Terracon

August 24, 2017

United States Environmental Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8960

Attention: Mr. Wesley S. Hardegree
Environmental Engineer

Re: **Interim Measures (IM) June 2016 – May 2017 Report**
ERP Compliant Coke, LLC
3500 35th Avenue North
Birmingham, Jefferson County, Alabama
USEPA ID No. ALD 000 828 848
Terracon Project No. E1167304

Dear Mr. Hardegