007 | 75,000 |
| | 8/9/2007 | 180,000 |
| | 2/25/2008 | 130,000 |
| | 8/15/2008 | 130,000 |
| | 2/11/2009 | 140,000 |
| | 8/19/2009 | 77,600 |
| | 8/12/2010 | 87,300 |
| | 8/16/2011 | 121,000 |
| | 8/30/2012 | 51,600 |
| | 8/12/2013 | 57,000 |
| | | |
| MW-10R | 8/4/2015 | 31,200 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-11 | 2/29/2000 | 110,000 |
| | 7/31/2001 | 100,000 |
| | 4/1/2002 | 63,000 |
| | 2/24/2003 | 130,000 |
| | 8/20/2003 | 110,000 |
| | 2/20/2004 | 53,000 |
| | 8/4/2004 | 53,000 |
| | 2/22/2005 | 79,000 |
| | 8/25/2005 | 56,000 |
| | 2/9/2006 | 3,300 |
| | 8/9/2006 | 57,000 |
| | 2/8/2007 | 30,000 |
| | 8/29/2012 | <2.0 |
| | 9/15/2014 | <0.66 |
| | 8/4/2015 | 1.5 J |
| MW-12 | 2/29/2000 | 56,000 |
| | 2/21/2001 | 170,000 |
| | 7/31/2001 | 140,000 |
| | 7/31/2002 | 140,000 |
| | 2/24/2003 | 86,000 |
| | 8/20/2003 | 17,000 |
| | 2/20/2004 | 92,000 |
| | 8/4/2004 | 35,000 |
| | 2/22/2005 | 100,000 |
| | 8/24/2005 | 22,000 |
| | 2/9/2006 | 59,000 |
| | 8/8/2006 | 110,000 |
| | 2/8/2007 | 37,000 |
| | 8/9/2007 | 33,000 |
| | 2/21/2008 | 99,000 |
| | 8/15/2008 | 130,000 |
| | 2/11/2009 | 120,000 |
| | 8/19/2009 | 83,200 E |
| | 8/11/2010 | 92,500 |
| | 8/16/2011 | 111,000 |
| | 8/29/2012 | 50,800 |
| | 8/12/2013 | 14,300 |
| | 8/28/2014 | 5.1 |
| | 8/4/2015 | <0.66 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-13 | 2/29/2000 | 85,000 |
| | 2/21/2001 | 43,000 |
| | 7/31/2001 | 41,000 |
| | 4/1/2002 | 76,000 |
| | 7/31/2002 | 30,000 |
| | 2/24/2003 | 99 |
| | 8/19/2003 | 7,900 |
| | 2/20/2004 | 6,000 |
| | 8/4/2004 | 13,000 |
| | 2/22/2005 | 54,000 |
| | 8/25/2005 | 110,000 |
| | 2/9/2006 | 51,000 |
| | 8/9/2006 | 80,000 |
| | 2/8/2007 | 98,000 |
| | 8/9/2007 | 18,000 |
| | 2/21/2008 | 78,000 |
| | 8/15/2008 | 72,000 |
| | 2/11/2009 | 85,000 |
| | 8/19/2009 | 57,700 |
| | 8/11/2010 | 42,900 |
| | 8/16/2011 | 32,100 |
| | 8/29/2012 | 71,400 |
| | 8/8/2013 | 5,590 |
| | 8/28/2014 | 33.4 |
| | 8/4/2015 | 8,270 |
| MW-14 | 2/29/2000 | 270,000 |
| | 7/31/2001 | 110,000 |
| | 4/1/2002 | 160,000 |
| | 7/31/2002 | 180,000 |
| | 2/24/2003 | 240,000 |
| | 8/19/2003 | 140,000 |
| | 2/20/2004 | 180,000 D |
| | 8/4/2004 | 190,000 |
| | 8/24/2005 | 29,000 |
| | 2/10/2006 | 170,000 |
| | 8/9/2006 | 130,000 |
| | 2/8/2007 | 140,000 |
| | 8/8/2007 | 110,000 |
| | 2/21/2008 | 150,000 |
| | 8/15/2008 | 120,000 |
| | 2/11/2009 | 140,000 |
| | 8/19/2009 | 76,900 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-15 | 2/29/2000 | 49,000 |
| | 6/13/2000 | 57,000 |
| | 2/21/2001 | 80,000 |
| | 7/31/2001 | 23,000 |
| | 7/30/2002 | 97,000 |
| | 2/24/2003 | 130,000 |
| | 8/19/2003 | 76,000 |
| | 2/20/2004 | 75,000 D |
| | 8/4/2004 | 110,000 |
| | 2/23/2005 | 86,000 |
| | 8/25/2005 | 98,000 |
| | 2/9/2006 | 71,000 |
| | 8/9/2006 | 84,000 |
| | 2/8/2007 | 48,000 |
| | 8/8/2007 | 86,000 |
| | 2/21/2008 | 66,000 |
| | 8/15/2008 | 9,300 |
| | 2/11/2009 | 230 |
| | 8/19/2009 | 18.0 |
| | | |
| MW-16 | 2/29/2000 | 79,000 |
| | 6/13/2000 | 62,000 |
| | 2/21/2001 | 47,000 |
| | 7/31/2001 | 21,000 |
| | 4/1/2002 | 8,700 |
| | 7/30/2002 | 4,300 |
| | 2/25/2003 | 17,000 |
| | 8/19/2003 | 30,000 |
| | 2/20/2004 | 27,000 |
| | 8/9/2006 | 29,000 |
| | 2/8/2007 | 42,000 |
| | 8/8/2007 | 66,000 |
| | 2/21/2008 | 47,000 |
| | 8/15/2008 | 39,000 |
| | 2/11/2009 | 31,000 |
| | 8/19/2009 | 18,500 P8 |
| | 8/11/2010 | 19,500 |
| | 8/16/2011 | 21,100 |
| | 8/29/2012 | 26,100 |
| | 8/29/2012 DUP | 26,000 |
| | 3/5/2013 | 28,200 |
| | 5/14/2013 | 44,400 |
| | 8/8/2013 | 18,500 |
| | 11/22/2013 | 21,700 |
| | 3/14/2014 | 33,500 |
| | 5/20/2014 | 49,200 |
| | 8/28/2014 | 8,070 |
| | 11/2/2014 | NS |
| | 3/3/2015 | NS - transducer in well |
| | 5/26/2015 | 17,300 |
| | 8/4/2015 | 24,400 |
| | | |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-17 | 2/29/2000 | 24,000 |
| | 6/13/2000 | 2,400 |
| | 2/21/2001 | 3,100 |
| | 8/1/2001 | 290 |
| | 4/1/2002 | 170 |
| | 7/30/2002 | 2,600 |
| | 2/24/2003 | <1.0 |
| | 8/19/2003 | 3.7 |
| | 2/20/2004 | 4,600 |
| | 8/4/2004 | 2,100 |
| | 2/21/2005 | 160 |
| | 8/24/2005 | 92 |
| | 2/9/2006 | 7,800 |
| | 3/2/2006 | 2,800 D |
| | 8/9/2006 | 4.9 |
| | 2/8/2007 | <1.3 |
| | 8/8/2007 | <0.53 |
| | 2/21/2008 | <0.53 |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | 2.5 |
| | 8/18/2009 | 64.0 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-18 | 2/29/2000 | 13,000 |
| | 6/13/2000 | 21 |
| | 2/21/2001 | 29,000 |
| | 7/31/2001 | 6,400 |
| | 4/1/2002 | 510 |
| | 7/30/2002 | <10 |
| | 2/25/2003 | 670 |
| | 8/19/2003 | 110 |
| | 2/20/2004 | <1.0 |
| | 2/23/2005 | 1,300 |
| | 8/24/2005 | 160 |
| | 2/9/2006 | 11,000 |
| | 3/2/2006 | 170 |
| | 8/9/2006 | 5,300 |
| | 2/8/2007 | 200 |
| | 8/8/2007 | <0.53 |
| | 2/21/2008 | 4.6 |
| | 8/15/2008 | 0.98 J |
| | 2/11/2009 | 32,000 |
| | 4/2/2009 | 30,000 |
| | 5/5/2009 | 38,000 |
| | 5/27/2009 | 950 |
| | 6/30/2009 | 580 |
| | 7/29/2009 | 129 |
| | 8/18/2009 | 33.4 |
| | 11/24/2009 | 208 |
| | 1/25/2010 | 30.2 |
| | 6/1/2010 | 25.4 |
| | 8/11/2010 | <2.0 |
| | 11/17/2010 | <0.66 |
| | 2/24/2011 | 921 |
| | 3/14/2011 | 460 |
| | 3/29/2011 | 2,640 |
| | 4/28/2011 | 1,950 |
| | 5/27/2011 | 762 |
| | 7/1/2011 | 25.9 |
| | 8/1/2011 | 782 |
| | 8/16/2011 | 138 |
| | 9/29/2011 | <2.0 |
| | 10/27/2011 | <2.0 |
| | 11/29/2011 | <2.0 |
| | 12/29/2011 | 172 |
| | 3/1/2012 | <2.0 |
| | 3/27/2012 | 8.0 |
| | 8/28/2012 | <2.0 |
| | 11/19/2012 | <2.0 |
| | 3/5/2013 | <0.66 |
| | 5/14/2013 | <0.66 |
| | 8/8/2013 | <0.66 |
| | 11/22/2013 | 3.4 |
| | 3/14/2014 | 890 |
| | 5/20/2014 | <0.66 |
| | 8/28/2014 | <0.66 |
| | 11/2/2014 | NS |
| | 3/3/2015 | NS - transducer in well |
| | 5/26/2015 | 311 |
| | 8/4/2015 | 322 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-19 | 2/29/2000 | 1,400 |
| | 6/13/2000 | 430 |
| | 2/21/2001 | 1,000 |
| | 7/31/2001 | 260 |
| | 4/1/2002 | 11,000 |
| | 7/30/2002 | 5,700 |
| | 2/25/2003 | 27,000 |
| | 8/19/2003 | 9,700 |
| | 2/20/2004 | 5,800 |
| | 2/23/2005 | 1,600 |
| | 8/24/2005 | 42,000 |
| | 2/9/2006 | 120,000 |
| | 3/24/2006 | 162,000 |
| | 4/27/2006 | 26,000 |
| | 5/30/2006 | 16,000 |
| | 8/8/2006 | 54,000 |
| | 10/5/2006 | 83,000 |
| | 10/31/2006 | 36,000 |
| | 11/28/2006 | 15,000 |
| | 12/29/2006 | 6,700 |
| | 1/26/2007 | 12,000 |
| | 2/8/2007 | 720 |
| | 3/30/2007 | 48 |
| | 4/26/2007 | 5.5 |
| | 5/25/2007 | <1.3 |
| | 7/2/2007 | 0.70 J |
| | 8/8/2007 | 0.89 J |
| | 10/26/2007 | <0.53 |
| | 12/5/2007 | <0.53 |
| | 2/21/2008 | <0.53 |
| | 4/30/2008 | 1,700 |
| | 5/28/2008 | <0.53 |
| | 6/30/2008 | 13 |
| | 7/31/2008 | <0.53 |
| | 8/15/2008 | <0.53 |
| | 9/29/2008 | <0.53 |
| | 10/30/2008 | <0.53 |
| | 12/1/2008 | <0.53 |
| | 2/11/2009 | 39,000 |
| | 4/2/2009 | 0.63 J |
| | 5/5/2009 | <0.53 |
| | 5/27/2009 | <0.53 |
| | 6/30/2009 | <0.20 |
| | 7/29/2009 | <2.0 |
| | 8/18/2009 | <2.0 |
| | 11/24/2009 | <2.0 |
| | 1/25/2010 | <2.0 |
| | 6/1/2010 | <2.0 |
| | 8/11/2010 | <2.0 |
| | 11/17/2010 | <0.66 |
| | 2/24/2011 | 1,790 |
| | 3/14/2011 | <3.3 |
| | 3/29/2011 | 1,230 |
| | 4/28/2011 | 1,540 |
| | 5/27/2011 | 90.6 |
| | 7/1/2011 | <2.0 |
| | 8/1/2011 | <0.66 |
| | 8/16/2011 | <0.66 |
| | 9/29/2011 | <2.0 |
| | 10/27/2011 | <2.0 |
| | 11/29/2011 | <2.0 |
| | 12/29/2011 | 17.2 |
| | 3/1/2012 | <2.0 |
| | 3/27/2012 | <2.0 |
| | 8/28/2012 | <2.0 |
| | 11/19/2012 | <2.0 |
| | 3/5/2013 | <0.66 |
| | 5/14/2013 | <0.66 |
| | 8/8/2013 | 1.3 J |
| | 11/22/2013 | 3,790 |
| | 3/14/2014 | <0.66 |
| | 5/20/2014 | <0.66 |
| | 8/28/2014 | <0.66 |
| | 11/2/2014 | NS |
| | 3/3/2015 | 42.6 |
| | 5/26/2015 | <0.66 |
| | 8/4/2015 | <0.66 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-20 | 2/29/2000 | 7,900 |
| | 6/13/2000 | 110,000 |
| | 2/21/2001 | 47,000 |
| | 7/31/2001 | 70,000 |
| | 4/2/2002 | 7,900 |
| | 7/31/2002 | 15,000 |
| | 2/25/2003 | 5,000 |
| | 8/19/2003 | 2,600 |
| | 2/20/2004 | 14,000 |
| | 8/3/2004 | 3,200 |
| | 2/18/2005 | 50,000 |
| | 8/24/2005 | 870 |
| | 2/10/2006 | 15,000 |
| | 3/2/2006 | 26 |
| | 8/8/2006 | 150 |
| | 2/8/2007 | <1.3 |
| | 8/8/2007 | 320 |
| | 2/21/2008 | 6,900 |
| | 8/15/2008 | 2,300 |
| | 2/11/2009 | 1,200 |
| | 8/18/2009 | 926 |
| | 8/11/2010 | 282 |
| | 8/16/2011 | 1,660 |
| | 8/29/2012 | <2.0 |
| | 8/8/2013 | 556 |
| | 8/8/2013 DUP | 563 |
| | 8/28/2014 | 5,080 |
| | 5/26/2015 | 1.2 J |
| | 6/23/2015 | NS |
| | 7/28/2015 | 17,700 |
| | 8/25/2015 | <2.0 |
| | | |
| MW-28 | 4/94 | 2,240 |
| | 2/13/1996 | 370 |
| | 6/24/1996 | 740 |
| | 1/28/1997 | 14 |
| | 12/4/1997 | 2,300 |
| | 6/13/1998 | 59 |
| | 7/14/1999 | <1 |
| | 3/1/2000 | <1 |
| | 6/13/2000 | <1 |
| | 2/21/2001 | 4 |
| | 7/31/2001 | <1.0 |
| | 2/25/2003 | 22 |
| | 8/20/2003 | <1.0 |
| | 2/20/2004 | 530 |
| | 8/3/2004 | 30 |
| | 2/18/2005 | <0.31 |
| | 8/24/2005 | 12,000 |
| | 2/10/2006 | <1.3 |
| | 8/8/2006 | <1.3 |
| | 2/8/2007 | <1.3 |
| | 8/8/2007 | 0.66 J |
| | 2/21/2008 | 640 |
| | 8/15/2008 | 9.3 |
| | 2/11/2009 | 160 |
| | 8/18/2009 | 2.1 |
| | | |
| MW-30 | 1/19/1999 | <1 |
| | 7/14/1999 | <1 |
| | 3/1/2000 | <1 |
| | 6/13/2000 | <1 |
| | 2/21/2001 | <1 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-32 | 4/1/2002 | 110,000 |
| | 7/31/2002 | 89,000 |
| | 2/25/2003 | 110,000 |
| | 8/19/2003 | 1,700 |
| | 2/20/2004 | 5,700 |
| | 8/4/2004 | 14,000 |
| | 2/22/2005 | 570 |
| | 8/24/2005 | 430 |
| | 2/10/2006 | 84 |
| | 8/8/2006 | 2,400 |
| | 2/8/2007 | 3,300 |
| | 8/8/2007 | 1,000 D |
| | 2/21/2008 | 0.95 J |
| | 8/15/2008 | 2.1 |
| | 2/11/2009 | <0.53 |
| | 8/18/2009 | <2.0 |
| MW-33 | 4/1/2002 | 15,000 |
| | 7/31/2002 | 21,000 |
| | 2/25/2003 | 22,000 |
| | 8/19/2003 | 22,000 |
| | 2/20/2004 | 3,600 |
| | 8/4/2004 | 13,000 |
| | 2/22/2005 | 2,500 |
| | 8/24/2005 | 17,000 |
| | 2/9/2006 | 33,000 |
| | 8/8/2006 | <1.3 |
| | 2/8/2007 | <1.3 |
| | 8/8/2007 | <0.53 |
| | 2/21/2008 | <0.53 |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | 6,200 |
| | 8/18/2009 | 180 |
| MW-34 | 2/22/2005 | 63,000 |
| | 8/25/2005 | 21,000 |
| | 2/9/2006 | 31,000 |
| | 8/8/2006 | 65,000 |
| | 2/8/2007 | 16,000 |
| | 8/9/2007 | 160,000 |
| | 2/21/2008 | 120,000 |
| | 8/15/2008 | 380,000 |
| | 8/15/2008 | 140,000 H |
| | 9/9/2008 | 130,000 |
| | 2/11/2009 | 150,000 |
| | 8/19/2009 | 90,500 P8 |
| MW-35 | 2/21/2005 | 1,400 |
| | 8/25/2005 | 900 |
| | 2/9/2006 | 1,200 |
| | 8/9/2006 | 1,800 |
| | 2/8/2007 | 1,800 |
| | 8/8/2007 | 1,700 |
| | 2/21/2008 | 780 |
| | 8/15/2008 | 560 |
| | 2/11/2009 | 440 |
| | 8/18/2009 | 159 |
| | 8/16/2011 | 352 |
| | 8/28/2012 | <2.0 |
| | 3/5/2013 | 248 |
| | 5/14/2013 | 335 |
| | 8/8/2013 | 542 |
| | 11/22/2013 | 275 |
| | 3/14/2014 | 5.5 |
| | 5/20/2014 | 136 |
| | 8/28/2014 | 201 |
| | 11/2/2015 | NS |
| | 3/3/2015 | 181 |
| | 5/26/2015 | 125 |
| | 8/4/2015 | 100 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| MW-36 | 2/22/2005 | 130,000 |
| | 8/25/2005 | 52,000 |
| | 2/9/2006 | 100,000 |
| | 8/9/2006 | 140,000 |
| | 2/8/2007 | 140,000 |
| | 8/9/2007 | 160,000 |
| | 2/22/2008 | 120,000 |
| | 8/15/2008 | 23,000 |
| | 2/11/2009 | 130,000 |
| | 8/19/2009 | 74,300 P8 |
| | 8/11/2010 | 63,700 |
| | 8/16/2011 | 109,000 |
| | 8/29/2012 | 87,800 |
| | 8/8/2013 | 51,200 |
| | 9/3/2014 | 25,500 |
| | 8/4/2015 | 25,300 |
| | | |
| MW-37 | 2/22/2005 | 1,900 |
| | 8/25/2005 | 35,000 |
| | 2/9/2006 | 4,500 |
| | 8/9/2006 | 970 |
| | 2/9/2007 | 160 |
| | 8/9/2007 | 3,700 |
| | 2/22/2008 | Bailed Dry - No Recharge |
| | 8/14/2008 | Bailed Dry - No Recharge |
| | 2/11/2009 | Bailed Dry - No Recharge |
| | 8/18/2009 | Bailed Dry - No Recharge |
| | 8/28/2014 | <0.66 |
| | 8/4/2015 | <0.66 |
| | | |
| PTW-1 | 8/6/2004 | 2,800 |
| | 9/6/2012 | 46,800 |
| | | |
| PTW-2 | 8/6/2004 | 7,400 |
| | | |
| PTW-3 | 8/6/2004 | 660 |
| | | |
| PTW-4 | 8/6/2004 | 22,000 |
| | | |
| PTW-5 | 8/6/2004 | 46,000 |
| | | |
| PTW-6 | 8/6/2004 | 4,800 |
| | | |
| PTW-7 | 8/6/2004 | 1,200 |
| | 9/6/2012 | 35,200 |
| | | |
| PTW-8 | 8/6/2004 | 40,000 |
| | | |
| PTW-9 | 8/6/2004 | 45,000 |
| | | |
| 101 | 2/24/2003 | 1,300 |
| | 8/19/2003 | 3,900 |
| | 2/20/2004 | 12,000 |
| | 8/4/2004 | 2,200 |
| | 2/21/2005 | 7,700 |
| | 8/25/2005 | 370 |
| | 2/10/2006 | 15 |
| | 8/9/2006 | 130 |
| | 2/8/2007 | 54 |
| | 8/9/2007 | 37 |
| | 2/25/2008 | 2.3 |
| | 8/15/2008 | 39 |
| | 2/11/2009 | 19 |
| | 9/7/2012 | 2.8 |
| | 9/4/2014 | 6.3 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| 102 | 12/8/1995 | 800 |
| | 6/24/1996 | 200 |
| | 1/28/1997 | 1,100 |
| | 12/4/1997 | 26 |
| | 6/13/1998 | 270 |
| | 1/19/1999 | 49 |
| | 7/14/1999 | 760 |
| | 2/29/2000 | 1,300 |
| | 6/13/2000 | 230 |
| | 2/21/2001 | 100 |
| | 8/1/2001 | 9.1 |
| | 4/2/2002 | <5.0 |
| | 7/30/2002 | <10 |
| | 2/24/2003 | 21 |
| | 8/19/2003 | 5.3 |
| | 2/20/2004 | 150 |
| | 8/4/2004 | 35 |
| | 2/21/2005 | 34 |
| | 8/25/2005 | 99 |
| | 2/10/2006 | 600 |
| | 8/9/2006 | 740 |
| | 2/8/2007 | 470 |
| | 8/9/2007 | 150 |
| | 2/25/2008 | 120 |
| | 8/15/2008 | 81 |
| | 2/11/2009 | 27 |
| | 8/18/2009 | 45.6 |
| | 9/7/2012 | 8.7 |
| | 9/4/2014 | 10.3 |
| | | |
| 104 | 7/30/2002 | <50 |
| | 2/20/2004 | 860 |
| | 8/18/2009 | <2.0 |
| | 9/7/2012 | <2.0 |
| | | |
| 105 | 7/30/2002 | <50 |
| | 8/4/2004 | 26 |
| | 2/21/2005 | 5.1 |
| | 8/25/2005 | 1.9 |
| | 2/10/2006 | 67 |
| | 8/9/2006 | 6.8 |
| | 2/8/2007 | 7.8 |
| | 8/9/2007 | 3.2 |
| | 2/25/2008 | 0.75 J |
| | 2/25/2008 DUP | 0.66 J |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | Unable to sample well - Obstruction in well. |
| | 8/18/2009 | <2.0 |
| | | |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| 106 | 12/8/1995 | 350,000 |
| | 6/24/1996 | <10 |
| | 1/28/1997 | 120,000 |
| | 6/13/1998 | No Data |
| | 1/19/1999 | 140,000 |
| | 7/14/1999 | 29,000 |
| | 3/1/2000 | 130,000 |
| | 6/13/2000 | 87,000 |
| | 2/21/2001 | 97,000 |
| | 8/1/2001 | 35,000 |
| | 8/19/2003 | 180,000 |
| | 2/20/2004 | 87,000 |
| | 8/4/2004 | 46,000 |
| | 2/21/2005 | 120,000 |
| | 8/24/2005 | 100,000 |
| | 2/9/2006 | 120000 |
| | 8/8/2006 | 110,000 |
| | 2/8/2007 | 100,000 |
| | 8/8/2007 | 86,000 |
| | 2/21/2008 | 130,000 |
| | 8/15/2008 | 53,000 |
| | 2/11/2009 | 120,000 |
| | 8/19/2009 | 72,500 |
| | 8/16/2011 | 111,000 |
| | 8/29/2012 | 17,400 |
| | 3/5/2013 | 43,800 |
| | 5/14/2013 | 62,600 |
| | 8/12/2013 | 92,800 |
| | 11/22/2013 | 84,000 |
| | 3/14/2014 | 71,200 |
| | 5/20/2014 | 91,500 |
| | 8/28/2014 | 49,500 |
| | 9/15/2014 | 72,800 |
| | 11/2/2014 | NS |
| | 3/3/2015 | NS - transducer in well |
| | 5/26/2015 | 66,300 |
| | 8/4/2015 | NS - well under water |
| | | |
| 107 | 6/13/2000 | 96,000 |
| | 7/31/2002 | 240,000 |
| | 8/19/2003 | 160,000 |
| | 2/20/2004 | 88,000 |
| | 8/4/2004 | 66,000 |
| | 2/21/2005 | 120,000 |
| | 8/25/2005 | 7,600 |
| | 2/9/2006 | 51,000 |
| | 8/9/2006 | 66,000 |
| | 2/8/2007 | 2,400 |
| | 8/8/2007 | 68,000 |
| | 2/21/2008 | 86,000 |
| | 8/15/2008 | 20,000 |
| | 2/11/2009 | 88,000 |
| | 8/19/2009 | 74,600 |
| | 8/11/2010 | 69,900 |
| | 8/16/2011 | 62,600 |
| | 3/5/2013 | 83,500 |
| | 5/14/2013 | 62,300 |
| | 8/8/2013 | 59,100 |
| | 11/25/2013 | 46,900 |
| | 3/14/2014 | 78,600 |
| | 5/20/2014 | 59,800 |
| | 9/15/2014 | 72,800 |
| | 11/2/2014 | NS |
| | 3/3/2015 | 59,800 |
| | 5/26/2015 | 28,500 |
| | 8/4/2015 | 6,270 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| 108 | 4/1/2002 | 130,000 |
| | 2/24/2003 | 150,000 |
| | 8/19/2003 | 97,000 |
| | 2/20/2004 | 120,000 |
| | 8/4/2004 | 120,000 |
| | 2/21/2005 | 140,000 |
| | 8/24/2005 | 48,000 |
| | 2/9/2006 | 110,000 |
| | 8/8/2006 | 14,000 |
| | 2/8/2007 | 6,500 |
| | 8/8/2007 | 84,000 |
| | 2/21/2008 | 130,000 |
| | 8/15/2008 | 33,000 |
| | 2/11/2009 | 150,000 |
| | 8/19/2009 | 95,500 |
| 113 | 1/19/1999 | 11 |
| | 7/14/1999 | BQL |
| | 2/29/2000 | 370 |
| | 6/13/2000 | 460 |
| | 2/21/2001 | <1 |
| | 7/31/2001 | 71 |
| | 4/1/2002 | 3.5 |
| | 7/31/2002 | <1.0 |
| | 2/25/2003 | 2.2 |
| | 8/19/2003 | 1.6 |
| | 2/20/2004 | <1.0 |
| | 8/4/2004 | <1.0 |
| | 2/22/2005 | 0.85 |
| | 8/24/2005 | <0.31 |
| | 2/9/2006 | 1.8 J |
| | 8/8/2006 | <1.3 |
| | 2/8/2007 | 1.9 J |
| | 8/8/2007 | 0.71 J |
| | 2/21/2008 | 0.88 J |
| | 8/15/2008 | 0.72 J |
| | 2/11/2009 | 2.4 |
| | 8/18/2009 | <2.0 |
| 114 | 6/13/1998 | 42 |
| 117 | 12/8/1995 | 86,000 |
| | 6/24/1996 | 59,000 |
| | 1/28/1997 | 80,000 |
| | 12/4/1997 | 46,000 |
| | 6/13/1998 | 130,000 |
| | 1/19/1999 | 120,000 |
| | 7/14/1999 | 140,000 |
| | 2/29/2000 | 78,000 |
| | 6/13/2000 | 100,000 |
| | 2/21/2001 | 81,000 |
| | 7/31/2001 | 45,000 |
| | 4/1/2002 | 39,000 |
| | 7/30/2002 | 16,000 |
| | 2/25/2003 | 55,000 |
| | 8/19/2003 | 7,100 |
| | 2/20/2004 | 110,000 D |
| | 8/4/2004 | 57,000 |
| | 2/23/2005 | 34,000 |
| | 8/24/2005 | 480 |
| | 2/9/2006 | <1.3 |
| | 8/8/2006 | 80,000 |
| | 2/8/2007 | 79,000 |
| | 8/8/2007 | 64,000 |
| | 2/21/2008 | 44,000 |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | <0.53 |
| | 8/18/2009 | 199 |
| | 8/11/2010 | <2.0 |
| | 8/16/2011 | 3.0 |
| | 8/28/2012 | <2.0 |
| | 8/8/2013 | 52,400 |
| | 8/28/2014 | 1,640 |
| | 8/4/2015 | 13,300 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| 119 | 6/24/1996 | <2 |
| | 1/28/1997 | 1,500 |
| | 12/4/1997 | 15 |
| | 6/13/1998 | 3,000 |
| | 1/19/1999 | 390 |
| | 7/14/1999 | 420 |
| | 2/29/2000 | 4,900 |
| | 6/13/2000 | 1,300 |
| | 2/21/2001 | 37 |
| | 7/31/2001 | 1,800 |
| | 4/1/2002 | 320 |
| | 7/30/2002 | <100 |
| | 2/24/2003 | 9,000 |
| | 8/19/2003 | <100 |
| | 2/20/2004 | 48 |
| | 8/4/2004 | 590 |
| | 2/23/2005 | 2,300 |
| | 8/25/2005 | <0.31 |
| | 2/9/2006 | 3.7 |
| | 8/9/2006 | 190 |
| | 2/8/2007 | 1.7 J |
| | 8/8/2007 | <0.53 |
| | 2/21/2008 | <0.53 |
| | 2/21/2008 DUP | <0.53 |
| | 8/15/2008 | <0.53 |
| | 2/11/2009 | <0.53 |
| | 8/18/2009 | <2.0 |
| | | |
| 120 | 12/8/1995 | 1,600 |
| | 6/24/1996 | 600 |
| | 1/28/1997 | 4,300 |
| | 12/4/1997 | 1,500 |
| | 6/13/1998 | 1,500 |
| | 1/19/1999 | 1,000 |
| | 7/14/1999 | 400 |
| | WELL WAS DAMAGED | |
| | 6/13/2000 | 800 |
| | 2/21/2001 | 1,200 |
| | 8/1/2001 | 2,300 |
| | 4/1/2002 | 33,000 |
| | WELL HAS BEEN PERMANENTLY ABANDONED | |
| | | |
| 121 | 12/8/1995 | 300,000 |
| | 6/24/1996 | 100,000 |
| | 1/28/1997 | 100,000 |
| | 12/4/1997 | 140,000 |
| | 6/13/1998 | 160,000 |
| | 1/19/1999 | 110,000 |
| | 7/14/1999 | 140,000 |
| | 3/1/2000 | 190,000 |
| | 2/24/2003 | 140,000 |
| | | |
| D-O | 12/8/1995 | 160,000 |
| | 6/24/1996 | 62,000 |
| | 1/28/1997 | 3,400 |
| | WELL HAS BEEN PERMANENTLY ABANDONED | |
| | | |
| **TYPE III MONITORING WELLS** | | |
| TMW-1 | 12/8/1995 | 220 |
| | 2/29/2000 | 300 |
| | | |
| TMW-2 | 2/29/2000 | 4.2 |
| | | |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| **RECOVERY WELLS** | | |
| RW-2 | 12/4/1997 | 8,100 |
| | 6/13/1998 | 14,000 |
| | 1/19/1999 | 8,200 |
| | 7/14/1999 | 9,200 |
| | 3/1/2000 | 26,000 |
| | 4/1/2002 | 17,000 |
| | 7/31/2002 | 13,000 |
| | WELL HAS BEEN PERMANENTLY ABANDONDED | |
| | | |
| KRW-3 | 12/4/1997 | 87,000 |
| | 6/13/1998 | 120,000 |
| | 1/19/1999 | 67,000 |
| | 7/14/1999 | 86,000 |
| | 2/29/2000 | 17,000 |
| | 6/13/2000 | 85,000 |
| | 2/21/2001 | 100,000 |
| | 7/31/2001 | 140,000 |
| | 4/1/2002 | 47,000 |
| | 7/31/2002 | 57,000 |
| | 2/25/2003 | 45,000 |
| | 8/19/2003 | 93,000 |
| | 2/20/2004 | 53,000 D |
| | 8/4/2004 | 58,000 |
| | 8/24/2005 | 16,000 |
| | | |
| KRW-4 | 12/4/1997 | 27,000 |
| | 6/13/1998 | 60,000 |
| | 1/19/1999 | 18,000 |
| | 7/14/1999 | 86,000 |
| | 2/29/2000 | 61,000 |
| | 6/13/2000 | 29,000 |
| | 2/21/2001 | 15,000 |
| | 8/1/2001 | 13,000 |
| | 4/1/2002 | 11,000 |
| | 7/31/2002 | 16,000 |
| | 2/24/2003 | 11,000 |
| | 8/19/2003 | 15,000 |
| | 2/20/2004 | 18,000 |
| | 8/4/2004 | 13,000 |
| | 2/23/2005 | 2,400 |
| | 8/24/2005 | 73,000 |
| | 9/29/2011 | 73.9 |
| | 9/7/2012 | 42.0 |

**TABLE 3**

**SUMMARY OF EPA METHOD 8260 (M/P XYLENE) LABORATORY RESULTS - GROUNDWATER**

**PARAXYLENE FACILITY**
**FORMER FHR NORTH TERMINAL**
**WILMINGTON, NORTH CAROLINA**

| WELL I.D. | DATE | M/P XYLENE (ug/L) |
|---|---|---|
| KRW-5 | 12/4/1997 | 180,000 |
| | 6/13/1998 | 130,000 |
| | 1/19/1999 | 84,000 |
| | 7/14/1999 | 390,000 |
| | 2/29/2000 | 150,000 |
| | 6/13/2000 | 100,000 |
| | 2/21/2001 | FP |
| | 7/31/2001 | 79,000 |
| | 4/1/2002 | 170,000 |
| | 7/31/2002 | 60,000 |
| | 2/24/2003 | 66,000 |
| | 8/19/2003 | 210,000 |
| | 2/20/2004 | 77,000 |
| | 8/4/2004 | 180,000 |
| | 2/22/2005 | 77,000 |
| | 8/24/2005 | 58,000 |
| | 2/11/2009 | 96,000 |
| | 8/19/2009 | 78,000 P8 |
| | 8/11/2010 | 97,300 |
| | 8/16/2011 | 81,700 |
| | 8/16/2011 DUP | 89,900 |
| | 8/30/2012 | 74,700 |
| | 3/5/2013 | 72,000 |
| | 5/14/2013 | 68,700 |
| | 8/12/2013 | 92,300 |
| | 8/12/2013 DUP | 92,800 |
| | 11/25/2013 | 71,000 |
| | 3/14/2014 | 83,900 |
| | 5/20/2014 | 36,200 |
| | 8/28/2014 | 21,200 |
| | 11/2/2014 | NS |
| | 3/3/2015 | 67,700 |
| | 5/26/2015 | 78,800 |
| | 8/4/2015 | 60,900 |
| | | |
| KRW-6 | 2/21/2001 | 64,000 |
| | 7/31/2001 | 95,000 |
| | 4/1/2002 | 93,000 |
| | 7/31/2002 | 53,000 |
| | 2/25/2003 | 60,000 |
| | 8/19/2003 | 72,000 |
| | 2/20/2004 | 120,000 |
| | 8/4/2004 | 92,000 |
| | 2/23/2005 | 69,000 |
| | 8/24/2005 | 54,000 |
| | | |
| KRW-7 | 8/21/2003 | 21,000 |
| | 8/4/2004 | 63,000 |
| | 2/23/2005 | 31,000 |
| | 8/24/2005 | 9,000 |
| | | |
| KRW-8 | 8/21/2003 | 100,000 |
| | 8/4/2004 | 14,000 |
| | 2/22/2005 | 72,000 |
| | 8/24/2005 | 55,000 |
| | | |
| **TEMPORARY MONITORING WELLS *** | | |
| HP-1 | 4/1994 | 11,900 |
| HP-2 | 4/1994 | 11,500 |
| 303TW-1 | 3/28/2003 | 480 |
| 303TW-2 | 3/28/2003 | 1 |
| 303TW-3 | 3/28/2003 | 2,200 |
| 303TW-4 | 3/28/2003 | 31,000 |

All results in micrograms per liter (ug/L).
BQL = Below Quantitative Limit
FP = Free-Phase Product
NS = Not Sampled
< = Less than method detection limit or reporting limit
* Temporary wells have been permanently abandoned
D = The reported result is from a secondary dilution
E = Analyte concentration exceeded the calibration range. Thr reported result is estimated.
H = Prepped and analyzed beyond specified holding time
J = The result is less than the reporting limit, but greater than or equal to the method detection limit and the concentration is an approximate value
P8 = Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

# FIGURES

1,000 500 0 1,000 Feet

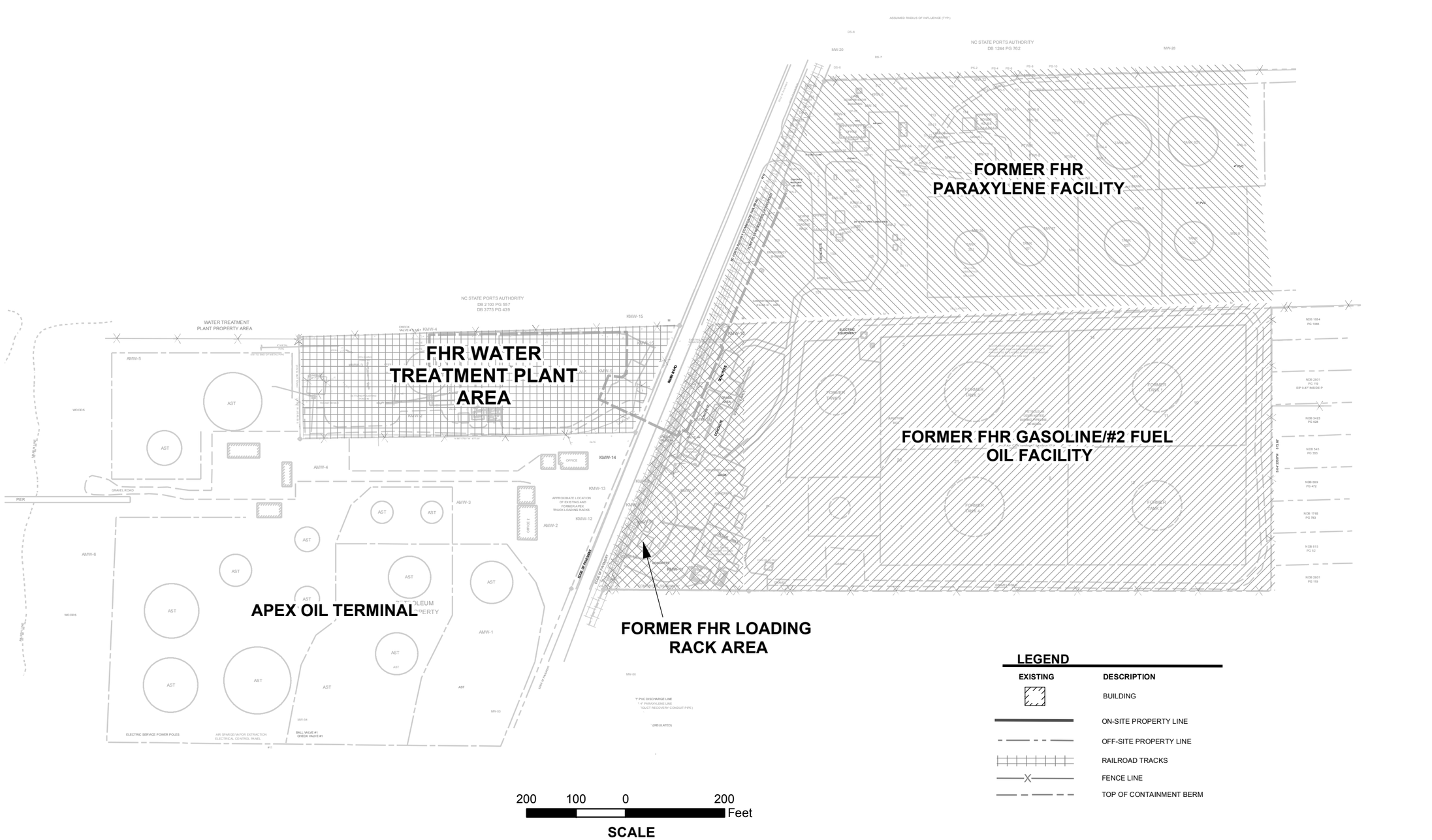
SCALE

Data Source: New Hanover County Tax Department Orthophotography (2010).

CATLIN
Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585

| PROJECT | TITLE | FIGURE |
|---|---|---|
| FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, N.C. | GENERAL LOCATION MAP | 1 |

| JOB NO. | DATE | SCALE | DRAWN BY | CHECKED BY |
|---|---|---|---|---|
| 201125 | DEC 2015 | 1"=1000' | THW | WJW |

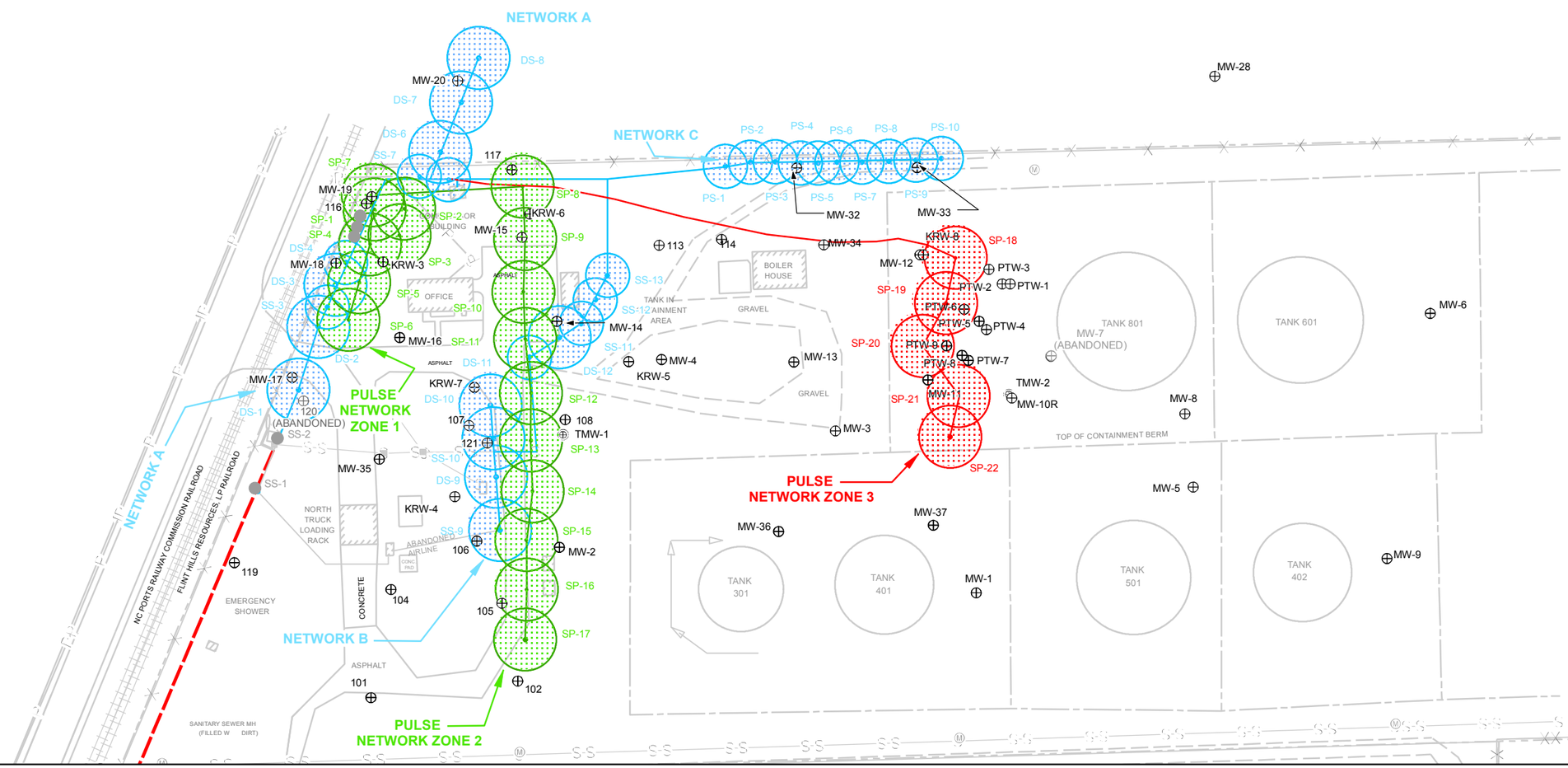



NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004
2. PROPERTY LINES NOT SURVEYED.
3. PETROLEUM FUEL PROPERTY BASED ON AERIAL PHOTOGRAPHS.

| | | | | | |
|---|---|---|---|---|---|
| CATLIN Engineers and Scientists<br>220 Old Dairy Road<br>Wilmington, NC 28405<br>Corporate Licensure No. for Engineering Services C-0585 | PROJECT: FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, NC | TITLE: SITE MAP | | | FIGURE 2 |
| | JOB NO: 201125 | DATE: DEC 2015 | SCALE: AS SHOWN | DRAWN BY: THW | CHECKED BY: WJW |

## LEGEND

| EXISTING | DESCRIPTION |
|---|---|
| | BUILDING |
| | TYPE II MONITORING WELL |
| | TYPE III MONITORING WELL |
| | CATCH BASINS |
| | CLEAN OUT |
| | CONTINUOUS AIR SPARGE WELL WITH ESTIMATED INFLUENCE |
| | PULSE AIR SPARGE WELL WITH ESTIMATED INFLUENCE |
| | PULSE AIR SPARGE WELL WITH ESTIMATED INFLUENCE - ZONE 3 |
| | MANHOLE |
| | ABANDONED SPARGE WELL |
| | OVERHEAD LIGHT |
| | PROPERTY LINE |
| | SANITARY SEWER |
| | WATER SUPPLY |
| | POWER LINE |
| | TELEPHONE LINE |
| | FENCE LINE |
| | STORMWATER LINE |




NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINE NOT SURVEYED.

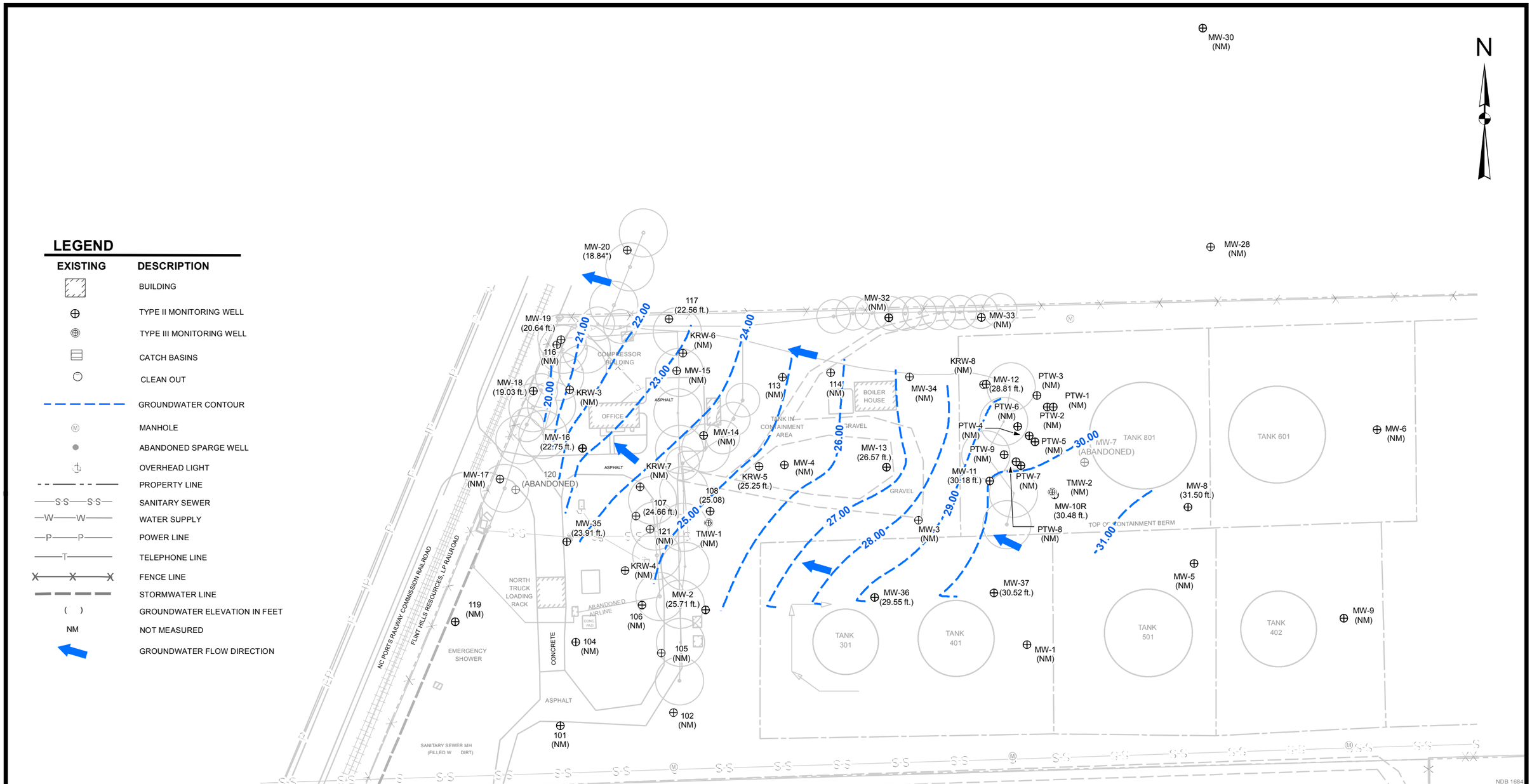
100 50 0 100 Feet

SCALE

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585

| PROJECT | TITLE | FIGURE |
|---|---|---|
| FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, NC | CURRENT LAYOUT OF SITE AT FORMER FHR PARAXYLENE FACILITY AS OF AUGUST 2015 | 3 |

| JOB NO: | DATE: | SCALE: | DRAWN BY: | CHECKED BY: |
|---|---|---|---|---|
| 201125 | DEC 2015 | AS SHOWN | THW | WJW |




NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINE NOT SURVEYED.
3. KRW-8, 116 AND ALL TYPE III MONITORING WELLS WERE OMITTED FROM CONTOURING.
4. CONTOUR INTERVEL IS 1.00 ft.
5. MONITORING WELL MW-20 WAS GAUGED ON AUGUST 25, 2015 (REST OF WELLS WERE GAUGED ON AUGUST 4, 2015) AND WAS OMITTED FROM CONTOURING.
6. TOP OF CASING ELEVATIONS SURVEYED BY PARAMOUNTE ENGINEERING, INC. IN JUNE 2015.

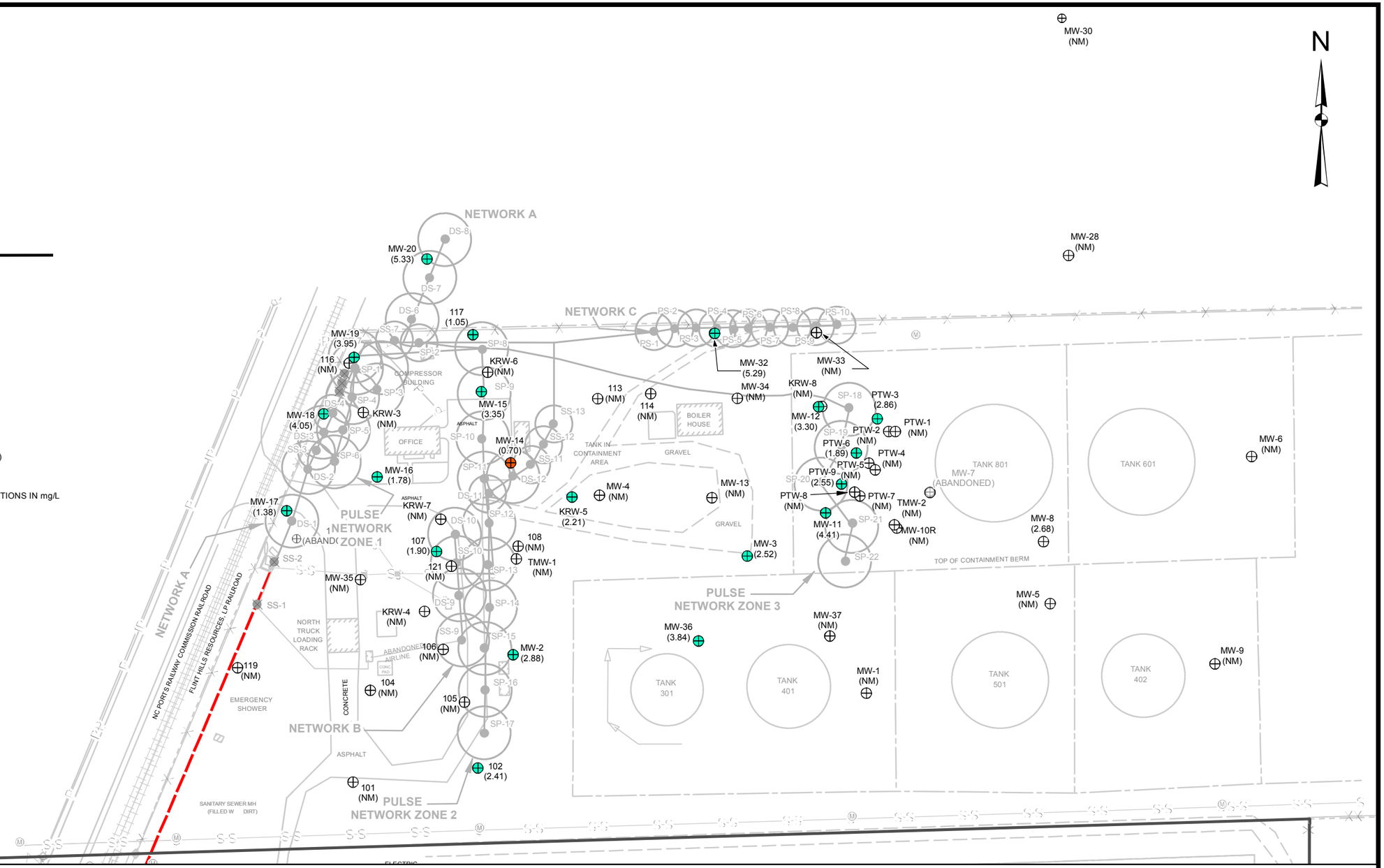
100 50 0 100 Feet

SCALE

| | | | | | |
|---|---|---|---|---|---|
| CATLIN Engineers and Scientists<br>220 Old Dairy Road<br>Wilmington, NC 28405<br>Corporate Licensure No. for Engineering Services C-0585 | PROJECT: FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, NC | TITLE: GROUNDWATER CONTOURS AT FORMER FHR PARAXYLENE FACILITY AS OF AUGUST 2015 | | | FIGURE 4 |
| | JOB NO: 201125 | DATE: DEC 2015 | SCALE: AS SHOWN | DRAWN BY: THW | CHECKED BY: WJW |

## LEGEND

| EXISTING | DESCRIPTION |
|---|---|
| | BUILDING |
| | TYPE II MONITORING WELL |
| | TYPE III MONITORING WELL |
| | CATCH BASINS |
| | CLEAN OUT |
| | CONTINUOUS AIR SPARGE WELL |
| | PULSE AIR SPARGE WELL |
| | AEROBIC CONDITIONS (>1 mg/L) |
| | ANAEROBIC CONDITIONS (<1 mg/L) |
| (NM) | NOT MEASURED |
| ( ) | DISSOLVED OXYGEN CONCENTRATIONS IN mg/L |
| | MANHOLE |
| | ABANDONED SPARGE WELL |
| | OVERHEAD LIGHT |
| | PROPERTY LINE |
| S—S·S—S·S— | SANITARY SEWER |
| —W——W——W | WATER SUPPLY |
| —P——P——P | POWER LINE |
| —T— | TELEPHONE LINE |
| —X——X——X | FENCE LINE |
| | STORMWATER LINE |




NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINE NOT SURVEYED.
3. THE AUGUST 2015 DISSOLVED OXYGEN DATA WAS SUBSTANTIALLY LOWER THAN HISTORICAL DATA; THEREFORE, CATLIN COLLECTED ADDITIONAL DISSOLVED OXYGEN DATA ON OCTOBER 1, 2015.

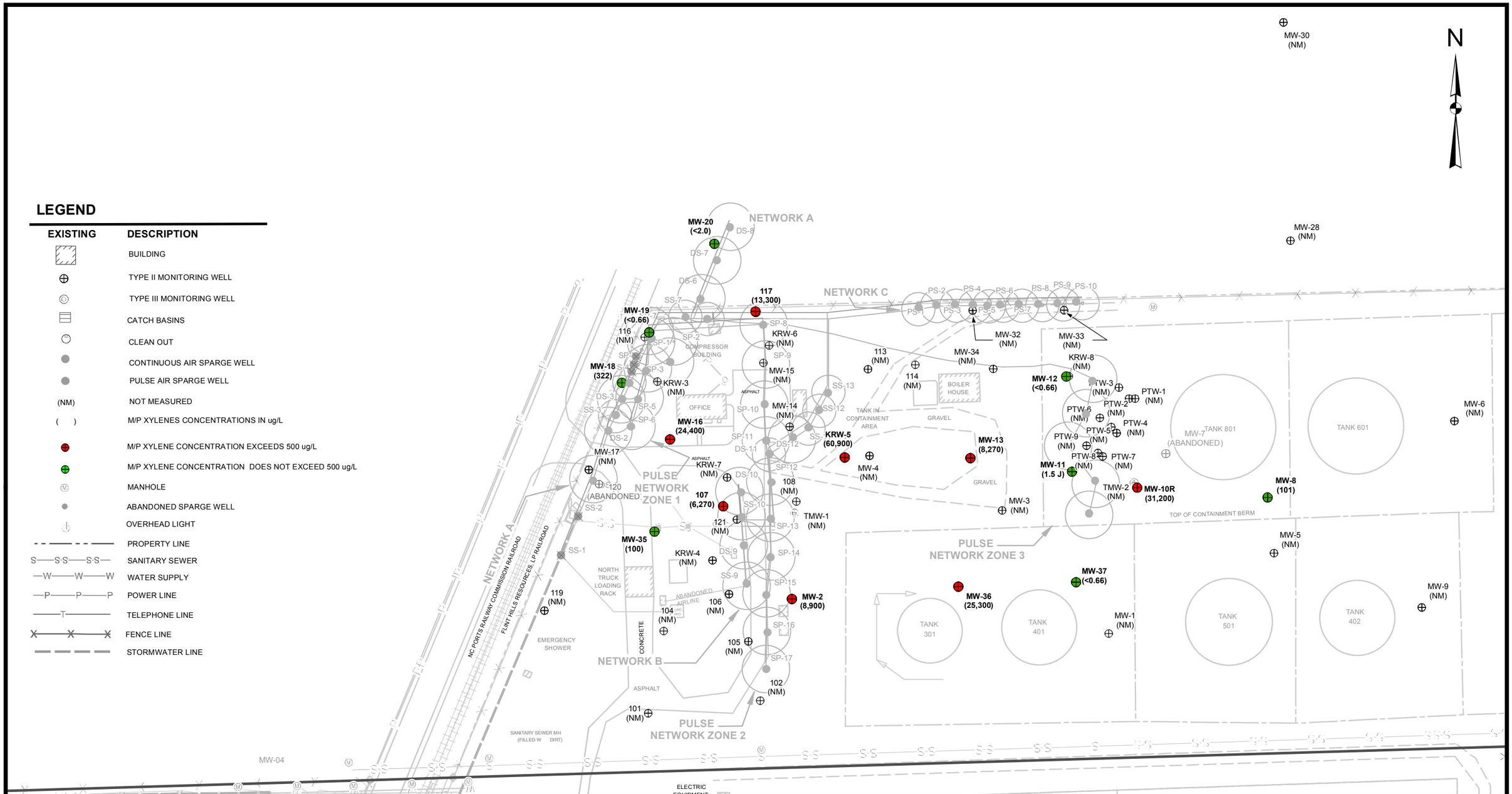
100 50 0 100 Feet

SCALE

| | | | |
|---|---|---|---|
| CATLIN Engineers and Scientists<br>220 Old Dairy Road<br>Wilmington, NC 28405<br>Corporate Licensure No. for Engineering Services C-0585 | PROJECT: FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, NC | TITLE: DISSOLVED OXYGEN LEVELS AT FORMER FHR PARAXYLENE FACILITY FOR OCTOBER 2015 SAMPLING EVENT | FIGURE 5 |
| | JOB NO: 201125 / DATE: DEC 2015 | SCALE: AS SHOWN / DRAWN BY: THW / CHECKED BY: WJW | |

## LEGEND

| EXISTING | DESCRIPTION |
|---|---|
| | BUILDING |
| | TYPE II MONITORING WELL |
| | TYPE III MONITORING WELL |
| | CATCH BASINS |
| | CLEAN OUT |
| | CONTINUOUS AIR SPARGE WELL |
| | PULSE AIR SPARGE WELL |
| (NM) | NOT MEASURED |
| ( ) | M/P XYLENES CONCENTRATIONS IN ug/L |
| | M/P XYLENE CONCENTRATION EXCEEDS 500 ug/L |
| | M/P XYLENE CONCENTRATION DOES NOT EXCEED 500 ug/L |
| | MANHOLE |
| | ABANDONED SPARGE WELL |
| | OVERHEAD LIGHT |
| | PROPERTY LINE |
| S—S·S—S·S— | SANITARY SEWER |
| —W—W—W | WATER SUPPLY |
| —P—P—P | POWER LINE |
| —T— | TELEPHONE LINE |
| —X—X—X | FENCE LINE |
| | STORMWATER LINE |




NOTE:
1. MAP PROVIDED BY ROBERT H. GOSLEE & ASSOCIATES, P.A. JULY 2004.
2. PROPERTY LINE NOT SURVEYED.

100 50 0 100 Feet

SCALE

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585

| PROJECT | TITLE | FIGURE |
|---|---|---|
| FORMER FHR NORTH TERMINAL PARAXYLENE FACILITY RIVER ROAD WILMINGTON, NC | GROUNDWATER M/P XYLENE DATA AT FORMER FHR PARAXYLENE FACILITY AS OF AUGUST 2015 | 6 |

| JOB NO: | DATE: | SCALE: | DRAWN BY: | CHECKED BY: |
|---|---|---|---|---|
| 201125 | DEC 2015 | AS SHOWN | THW | WJW |

# APPENDICES

# APPENDIX A

# GROUNDWATER ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 17, 2015

Dimitri Talbert
Catlin Engineers & Scientists
PO Box 10279
Wilmington, NC 284040279

RE: Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

Dear Dimitri Talbert:
Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Dimitri Talbert, Catlin Engineers & Scientists



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without the written consent of Pace Analytical Services, Inc..

**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

## CERTIFICATIONS

| | |
|---|---|
| Project: | Fmr FHR Px Facility 201125 |
| Pace Project No.: | 92239869 |

**Charlotte Certification IDs**

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
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
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221



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**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

## SAMPLE SUMMARY

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **92239869001** | **107** | Water | 03/03/15 14:15 | 03/05/15 11:15 |
| **92239869002** | **MW-19** | Water | 03/03/15 13:30 | 03/05/15 11:15 |
| **92239869003** | **MW-35** | Water | 03/03/15 13:50 | 03/05/15 11:15 |
| **92239869004** | **KRW-5** | Water | 03/03/15 14:50 | 03/05/15 11:15 |



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## SAMPLE ANALYTE COUNT

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92239869001** | **107** | EPA 8260 | CAH | 4 | PASI-C |
| **92239869002** | **MW-19** | EPA 8260 | CAH | 4 | PASI-C |
| **92239869003** | **MW-35** | EPA 8260 | CAH | 4 | PASI-C |
| **92239869004** | **KRW-5** | EPA 8260 | CAH | 4 | PASI-C |



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# ANALYTICAL RESULTS

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

**Sample: 107** **Lab ID: 92239869001** Collected: 03/03/15 14:15 Received: 03/05/15 11:15 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **59800** | ug/L | 500 | 165 | 250 | | 03/13/15 12:41 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 108 | % | 70-130 | | 50 | | 03/13/15 06:49 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 104 | % | 70-130 | | 50 | | 03/13/15 06:49 | 17060-07-0 | |
| Toluene-d8 (S) | 98 | % | 70-130 | | 50 | | 03/13/15 06:49 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

**Sample: MW-19** **Lab ID: 92239869002** Collected: 03/03/15 13:30 Received: 03/05/15 11:15 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **42.6** | ug/L | 2.0 | 0.66 | 1 | | 03/13/15 14:55 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 109 | % | 70-130 | | 1 | | 03/13/15 14:55 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 70-130 | | 1 | | 03/13/15 14:55 | 17060-07-0 | |
| Toluene-d8 (S) | 97 | % | 70-130 | | 1 | | 03/13/15 14:55 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

**Sample: MW-35** **Lab ID: 92239869003** Collected: 03/03/15 13:50 Received: 03/05/15 11:15 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **181** | ug/L | 2.0 | 0.66 | 1 | | 03/13/15 15:12 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 109 | % | 70-130 | | 1 | | 03/13/15 15:12 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 70-130 | | 1 | | 03/13/15 15:12 | 17060-07-0 | |
| Toluene-d8 (S) | 96 | % | 70-130 | | 1 | | 03/13/15 15:12 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

**Sample: KRW-5** **Lab ID: 92239869004** Collected: 03/03/15 14:50 Received: 03/05/15 11:15 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **67700** | ug/L | 400 | 132 | 200 | | 03/13/15 13:14 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 111 | % | 70-130 | | 25 | | 03/13/15 07:40 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 103 | % | 70-130 | | 25 | | 03/13/15 07:40 | 17060-07-0 | |
| Toluene-d8 (S) | 97 | % | 70-130 | | 25 | | 03/13/15 07:40 | 2037-26-5 | |



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# QUALITY CONTROL DATA

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

QC Batch: MSV/30697 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92239869001, 92239869004

METHOD BLANK: 1409595 | Matrix: Water
Associated Lab Samples: 92239869001, 92239869004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 03/12/15 23:32 | |
| 1,2-Dichloroethane-d4 (S) | % | 99 | 70-130 | 03/12/15 23:32 | |
| 4-Bromofluorobenzene (S) | % | 104 | 70-130 | 03/12/15 23:32 | |
| Toluene-d8 (S) | % | 97 | 70-130 | 03/12/15 23:32 | |

LABORATORY CONTROL SAMPLE: 1409596

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 94.9 | 95 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 93 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 105 | 70-130 | |
| Toluene-d8 (S) | % | | | 101 | 70-130 | |

**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: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

QC Batch: MSV/30707 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92239869002, 92239869003

METHOD BLANK: 1410281 | Matrix: Water
Associated Lab Samples: 92239869002, 92239869003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 03/13/15 11:50 | |
| 1,2-Dichloroethane-d4 (S) | % | 99 | 70-130 | 03/13/15 11:50 | |
| 4-Bromofluorobenzene (S) | % | 106 | 70-130 | 03/13/15 11:50 | |
| Toluene-d8 (S) | % | 97 | 70-130 | 03/13/15 11:50 | |

LABORATORY CONTROL SAMPLE: 1410282

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 99.3 | 99 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 95 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 108 | 70-130 | |
| Toluene-d8 (S) | % | | | 99 | 70-130 | |

MATRIX SPIKE SAMPLE: 1410283

| Parameter | Units | 92240799003 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 17.9 | 40 | 56.4 | 96 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 95 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 112 | 70-130 | |
| Toluene-d8 (S) | % | | | | 98 | 70-130 | |

SAMPLE DUPLICATE: 1410284

| Parameter | Units | 92240799004 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 99 | 102 | 2 | | |
| 4-Bromofluorobenzene (S) | % | 107 | 110 | 3 | | |
| Toluene-d8 (S) | % | 98 | 97 | 1 | | |

**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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# QUALIFIERS

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

## 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.

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.

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, Styrene, and Vinyl chloride.

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



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# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Fmr FHR Px Facility 201125
Pace Project No.: 92239869

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92239869001** | **107** | EPA 8260 | MSV/30697 | | |
| **92239869002** | **MW-19** | EPA 8260 | MSV/30707 | | |
| **92239869003** | **MW-35** | EPA 8260 | MSV/30707 | | |
| **92239869004** | **KRW-5** | EPA 8260 | MSV/30697 | | |



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| Pace Analytical | Document Name: **Sample Condition Upon Receipt (SCUR)** | Document Revised: September 22. 2014 Page 1 of 2 |
|---|---|---|
| | Document Number: **F-CHR-CS-003-rev.15** | Issuing Authority: Pace Huntersville Quality Office |

Client Name: Cutlin Eng

**Courier:** ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

**Custody Seal on Cooler/Box Present:** ☐ yes ☑ no Seals intact: ☐ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

**Thermometer Used: IR Gun** T1401 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

**Temp Correction Factor** **T1401** No Correction

**Corrected Cooler Temp.:** 3.6 °C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Optional
Proj. Due Date:
Proj. Name:

Date and Initials of person examining contents: AP 3-5-15

| | | Comments: |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: | ☑Yes ☐No ☐N/A | 12. |
| -Includes date/time/ID/Analysis Matrix:_____ | | |
| All containers needing preservation have been checked. | ☐Yes ☐No ☑N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes ☐No ☑N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes ☐No | |
| Samples checked for dechlorination: | ☐Yes ☐No ☑N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☐No ☑N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☑N/A | |
| Pace Trip Blank Lot # (if purchased):_____ | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

| | | | |
|---|---|---|---|
| **SCURF Review:** | AMB | Date: | 3-5-15 |
| **SRF Review:** | LO | Date: | 3.5.15 |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92239869
92239869

(if no label available)

Pace Analytical®
www.pacelabs.com

# 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

1657342

**Section A** Required Client Information:

Company: CATLIN ENGINEERS & SCIENTISTS
Address: 220 OLD DAIRY ROAD, WILMINGTON NC 28405
Email To: dimitri.talbert@catlinusa.com
Phone: 910-452-5861 Fax: 910-452-7503
Requested Due Date/TAT: STANDARD

**Section B** Required Project Information:

Report To: BILL WALSH
Copy To: DIMITRI TALBERT
Purchase Order No.:
Project Name: FORMER FHR PX FACILITY
Project Number: 201125

**Section C** Invoice Information:

Attention: MICHAEL CHRISTOPHER
Company Name: KR & ES
Address:
Pace Quote Reference:
Pace Project Manager: ANGELA BAIONI
Pace Profile #: 31416-1

**REGULATORY AGENCY**

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

**Section D** Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Analysis Test: M/P XYLENES-8260

| ITEM # | SAMPLE ID | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED COMPOSITE START DATE | COMPOSITE START TIME | COMPOSITE END/GRAB DATE | COMPOSITE END/GRAB TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test (Y/N) | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 107 | WT | G | | | 03MAR15 | 1415 | | 3 | | | | X | | | | | X | | 001 |
| 2 | MW-19 | ↓ | ↓ | | | ↓ | 1330 | | 3 | | | | X | | | | | X | | 002 |
| 3 | MW-35 | ↓ | ↓ | | | ↓ | 1350 | | 3 | | | | X | | | | | X | | 003 |
| 4 | KRW-5 | ↓ | ↓ | | | ↓ | 1450 | | 3 | | | | X | | | | | X | | 004 |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |

92239869

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | DIMITRI TALBERT / CATLIN | 04MAR15 | 1330 | J. Dixon / Pace | 3/4/15 | 1550 | | | | |
| | | | | Amy Pace / Pace | 3-5-15 | 1115 | 3.6 | ✓ | N | ✓ |
| | | | | | | | | | | |
| | | | | | | | | | | |

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: LARRY WESSELL

SIGNATURE of SAMPLER: FOR LARRY WESSELL

DATE Signed (MM/DD/YY): 04MAR15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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Huntersville, NC 28078
(704)875-9092

August 04, 2015

Mike D. Mason
CATLIN Engineers & Scientists
220 Old Dairy Road
Wilmington, NC 28405

RE: Project: KOCH NORTH
Pace Project No.: 92252175

Dear Mike Mason:
Enclosed are the analytical results for sample(s) received by the laboratory on May 30, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Bill Walsh, Catlin Engineers & Scientists



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# CERTIFICATIONS

Project: KOCH NORTH
Pace Project No.: 92252175

**Charlotte Certification IDs**
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
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
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221



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## SAMPLE SUMMARY

Project: KOCH NORTH
Pace Project No.: 92252175

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **92252175001** | **MW-16** | Water | 05/26/15 12:10 | 05/30/15 09:00 |
| **92252175002** | **MW-18** | Water | 05/26/15 12:30 | 05/30/15 09:00 |
| **92252175003** | **MW-19** | Water | 05/26/15 12:45 | 05/30/15 09:00 |
| **92252175004** | **MW-20** | Water | 05/26/15 11:15 | 05/30/15 09:00 |
| **92252175005** | **MW-35** | Water | 05/26/15 11:30 | 05/30/15 09:00 |
| **92252175006** | **KRW-5** | Water | 05/26/15 10:30 | 05/30/15 09:00 |
| **92252175007** | **106** | Water | 05/26/15 11:40 | 05/30/15 09:00 |
| **92252175008** | **107** | Water | 05/26/15 12:00 | 05/30/15 09:00 |



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## SAMPLE ANALYTE COUNT

Project: KOCH NORTH
Pace Project No.: 92252175

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92252175001** | **MW-16** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175002** | **MW-18** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175003** | **MW-19** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175004** | **MW-20** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175005** | **MW-35** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175006** | **KRW-5** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175007** | **106** | EPA 8260 | SNP | 4 | PASI-C |
| **92252175008** | **107** | EPA 8260 | SNP | 4 | PASI-C |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: MW-16** **Lab ID: 92252175001** Collected: 05/26/15 12:10 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **17300** | ug/L | 500 | 165 | 250 | | 06/04/15 07:16 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 100 | % | 70-130 | | 250 | | 06/04/15 07:16 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 250 | | 06/04/15 07:16 | 17060-07-0 | |
| Toluene-d8 (S) | 107 | % | 70-130 | | 250 | | 06/04/15 07:16 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: MW-18** **Lab ID: 92252175002** Collected: 05/26/15 12:30 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **311** | ug/L | 5.0 | 1.6 | 2.5 | | 06/04/15 14:53 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 101 | % | 70-130 | | 1 | | 06/04/15 06:23 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 1 | | 06/04/15 06:23 | 17060-07-0 | |
| Toluene-d8 (S) | 109 | % | 70-130 | | 1 | | 06/04/15 06:23 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: MW-19** **Lab ID: 92252175003** Collected: 05/26/15 12:45 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | ND | ug/L | 2.0 | 0.66 | 1 | | 06/04/15 06:40 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 101 | % | 70-130 | | 1 | | 06/04/15 06:40 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 70-130 | | 1 | | 06/04/15 06:40 | 17060-07-0 | |
| Toluene-d8 (S) | 109 | % | 70-130 | | 1 | | 06/04/15 06:40 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: MW-20** **Lab ID: 92252175004** Collected: 05/26/15 11:15 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **1.2J** | ug/L | 2.0 | | 1 | | 06/08/15 16:14 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 98 | % | 70-130 | | 1 | | 06/08/15 16:14 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 100 | % | 70-130 | | 1 | | 06/08/15 16:14 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 1 | | 06/08/15 16:14 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: MW-35** **Lab ID: 92252175005** Collected: 05/26/15 11:30 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **125** | ug/L | 2.0 | 0.66 | 1 | | 06/04/15 06:58 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 100 | % | 70-130 | | 1 | | 06/04/15 06:58 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 1 | | 06/04/15 06:58 | 17060-07-0 | |
| Toluene-d8 (S) | 106 | % | 70-130 | | 1 | | 06/04/15 06:58 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: KRW-5** **Lab ID: 92252175006** Collected: 05/26/15 10:30 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **78800** | ug/L | 800 | 264 | 400 | | 06/04/15 07:51 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 101 | % | 70-130 | | 400 | | 06/04/15 07:51 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 400 | | 06/04/15 07:51 | 17060-07-0 | |
| Toluene-d8 (S) | 106 | % | 70-130 | | 400 | | 06/04/15 07:51 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: 106** **Lab ID: 92252175007** Collected: 05/26/15 11:40 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **66300** | ug/L | 1000 | 330 | 500 | | 06/04/15 08:09 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 99 | % | 70-130 | | 500 | | 06/04/15 08:09 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 70-130 | | 500 | | 06/04/15 08:09 | 17060-07-0 | |
| Toluene-d8 (S) | 107 | % | 70-130 | | 500 | | 06/04/15 08:09 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: KOCH NORTH
Pace Project No.: 92252175

**Sample: 107** **Lab ID: 92252175008** Collected: 05/26/15 12:00 Received: 05/30/15 09:00 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **28500** | ug/L | 1000 | 330 | 500 | | 06/04/15 08:26 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 101 | % | 70-130 | | 500 | | 06/04/15 08:26 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 70-130 | | 500 | | 06/04/15 08:26 | 17060-07-0 | |
| Toluene-d8 (S) | 106 | % | 70-130 | | 500 | | 06/04/15 08:26 | 2037-26-5 | |



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# QUALITY CONTROL DATA

Project: KOCH NORTH
Pace Project No.: 92252175

QC Batch: MSV/31970 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92252175001, 92252175002, 92252175003, 92252175005, 92252175006, 92252175007, 92252175008

METHOD BLANK: 1474412 Matrix: Water
Associated Lab Samples: 92252175001, 92252175002, 92252175003, 92252175005, 92252175006, 92252175007, 92252175008

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 06/04/15 02:33 | |
| 1,2-Dichloroethane-d4 (S) | % | 95 | 70-130 | 06/04/15 02:33 | |
| 4-Bromofluorobenzene (S) | % | 101 | 70-130 | 06/04/15 02:33 | |
| Toluene-d8 (S) | % | 105 | 70-130 | 06/04/15 02:33 | |

LABORATORY CONTROL SAMPLE: 1474413

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 102 | 102 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 95 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 101 | 70-130 | |
| Toluene-d8 (S) | % | | | 100 | 70-130 | |

MATRIX SPIKE SAMPLE: 1474419

| Parameter | Units | 92251848002 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 40 | 46.9 | 114 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 100 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 99 | 70-130 | |
| Toluene-d8 (S) | % | | | | 100 | 70-130 | |

SAMPLE DUPLICATE: 1474420

| Parameter | Units | 92252050002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 97 | 0 | | |
| 4-Bromofluorobenzene (S) | % | 100 | 102 | 2 | | |
| Toluene-d8 (S) | % | 107 | 105 | 1 | | |

**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: KOCH NORTH
Pace Project No.: 92252175

QC Batch: MSV/31998
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92252175004

METHOD BLANK: 1475726
Matrix: Water
Associated Lab Samples: 92252175004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 06/08/15 11:50 | |
| 1,2-Dichloroethane-d4 (S) | % | 106 | 70-130 | 06/08/15 11:50 | |
| 4-Bromofluorobenzene (S) | % | 97 | 70-130 | 06/08/15 11:50 | |
| Toluene-d8 (S) | % | 102 | 70-130 | 06/08/15 11:50 | |

LABORATORY CONTROL SAMPLE: 1475727

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 97.0 | 97 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 98 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 99 | 70-130 | |
| Toluene-d8 (S) | % | | | 103 | 70-130 | |

MATRIX SPIKE SAMPLE: 1479364

| Parameter | Units | 92251959002 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 40 | 43.5 | 109 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 96 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 103 | 70-130 | |
| Toluene-d8 (S) | % | | | | 99 | 70-130 | |

SAMPLE DUPLICATE: 1479365

| Parameter | Units | 92251959003 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 101 | 102 | 1 | | |
| 4-Bromofluorobenzene (S) | % | 97 | 99 | 3 | | |
| Toluene-d8 (S) | % | 103 | 103 | 0 | | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

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# QUALIFIERS

Project: KOCH NORTH
Pace Project No.: 92252175

## 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.

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.

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, Styrene, and Vinyl chloride.

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



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# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KOCH NORTH
Pace Project No.: 92252175

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92252175001** | **MW-16** | EPA 8260 | MSV/31970 | | |
| **92252175002** | **MW-18** | EPA 8260 | MSV/31970 | | |
| **92252175003** | **MW-19** | EPA 8260 | MSV/31970 | | |
| **92252175004** | **MW-20** | EPA 8260 | MSV/31998 | | |
| **92252175005** | **MW-35** | EPA 8260 | MSV/31970 | | |
| **92252175006** | **KRW-5** | EPA 8260 | MSV/31970 | | |
| **92252175007** | **106** | EPA 8260 | MSV/31970 | | |
| **92252175008** | **107** | EPA 8260 | MSV/31970 | | |



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| Pace Analytical® | Document Name: Sample Condition Upon Receipt (SCUR) | Document Revised: May 18, 2015 Page 1 of 2* |
|---|---|---|
| | Document Number: F-CHR-CS-003-rev.16 | Issuing Authority: Pace Huntersville Quality Office |

Client Name: Catlin Eng.

* Page 2 of 2 is for Internal Use Only

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1401 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor T1401 No Correction

Corrected Cooler Temp.: 3.9 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: 6/1/15 TH

Temp should be above freezing to 6°C

| | | Comments: |
|---|---|---|
| Chain of Custody Present: | ☒Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☒Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☒Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☒Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☒Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☒No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☒No ☐N/A | 7. |
| Sufficient Volume: | ☒Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☒Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☒Yes ☐No ☐N/A | |
| Containers Intact: | ☒Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☒N/A | 11. |
| Sample Labels match COC: | ☒Yes ☐No ☐N/A | 12. |
| -Includes date/time/ID/Analysis Matrix: WT | | |
| All containers needing preservation have been checked. | ☐Yes ☐No ☒N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes ☐No ☒N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☒Yes ☐No | |
| Samples checked for dechlorination: | ☐Yes ☐No ☒N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☒No ☐N/A | 15. |
| Trip Blank Present: | ☐Yes ☐No ☒N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☒N/A | |
| Pace Trip Blank Lot # (if purchased):_____ | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

| | | | |
|---|---|---|---|
| **SCURF Review:** | AMB | Date: | 6-1-15 |
| **SRF Review:** | AMB | Date: | 6-2-15 |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92252175

92252175

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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.

Page: 1 of 1

1960466

**Section A** Required Client Information:

Company: Cattlin Eng.
Address: 220 Old Dairy Rd
Wilmington, NC 28405
Email To: bill.walsh@cattlinusa.com
Phone: 910 452 5861 Fax: 910 452 7563
Requested Due Date/TAT:

**Section B** Required Project Information:

Report To: Bill Walsh
Copy To: Stacey Martin
Purchase Order No.:
Project Name: Koch North
Project Number: 201125

**Section C** Invoice Information:

Attention: Michael Christopher
Company Name: KA & ES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 3446-1

**REGULATORY AGENCY**

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

**Section D** Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N): Y/N; Analysis Test: MTBE XylenES - 8260

| ITEM # | SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED Composite Start DATE | COLLECTED Composite Start TIME | COLLECTED Composite End/Grab DATE | COLLECTED Composite End/Grab TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-16 | WT | G | 26 May | | | 1210 | | 3 | | | | X | | | | | X | | 001 |
| 2 | MW-18 | ↓ | ↓ | ↓ | | | 1230 | | 3 | | | | X | | | | | X | | 002 |
| 3 | MW-19 | ↓ | ↓ | ↓ | | | 1245 | | 3 | | | | X | | | | | X | | 003 |
| 4 | MW-20 | ↓ | ↓ | ↓ | | | 1115 | | 3 | | | | X | | | | | X | | 004 |
| 5 | MW-35 | ↓ | ↓ | ↓ | | | 1130 | | 3 | | | | X | | | | | X | | 005 |
| 6 | KRW-5 | ↓ | ↓ | ↓ | | | 1030 | | 3 | | | | X | | | | | X | | 006 |
| 7 | 106 | ↓ | ↓ | ↓ | | | 1140 | | 3 | | | | X | | | | | X | | 007 |
| 8 | 107 | ↓ | ↓ | ↓ | | | 1230 | | 3 | | | | X | | | | | X | | 008 |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS |
|---|---|---|---|---|---|---|---|
| | [signature] / Cattlin | 28 May 15 | 1730 | J. Dixon / Pace | 5/29/15 | 1500 | |
| | | | | [signature] / Pace HVL | 5/30/15 | 0900 | |
| | | | | | | | |
| | | | | | | | |

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: L.A. Wessell
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/26/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

August 05, 2015

Mike D. Mason
CATLIN Engineers & Scientists
220 Old Dairy Road
Wilmington, NC 28405

RE: Project: KOCH NORTH 201125
Pace Project No.: 92261046

Dear Mike Mason:
Enclosed are the analytical results for sample(s) received by the laboratory on July 30, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Bill Walsh, Catlin Engineers & Scientists



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Huntersville, NC 28078
(704)875-9092

# CERTIFICATIONS

Project: KOCH NORTH 201125
Pace Project No.: 92261046

**Charlotte Certification IDs**
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
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
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221



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## SAMPLE SUMMARY

Project: KOCH NORTH 201125
Pace Project No.: 92261046

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **92261046001** | **MW 20** | Water | 07/28/15 14:50 | 07/30/15 10:45 |



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## SAMPLE ANALYTE COUNT

Project: KOCH NORTH 201125
Pace Project No.: 92261046

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92261046001** | **MW 20** | EPA 8260 | CAH | 4 | PASI-C |



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# ANALYTICAL RESULTS

Project: KOCH NORTH 201125
Pace Project No.: 92261046

**Sample: MW 20** **Lab ID: 92261046001** Collected: 07/28/15 14:50 Received: 07/30/15 10:45 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **17700** | ug/L | 100 | 33.0 | 50 | | 08/05/15 10:02 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 117 | % | 70-130 | | 1 | | 08/04/15 00:44 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 92 | % | 70-130 | | 1 | | 08/04/15 00:44 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | | 1 | | 08/04/15 00:44 | 2037-26-5 | |



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# QUALITY CONTROL DATA

Project: KOCH NORTH 201125
Pace Project No.: 92261046

QC Batch: MSV/32820 — Analysis Method: EPA 8260
QC Batch Method: EPA 8260 — Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92261046001

METHOD BLANK: 1524619 — Matrix: Water
Associated Lab Samples: 92261046001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 08/03/15 19:22 | |
| 1,2-Dichloroethane-d4 (S) | % | 93 | 70-130 | 08/03/15 19:22 | |
| 4-Bromofluorobenzene (S) | % | 102 | 70-130 | 08/03/15 19:22 | |
| Toluene-d8 (S) | % | 98 | 70-130 | 08/03/15 19:22 | |

LABORATORY CONTROL SAMPLE: 1524620

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 105 | 105 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 92 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 107 | 70-130 | |
| Toluene-d8 (S) | % | | | 101 | 70-130 | |

MATRIX SPIKE SAMPLE: 1524621

| Parameter | Units | 92261040001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 0.72J | 40 | 41.1 | 101 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 101 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 107 | 70-130 | |
| Toluene-d8 (S) | % | | | | 99 | 70-130 | |

SAMPLE DUPLICATE: 1524622

| Parameter | Units | 92261040002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 95 | 104 | 9 | | |
| 4-Bromofluorobenzene (S) | % | 99 | 108 | 9 | | |
| Toluene-d8 (S) | % | 98 | 102 | 4 | | |

**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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# QUALIFIERS

Project: KOCH NORTH 201125
Pace Project No.: 92261046

## 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.

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.

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, Styrene, and Vinyl chloride.

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



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# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KOCH NORTH 201125
Pace Project No.: 92261046

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92261046001** | **MW 20** | EPA 8260 | MSV/32820 | | |



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| Pace Analytical® www.pacelabs.com | Document Name: **Sample Condition Upon Receipt (SCUR)** | Document Revised: May 15, 2015 Page 1 of 2* |
|---|---|---|
| | Document No.: F-ASV-CS-003-rev.14 | Issuing Authorities: Pace Asheville Quality Office |

Client Name: Catlin

* Page 2 of 2 is for Internal Use Only

**Courier (Circle):** (Fed Ex) UPS USPS Client Commercial Pace Other_____

**Custody Seal on Cooler/Box Present:** ☐ yes ☑ no Seals intact: ☑ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

**Thermometer Used:** IR Gun#3 -130265963 **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

IR Gun #4 SN:140290365 Other:_____

**Temp Correction Factor: Add / Subtract** 0 C

**Corrected Cooler Temp.:** 3.0 C **Biological Tissue is Frozen:** Yes No (N/A)

Date and Initials of person examining contents: 7/30 MS

Temp should be above freezing to 6°C

| | | Comments: |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT | ☑Yes ☐No ☐N/A | 12. |
| All containers needing preservation have been checked. | ☑Yes ☐No ☐N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☑Yes ☐No ☐N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes ☑No | |
| Samples checked for dechlorination: | ☐Yes ☐No ☑N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☐No ☑N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☑N/A | |
| Pace Trip Blank Lot # (if purchased):_____ | | |

Field Data Required? Y / N

**Client Notification/ Resolution:**

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**SCURF Review:** AMB Date: 7-30-15

**SRF Review:** AMB Date: 7-31-15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

**WO# : 92261046**

92261046

Pace Analytical
www.pacelabs.com

# 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

1903156

**Section A** Required Client Information:
Company: Cotlin
Address: 220 Old Dairy Rd.
Wilmington, NC 28405
Email To: Bill.Walsh@cotlinusa.com
Phone: 910 452 5861 Fax: 910 452 7563
Requested Due Date/TAT:

**Section B** Required Project Information:
Report To: Bill Walsh
Copy To:
Purchase Order No.:
Project Name: Koch North
Project Number: 201125

**Section C** Invoice Information:
Attention: Michael Christopher
Company Name: KR & ES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 3446-1

REGULATORY AGENCY
☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____
Site Location STATE: NC

**Section D** Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Analysis Test: VOC/BTEX/MTBE

| ITEM # | SAMPLE ID | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED Composite Start Date | Composite Start Time | Composite End/Grab Date | Composite End/Grab Time | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test (Y/N) | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW 20 | WT | G | | | 23Jul | 1750 | | 3 | | | | X | | | | | X | | 92261046 |
| 2 | | | | | | | | | | | | | | | | | | | | 001 |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [signature] / Cotlin | 23Jul15 | 1700 | J. Dixon / Pace | 7/29/15 | 1525 | | | | |
| | | | | Matt Stewart AVL | 7/30/15 | 1045 | 3.0 | Y | N | Y |
| | | | | | | | Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: L A Wessell
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 07/28/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

August 13, 2015

Mike D. Mason
CATLIN Engineers & Scientists
220 Old Dairy Road
Wilmington, NC 28405

RE: Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

Dear Mike Mason:
Enclosed are the analytical results for sample(s) received by the laboratory on August 06, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Bill Walsh, Catlin Engineers & Scientists



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# CERTIFICATIONS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Charlotte Certification IDs**
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
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Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221



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## SAMPLE SUMMARY

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **92262186001** | **107** | Water | 08/04/15 13:45 | 08/06/15 11:50 |
| **92262186002** | **117** | Water | 08/04/15 13:50 | 08/06/15 11:50 |
| **92262186003** | **MW-2** | Water | 08/04/15 13:45 | 08/06/15 11:50 |
| **92262186004** | **MW-8** | Water | 08/04/15 14:20 | 08/06/15 11:50 |
| **92262186005** | **MW-10R** | Water | 08/04/15 13:26 | 08/06/15 11:50 |
| **92262186006** | **MW-11** | Water | 08/04/15 13:25 | 08/06/15 11:50 |
| **92262186007** | **MW-12** | Water | 08/04/15 14:05 | 08/06/15 11:50 |
| **92262186008** | **MW-13** | Water | 08/04/15 14:15 | 08/06/15 11:50 |
| **92262186009** | **MW-16** | Water | 08/04/15 14:10 | 08/06/15 11:50 |
| **92262186010** | **MW-18** | Water | 08/04/15 14:47 | 08/06/15 11:50 |
| **92262186011** | **MW-19** | Water | 08/04/15 14:45 | 08/06/15 11:50 |
| **92262186012** | **MW-35** | Water | 08/04/15 14:50 | 08/06/15 11:50 |
| **92262186013** | **MW-36** | Water | 08/04/15 13:05 | 08/06/15 11:50 |
| **92262186014** | **MW-37** | Water | 08/04/15 12:57 | 08/06/15 11:50 |
| **92262186015** | **KRW-5** | Water | 08/04/15 14:00 | 08/06/15 11:50 |



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# SAMPLE ANALYTE COUNT

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92262186001** | **107** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186002** | **117** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186003** | **MW-2** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186004** | **MW-8** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186005** | **MW-10R** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186006** | **MW-11** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186007** | **MW-12** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186008** | **MW-13** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186009** | **MW-16** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186010** | **MW-18** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186011** | **MW-19** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186012** | **MW-35** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186013** | **MW-36** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186014** | **MW-37** | EPA 8260 | CAH | 4 | PASI-C |
| **92262186015** | **KRW-5** | EPA 8260 | CAH | 4 | PASI-C |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: 107** **Lab ID: 92262186001** Collected: 08/04/15 13:45 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **6270** | ug/L | 500 | 165 | 250 | | 08/09/15 08:27 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 107 | % | 70-130 | | 250 | | 08/09/15 08:27 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 70-130 | | 250 | | 08/09/15 08:27 | 17060-07-0 | |
| Toluene-d8 (S) | 102 | % | 70-130 | | 250 | | 08/09/15 08:27 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: 117** **Lab ID: 92262186002** Collected: 08/04/15 13:50 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **13300** | ug/L | 100 | 33.0 | 50 | | 08/10/15 16:55 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 105 | % | 70-130 | | 50 | | 08/10/15 16:55 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 93 | % | 70-130 | | 50 | | 08/10/15 16:55 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | | 50 | | 08/10/15 16:55 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-2** **Lab ID: 92262186003** Collected: 08/04/15 13:45 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **8900** | ug/L | 100 | 33.0 | 50 | | 08/09/15 11:00 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 104 | % | 70-130 | | 50 | | 08/09/15 11:00 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 94 | % | 70-130 | | 50 | | 08/09/15 11:00 | 17060-07-0 | |
| Toluene-d8 (S) | 103 | % | 70-130 | | 50 | | 08/09/15 11:00 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-8** **Lab ID: 92262186004** Collected: 08/04/15 14:20 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **101** | ug/L | 2.0 | 0.66 | 1 | | 08/10/15 14:23 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 104 | % | 70-130 | | 1 | | 08/10/15 14:23 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 70-130 | | 1 | | 08/10/15 14:23 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 1 | | 08/10/15 14:23 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-10R** **Lab ID: 92262186005** Collected: 08/04/15 13:26 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **31200** | ug/L | 500 | 165 | 250 | | 08/09/15 09:35 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 106 | % | 70-130 | | 250 | | 08/09/15 09:35 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 70-130 | | 250 | | 08/09/15 09:35 | 17060-07-0 | |
| Toluene-d8 (S) | 103 | % | 70-130 | | 250 | | 08/09/15 09:35 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-11** **Lab ID: 92262186006** Collected: 08/04/15 13:25 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **1.5J** | ug/L | 2.0 | 0.66 | 1 | | 08/09/15 05:38 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 106 | % | 70-130 | | 1 | | 08/09/15 05:38 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 1 | | 08/09/15 05:38 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | | 1 | | 08/09/15 05:38 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-12** **Lab ID: 92262186007** Collected: 08/04/15 14:05 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | ND | ug/L | 2.0 | 0.66 | 1 | | 08/10/15 14:40 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 104 | % | 70-130 | | 1 | | 08/10/15 14:40 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 70-130 | | 1 | | 08/10/15 14:40 | 17060-07-0 | |
| Toluene-d8 (S) | 102 | % | 70-130 | | 1 | | 08/10/15 14:40 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-13** **Lab ID: 92262186008** Collected: 08/04/15 14:15 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **8270** | ug/L | 50.0 | 16.5 | 25 | | 08/09/15 09:01 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 105 | % | 70-130 | | 25 | | 08/09/15 09:01 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 96 | % | 70-130 | | 25 | | 08/09/15 09:01 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | | 25 | | 08/09/15 09:01 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-16** **Lab ID: 92262186009** Collected: 08/04/15 14:10 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **24400** | ug/L | 200 | 66.0 | 100 | | 08/10/15 17:29 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 105 | % | 70-130 | | 100 | | 08/10/15 17:29 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 93 | % | 70-130 | | 100 | | 08/10/15 17:29 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | | 100 | | 08/10/15 17:29 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-18** **Lab ID: 92262186010** Collected: 08/04/15 14:47 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **322** | ug/L | 2.0 | 0.66 | 1 | | 08/09/15 05:55 | 179601-23-1 | M1 |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 109 | % | 70-130 | | 1 | | 08/09/15 05:55 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 70-130 | | 1 | | 08/09/15 05:55 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 1 | | 08/09/15 05:55 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-19** **Lab ID: 92262186011** Collected: 08/04/15 14:45 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | ND | ug/L | 2.0 | 0.66 | 1 | | 08/09/15 06:46 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 108 | % | 70-130 | | 1 | | 08/09/15 06:46 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 97 | % | 70-130 | | 1 | | 08/09/15 06:46 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 1 | | 08/09/15 06:46 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-35** **Lab ID: 92262186012** Collected: 08/04/15 14:50 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **100** | ug/L | 2.0 | 0.66 | 1 | | 08/09/15 07:20 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 107 | % | 70-130 | | 1 | | 08/09/15 07:20 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 98 | % | 70-130 | | 1 | | 08/09/15 07:20 | 17060-07-0 | |
| Toluene-d8 (S) | 102 | % | 70-130 | | 1 | | 08/09/15 07:20 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-36** **Lab ID: 92262186013** Collected: 08/04/15 13:05 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **25300** | ug/L | 200 | 66.0 | 100 | | 08/10/15 17:46 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 109 | % | 70-130 | | 100 | | 08/10/15 17:46 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 100 | | 08/10/15 17:46 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 100 | | 08/10/15 17:46 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: MW-37** **Lab ID: 92262186014** Collected: 08/04/15 12:57 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | ND | ug/L | 2.0 | 0.66 | 1 | | 08/09/15 07:36 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 106 | % | 70-130 | | 1 | | 08/09/15 07:36 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 97 | % | 70-130 | | 1 | | 08/09/15 07:36 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 1 | | 08/09/15 07:36 | 2037-26-5 | |



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# ANALYTICAL RESULTS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

**Sample: KRW-5** **Lab ID: 92262186015** Collected: 08/04/15 14:00 Received: 08/06/15 11:50 Matrix: Water

| Parameters | Results | Units | Report Limit | MDL | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | | |
| m&p-Xylene | **60900** | ug/L | 500 | 165 | 250 | | 08/09/15 04:30 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | | |
| 4-Bromofluorobenzene (S) | 104 | % | 70-130 | | 250 | | 08/09/15 04:30 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-130 | | 250 | | 08/09/15 04:30 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | | 250 | | 08/09/15 04:30 | 2037-26-5 | |



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# QUALITY CONTROL DATA

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

QC Batch: MSV/32896 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92262186015

METHOD BLANK: 1529486 | Matrix: Water
Associated Lab Samples: 92262186015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 08/09/15 01:23 | |
| 1,2-Dichloroethane-d4 (S) | % | 90 | 70-130 | 08/09/15 01:23 | |
| 4-Bromofluorobenzene (S) | % | 104 | 70-130 | 08/09/15 01:23 | |
| Toluene-d8 (S) | % | 102 | 70-130 | 08/09/15 01:23 | |

LABORATORY CONTROL SAMPLE: 1529487

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 92.6 | 93 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 92 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 108 | 70-130 | |
| Toluene-d8 (S) | % | | | 101 | 70-130 | |

MATRIX SPIKE SAMPLE: 1529488

| Parameter | Units | 92262467008 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 40 | 40.4 | 100 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 86 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 104 | 70-130 | |
| Toluene-d8 (S) | % | | | | 102 | 70-130 | |

SAMPLE DUPLICATE: 1529489

| Parameter | Units | 92262467007 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 92 | 95 | 3 | | |
| 4-Bromofluorobenzene (S) | % | 103 | 106 | 3 | | |
| Toluene-d8 (S) | % | 101 | 102 | 2 | | |

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# QUALITY CONTROL DATA

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

QC Batch: MSV/32897 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92262186001, 92262186003, 92262186005, 92262186006, 92262186008, 92262186010, 92262186011, 92262186012, 92262186014

METHOD BLANK: 1529490 | Matrix: Water
Associated Lab Samples: 92262186001, 92262186003, 92262186005, 92262186006, 92262186008, 92262186010, 92262186011, 92262186012, 92262186014

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 08/09/15 01:40 | |
| 1,2-Dichloroethane-d4 (S) | % | 91 | 70-130 | 08/09/15 01:40 | |
| 4-Bromofluorobenzene (S) | % | 106 | 70-130 | 08/09/15 01:40 | |
| Toluene-d8 (S) | % | 101 | 70-130 | 08/09/15 01:40 | |

LABORATORY CONTROL SAMPLE: 1529491

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 89.7 | 90 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 88 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 106 | 70-130 | |
| Toluene-d8 (S) | % | | | 99 | 70-130 | |

MATRIX SPIKE SAMPLE: 1529492

| Parameter | Units | 92262186010 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 322 | 40 | 405 | 208 | 70-130 | E,M1 |
| 1,2-Dichloroethane-d4 (S) | % | | | | 86 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 104 | 70-130 | |
| Toluene-d8 (S) | % | | | | 101 | 70-130 | |

SAMPLE DUPLICATE: 1529493

| Parameter | Units | 92262186011 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | ND | | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 97 | 0 | | |
| 4-Bromofluorobenzene (S) | % | 108 | 104 | 3 | | |
| Toluene-d8 (S) | % | 101 | 102 | 1 | | |

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# QUALITY CONTROL DATA

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

QC Batch: MSV/32912 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92262186002, 92262186004, 92262186007, 92262186009, 92262186013

METHOD BLANK: 1529798 Matrix: Water
Associated Lab Samples: 92262186002, 92262186004, 92262186007, 92262186009, 92262186013

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 08/10/15 11:17 | |
| 1,2-Dichloroethane-d4 (S) | % | 95 | 70-130 | 08/10/15 11:17 | |
| 4-Bromofluorobenzene (S) | % | 103 | 70-130 | 08/10/15 11:17 | |
| Toluene-d8 (S) | % | 101 | 70-130 | 08/10/15 11:17 | |

LABORATORY CONTROL SAMPLE: 1529799

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 93.4 | 93 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 93 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 110 | 70-130 | |
| Toluene-d8 (S) | % | | | 99 | 70-130 | |

MATRIX SPIKE SAMPLE: 1529801

| Parameter | Units | 92262183011 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 10000 | 2000 | 11900 | 95 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 91 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 108 | 70-130 | |
| Toluene-d8 (S) | % | | | | 100 | 70-130 | |

SAMPLE DUPLICATE: 1529800

| Parameter | Units | 92262186002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 13300 | 14200 | 6 | 30 | |
| 1,2-Dichloroethane-d4 (S) | % | 93 | 93 | 1 | | |
| 4-Bromofluorobenzene (S) | % | 105 | 107 | 2 | | |
| Toluene-d8 (S) | % | 100 | 103 | 3 | | |

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# QUALIFIERS

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

## 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.

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.

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, Styrene, and Vinyl chloride.

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 |

## ANALYTE QUALIFIERS

| | |
|---|---|
| E | Analyte concentration exceeded the calibration range. The reported result is estimated. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |



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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FORMER FHR PX FACILITY
Pace Project No.: 92262186

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92262186001** | **107** | EPA 8260 | MSV/32897 | | |
| **92262186002** | **117** | EPA 8260 | MSV/32912 | | |
| **92262186003** | **MW-2** | EPA 8260 | MSV/32897 | | |
| **92262186004** | **MW-8** | EPA 8260 | MSV/32912 | | |
| **92262186005** | **MW-10R** | EPA 8260 | MSV/32897 | | |
| **92262186006** | **MW-11** | EPA 8260 | MSV/32897 | | |
| **92262186007** | **MW-12** | EPA 8260 | MSV/32912 | | |
| **92262186008** | **MW-13** | EPA 8260 | MSV/32897 | | |
| **92262186009** | **MW-16** | EPA 8260 | MSV/32912 | | |
| **92262186010** | **MW-18** | EPA 8260 | MSV/32897 | | |
| **92262186011** | **MW-19** | EPA 8260 | MSV/32897 | | |
| **92262186012** | **MW-35** | EPA 8260 | MSV/32897 | | |
| **92262186013** | **MW-36** | EPA 8260 | MSV/32912 | | |
| **92262186014** | **MW-37** | EPA 8260 | MSV/32897 | | |
| **92262186015** | **KRW-5** | EPA 8260 | MSV/32896 | | |



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| Pace Analytical® www.pacelabs.com | Document Name: **Sample Condition Upon Receipt (SCUR)** | Document Revised: May 15, 2015 Page 1 of 2* |
|---|---|---|
| | Document No.: F-RAL-CS-001-rev.03 | Issuing Authorities: Pace Raleigh Quality Office |

*Page 2 of 2 is for Internal Use Only

Client Name: Caitlin Engineering

**Courier (Circle):** Fed Ex UPS USPS (Client) Commercial Pace Other_____

**Custody Seal on Cooler/Box Present:** ☐ yes ☑ no **Seals intact:** ☑ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

**Circle Thermometer Used: IR Gun SN:122065387 Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

**IR Gun Back Up SN:122065371**

**Temp Correction Factor:** (Add / Subtract) 0.2 C

**Corrected Cooler Temp.:** 4.1 C **Biological Tissue is Frozen:** Yes No (N/A)

Temp should be above freezing to 6°C

**Date and Initials of person examining contents / Preservation check:** NAC 8/6/15

| | | Comments: |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WA | ☑Yes ☐No ☐N/A | 12. |
| All containers needing preservation have been checked. | ☑Yes ☐No ☐N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☑Yes ☐No ☐N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☑Yes ☐No | |
| Samples checked for dechlorination: | ☑Yes ☐No ☐N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☐No ☑N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☑N/A | |
| Pace Trip Blank Lot # (If purchased): | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**SCURF /SRF Review::** AMB AMB **Date:** 8-6-15 8-7-15

Place label here

WO#: 92262186

92262186

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)

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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.

Page: 1 of 2

1995008

**Section A** Required Client Information:
Company: CATLIN Eng & Sci
Address: 220 old Dairy Rd
Wilm NC 28405
Email To: Sean.oneil@catlinusa.com
Phone: 919-838-2875 Fax:
Requested Due Date/TAT: Standard

**Section B** Required Project Information:
Report To: Sean O'Neil
Copy To: Bill Walsh
Purchase Order No.:
Project Name: Former FHR Px Facility
Project Number: 201-125

**Section C** Invoice Information:
Attention: Michael Christopher
Company Name: KR & ES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 3446-1

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Analysis Test: M/P Xylenes - 8260

| ITEM # | SAMPLE ID | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED Composite Start DATE | COLLECTED Composite Start TIME | COLLECTED Composite End/Grab DATE | COLLECTED Composite End/Grab TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test (Y/N) | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 107 | WT | G | | | 8/4 | 1345 | | 3 | | | | X | | | | | X | | 001 |
| 2 | 117 | ↓ | ↓ | | | ↓ | 1350 | | ↓ | | | | X | | | | | X | | 002 |
| 3 | MW-2 | | | | | | 1345 | | | | | | X | | | | | X | | 003 |
| 4 | MW-8 | | | | | | 1420 | | | | | | X | | | | | X | | 004 |
| 5 | MW-10R | | | | | | 1326 | | | | | | X | | | | | X | | 005 |
| 6 | MW-11 | | | | | | 1325 | | | | | | X | | | | | X | | 006 |
| 7 | MW-12 | | | | | | 1405 | | | | | | X | | | | | X | | 007 |
| 8 | MW-13 | | | | | | 1415 | | | | | | X | | | | | X | | 008 |
| 9 | MW-16 | | | | | | 1410 | | | | | | X | | | | | X | | 009 |
| 10 | MW-18 | | | | | | 1447 | | | | | | X | | | | | X | | 010 |
| 11 | MW-19 | ↓ | ↓ | | | ↓ | 1445 | | ↓ | | | | X | | | | | X | | 011 |
| 12 | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [signature] | 8/6 | 1148 | [signature] | 8/6/15 | 1150 | 4.1 | Y | N | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Sean O'Neil
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8/05/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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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.

Page: 2 of 2

1995007

**Section A** Required Client Information:
Company: CATLIN Eng & Sci
Address: 220 Old Dairy Rd
Wilm NC 28405
Email To: sean.oneil@catlinusa.com
Phone: 919-838-2875 Fax:
Requested Due Date/TAT: Standard

**Section B** Required Project Information:
Report To: Sean O'Neil
Copy To: Bill Walsh
Purchase Order No.:
Project Name: Former FHR Pit Facility
Project Number: 201125

**Section C** Invoice Information:
Attention: Michael Christopher
Company Name: KR-ES
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NC

**Section D** Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N): m/p xylenes - 8260

| ITEM # | SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED Composite Start Date | Composite Start Time | Composite End/Grab Date | Composite End/Grab Time | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test (Y/N) | m/p xylenes - 8260 | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-35 | WT | G | | | 8/4 | 1450 | | 3 | | | | X | | | | | | X | | 012 |
| 2 | MW-36 | ↓ | ↓ | | | ↓ | 1305 | | ↓ | | | | X | | | | | | X | | 013 |
| 3 | MW-37 | ↓ | ↓ | | | ↓ | 1257 | | ↓ | | | | X | | | | | | X | | 014 |
| 4 | KRW-5 | ↓ | ↓ | | | ↓ | 1400 | | ↓ | | | | X | | | | | | X | | 015 |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |

22602186

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | S-O'N | 8/6 | 1148 | [illegible] | 8/6/15 | 1150 | 4.1 | Y | N | Y |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Sean O'Neil
SIGNATURE of SAMPLER: S-O'N
DATE Signed (MM/DD/YY): 08/05/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

**Pace Analytical Services, Inc.**
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

September 08, 2015

Bill Walsh
Catlin Eng
220 Old Dairy Rd
Wilmington, NC 28405

RE: Project: KOCH NORTH 201-125
Pace Project No.: 92265219

Dear Bill Walsh:
Enclosed are the analytical results for sample(s) received by the laboratory on August 27, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
Project Manager

Enclosures

**REPORT OF LABORATORY ANALYSIS**

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# CERTIFICATIONS

Project: KOCH NORTH 201-125
Pace Project No.: 92265219

**Charlotte Certification IDs**
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
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
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221



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# ANALYTICAL RESULTS

Project: KOCH NORTH 201-125
Pace Project No.: 92265219

**Sample: MW-20** **Lab ID: 92265219001** Collected: 08/25/15 09:15 Received: 08/27/15 10:40 Matrix: Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260 MSV Low Level** | Analytical Method: EPA 8260 | | | | | | | |
| m&p-Xylene | ND | ug/L | 2.0 | 1 | | 08/31/15 18:04 | 179601-23-1 | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 101 | % | 70-130 | 1 | | 08/31/15 18:04 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 119 | % | 70-130 | 1 | | 08/31/15 18:04 | 17060-07-0 | |
| Toluene-d8 (S) | 102 | % | 70-130 | 1 | | 08/31/15 18:04 | 2037-26-5 | |



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# QUALITY CONTROL DATA

Project: KOCH NORTH 201-125
Pace Project No.: 92265219

QC Batch: MSV/33187
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92265219001

METHOD BLANK: 1545165
Matrix: Water
Associated Lab Samples: 92265219001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 2.0 | 08/31/15 14:41 | |
| 1,2-Dichloroethane-d4 (S) | % | 112 | 70-130 | 08/31/15 14:41 | |
| 4-Bromofluorobenzene (S) | % | 100 | 70-130 | 08/31/15 14:41 | |
| Toluene-d8 (S) | % | 103 | 70-130 | 08/31/15 14:41 | |

LABORATORY CONTROL SAMPLE: 1545166

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | 100 | 99.8 | 100 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 112 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 106 | 70-130 | |
| Toluene-d8 (S) | % | | | 101 | 70-130 | |

MATRIX SPIKE SAMPLE: 1545801

| Parameter | Units | 92265237001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 40 | 43.1 | 108 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 111 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | | 104 | 70-130 | |
| Toluene-d8 (S) | % | | | | 103 | 70-130 | |

SAMPLE DUPLICATE: 1545802

| Parameter | Units | 92265219001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/L | ND | 22.8 | | |
| 1,2-Dichloroethane-d4 (S) | % | 119 | 119 | 0 | |
| 4-Bromofluorobenzene (S) | % | 101 | 102 | 1 | |
| Toluene-d8 (S) | % | 102 | 100 | 2 | |

**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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Huntersville, NC 28078
(704)875-9092

# QUALIFIERS

Project: KOCH NORTH 201-125
Pace Project No.: 92265219

**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.

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.

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, Styrene, and Vinyl chloride.

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.



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Huntersville, NC 28078
(704)875-9092

# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KOCH NORTH 201-125
Pace Project No.: 92265219

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92265219001** | **MW-20** | EPA 8260 | MSV/33187 | | |



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| Pace Analytical® www.pacelabs.com | Document Name: **Sample Condition Upon Receipt (SCUR)** | Document Revised: May 15, 2015 Page 1 of 2* |
|---|---|---|
| | Document No.: F-ASV-CS-003-rev.14 | Issuing Authorities: Pace Asheville Quality Office |

Client Name: Catlin Eng.

* Page 2 of 2 is for Internal Use Only

**Courier (Circle):** Fed Ex UPS USPS Client Commercial Pace Other_____

**Custody Seal on Cooler/Box Present:** ☐ yes ☑ no **Seals intact:** ☑ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

**Thermometer Used:** IR Gun#3 -130265963 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

IR Gun #4 SN:140290365 Other:_____

**Temp Correction Factor: Add / Subtract** 0 C

**Corrected Cooler Temp.:** 3.0 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C **Comments:**

**Date and Initials of person examining contents:** 8.27 MS

| | | |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: | ☑Yes ☐No ☐N/A | 12. |
| -Includes date/time/ID/Analysis Matrix: WT | | |
| All containers needing preservation have been checked. | ☑Yes ☐No ☐N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☑Yes ☐No ☐N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes ☑No | |
| Samples checked for dechlorination: | ☐Yes ☐No ☑N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☐No ☑N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☑N/A | |
| Pace Trip Blank Lot # (if purchased):_____ | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

| | | | |
|---|---|---|---|
| **SCURF Review:** | [illegible] | Date: | 8/27 |
| **SRF Review:** | [illegible] | Date: | 8/28 |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

**WO# : 92265219**

92265219

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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.

Page: 1 of 1

1821482

**Section A** Required Client Information:
- Company: Cattin Eng.
- Address: 220 Old Dairy Rd. Wilmington, NC 28405
- Email To: bill.walsh@cattinusa.com
- Phone:
- Fax:
- Requested Due Date/TAT:

**Section B** Required Project Information:
- Report To: Bill Walsh
- Copy To:
- Purchase Order No.:
- Project Name: KOCH NORTH
- Project Number: 201-125

**Section C** Invoice Information:
- Attention: Michael Christopher
- Company Name: KR&ES
- Address:
- Pace Quote Reference:
- Pace Project Manager:
- Pace Profile #: 7586-1

**REGULATORY AGENCY**
- ☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Analysis Test: m/p-xylenes - 8260

| ITEM # | SAMPLE ID | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED COMPOSITE START DATE | COLLECTED COMPOSITE START TIME | COLLECTED COMPOSITE END/GRAB DATE | COLLECTED COMPOSITE END/GRAB TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | NaOH | $Na_2S_2O_3$ | Methanol | Other | Analysis Test (Y/N) | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-20 | WT | G | | | 25Aug | 0915 | | 3 | | | | X | | | | | X | | 92265219 001 |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [signature] / Cattin | 25Aug15 | 1700 | [signature] | 8/25/15 | 1700 | | | | |
| | [signature] | 8/26/15 | 1415 | J. Bixen / Pace | 8/26/15 | 1515 | | | | |
| | | | | [signature] AWL | 8/27/15 | 1040 | 3.0 | Y | N | Y |
| | | | | | | | | | | |

ORIGINAL

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: L A Wessell
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM/DD/YY): 08/25/15

Temp In °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

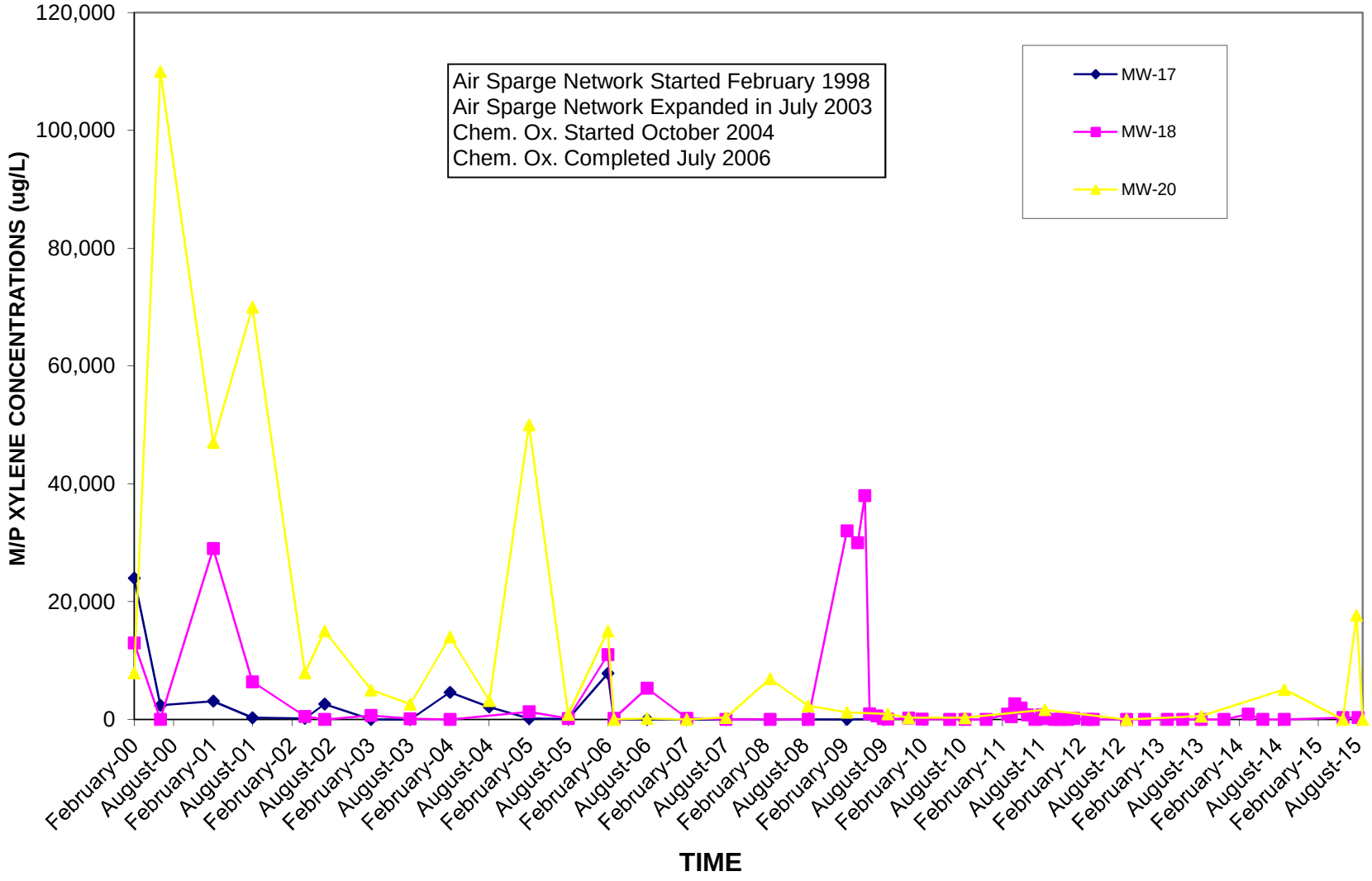
*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

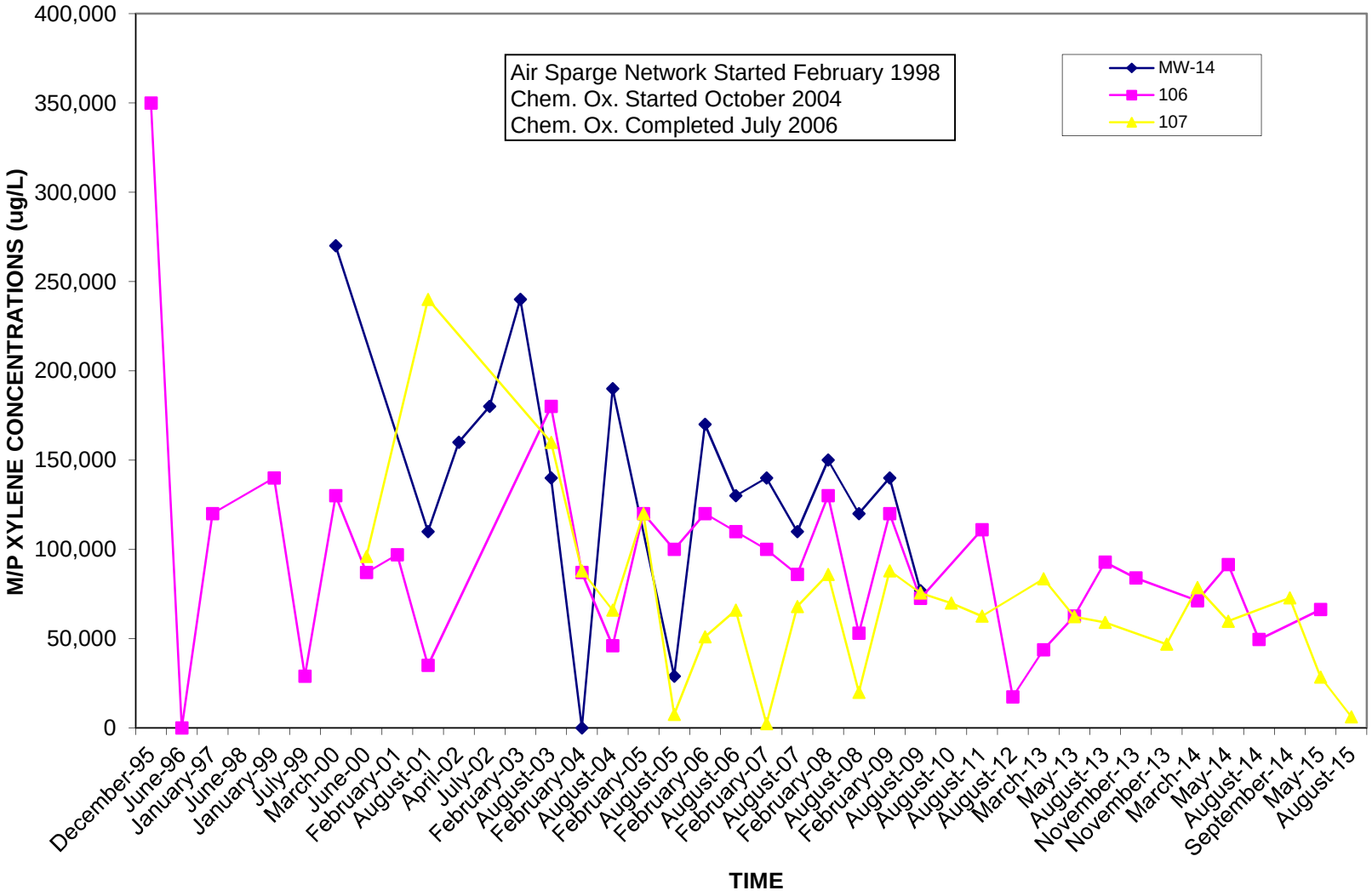
# APPENDIX B

## GRAPHS – GROUNDWATER QUALITY DATA FOR SELECTED MONITORING WELLS

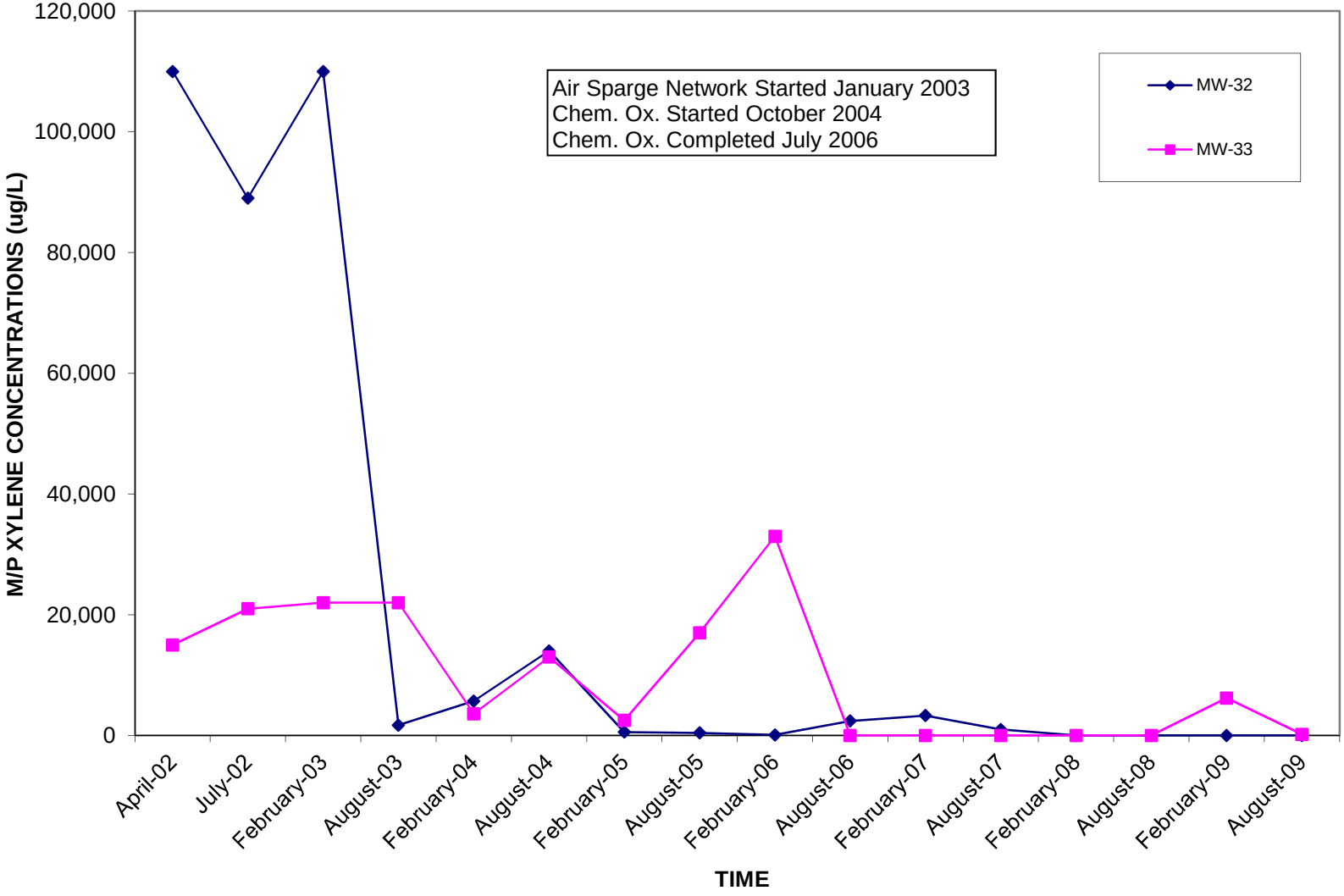
## MONITORING WELLS ASSOCIATED WITH AIR SPARGE NETWORK A



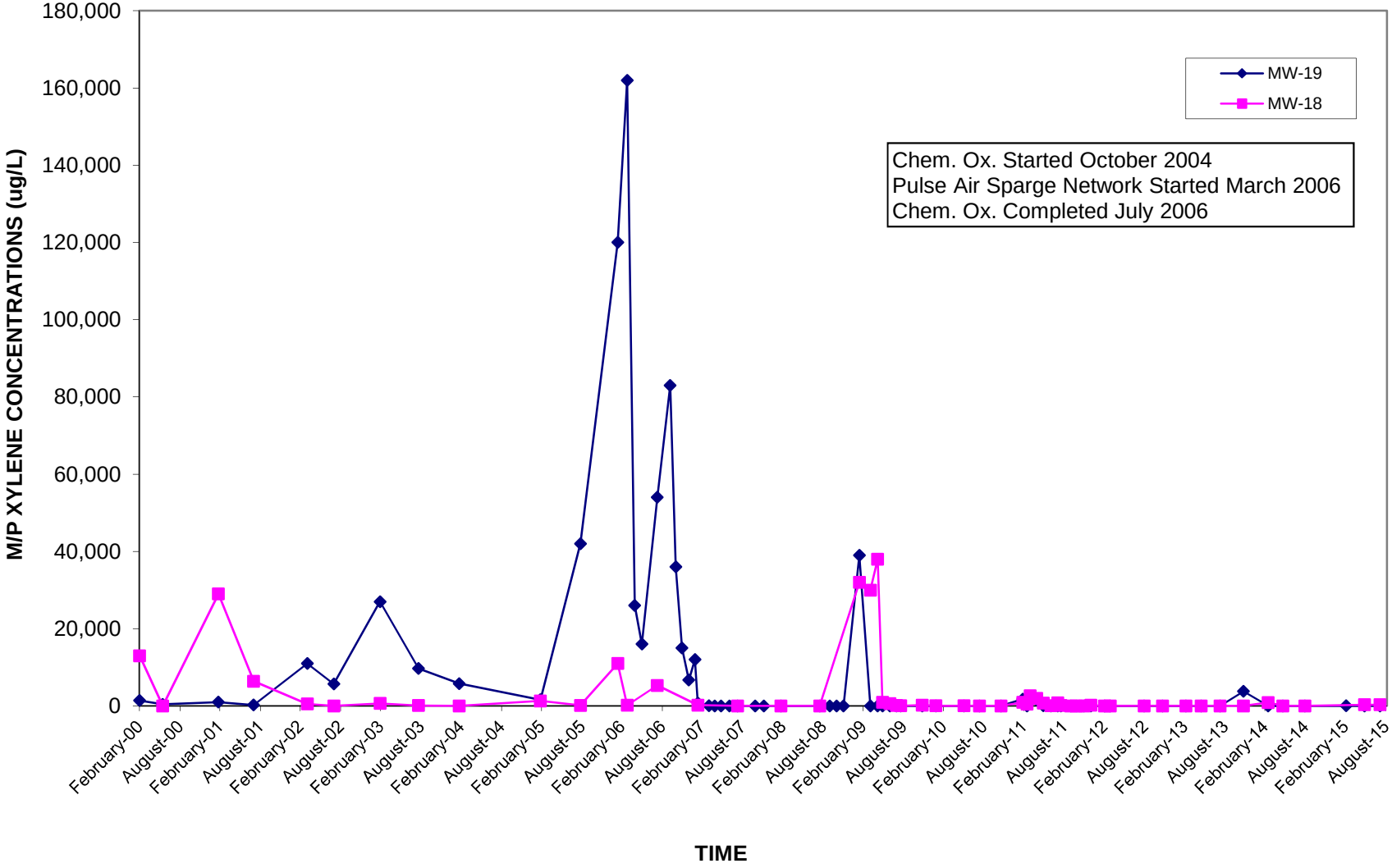
## MONITORING WELL ASSOCIATED WITH AIR SPARGE NETWORK B



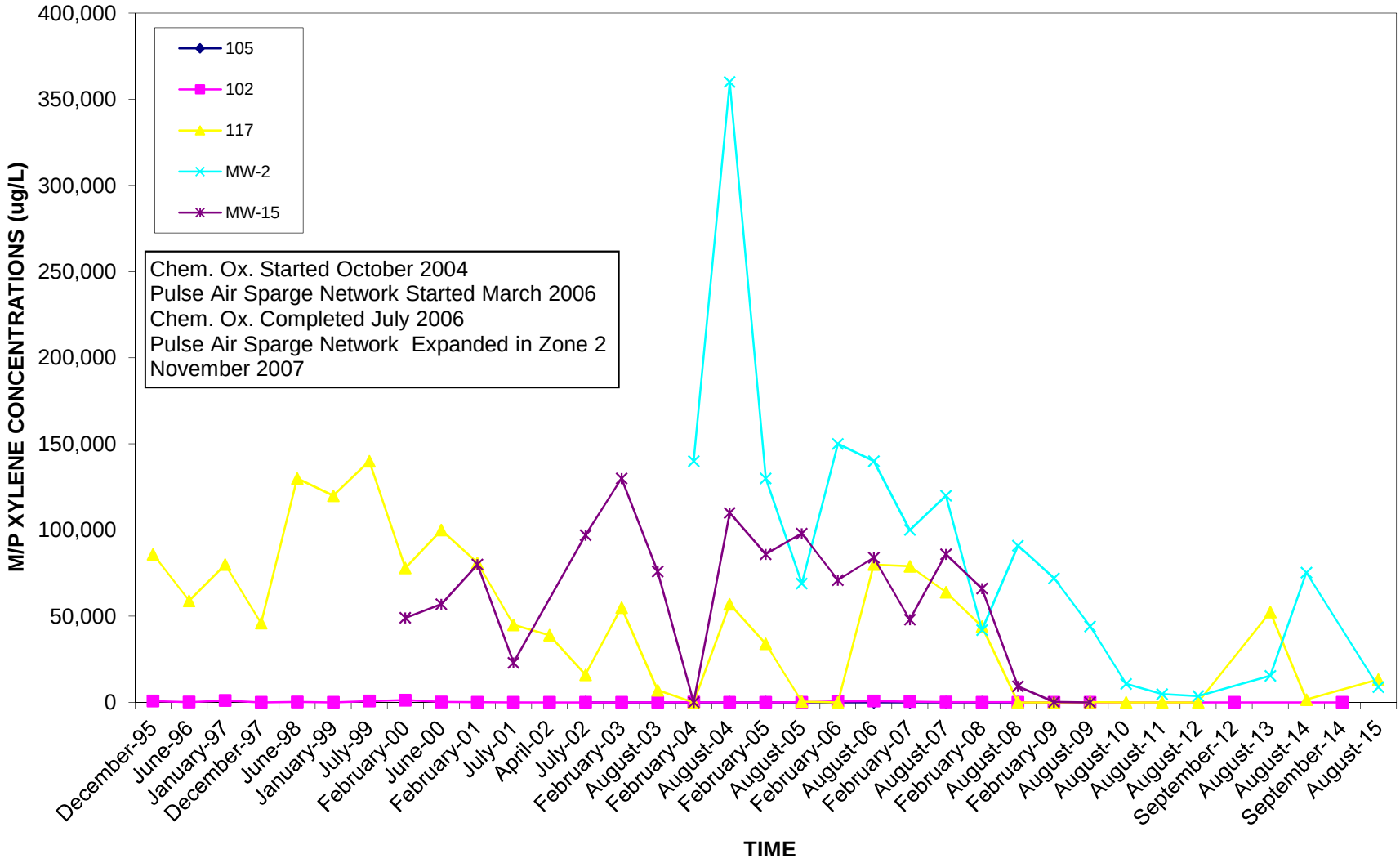
## MONITORING WELLS ASSOCIATED WITH AIR SPARGE NETWORK C



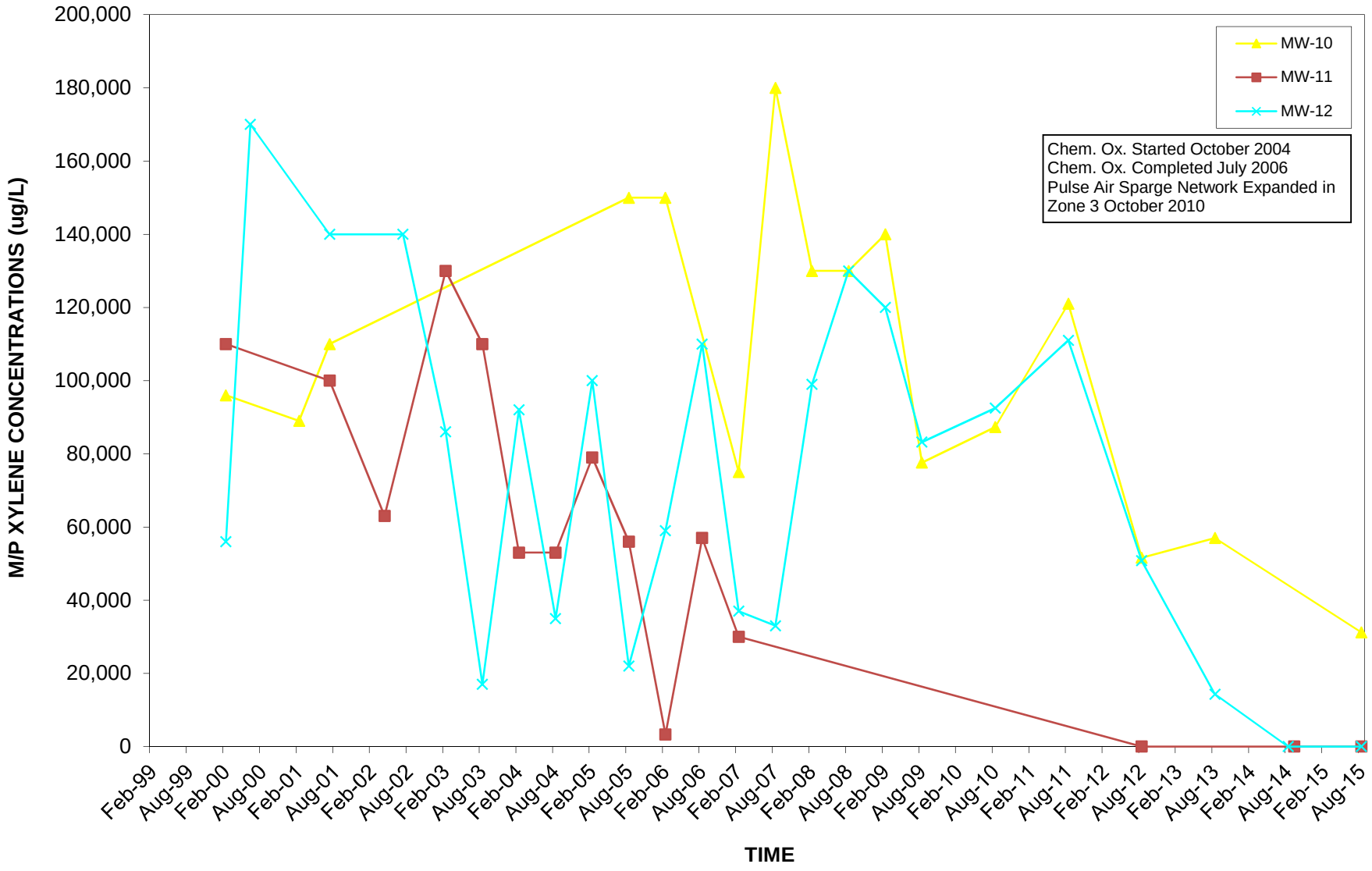
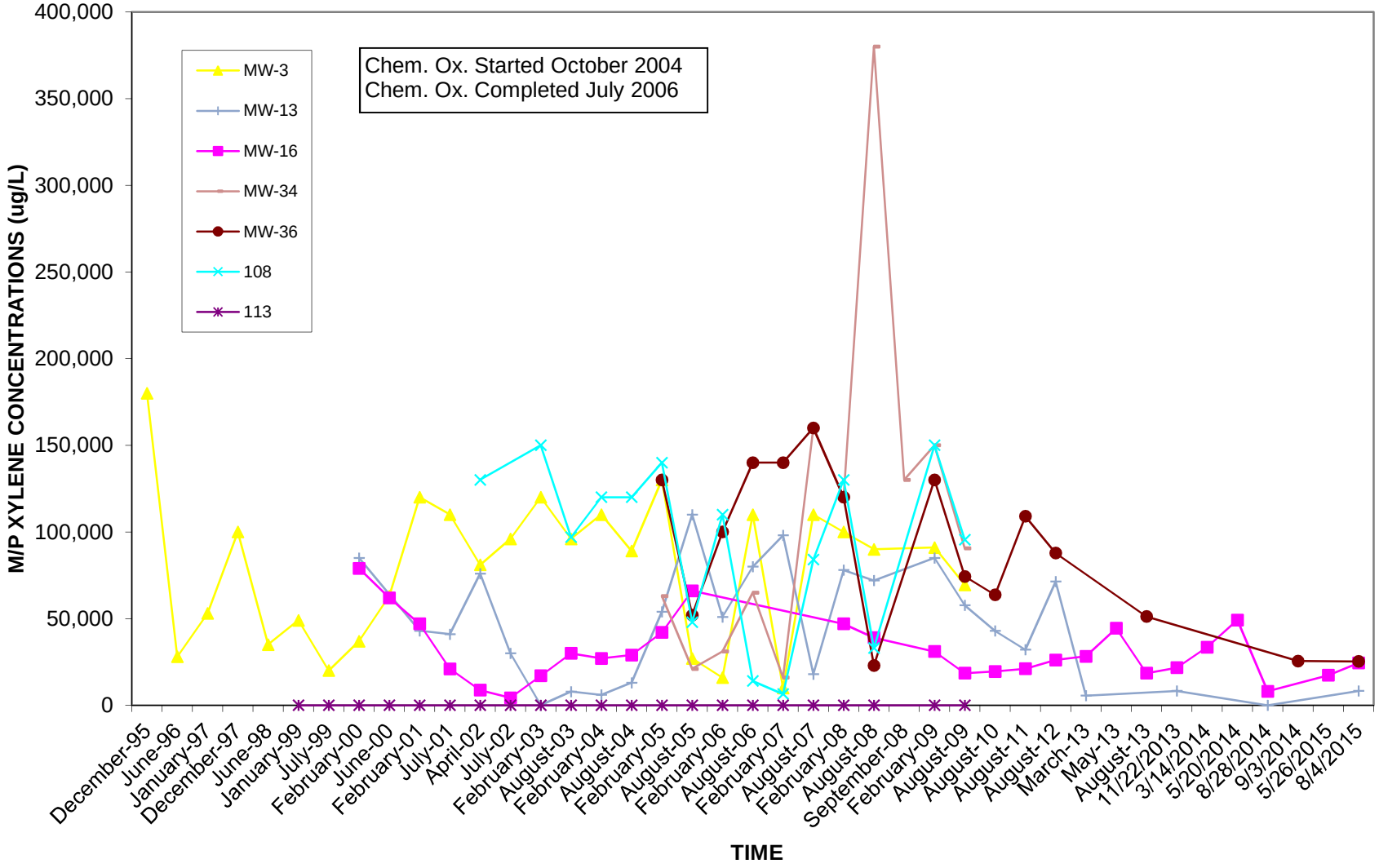
## MONITORING WELLS ASSOCIATED WITH THE PULSE AIR SPARGE NETWORK ZONE 1



## MONITORING WELLS ASSOCIATED WITH PULSE AIR SPARGE NETWORK ZONE 2



## MONITORING WELLS ASSOCIATED WITH PULSE AIR SPARGE NETWORK ZONE 3



## SELECTED BACKGROUND WELLS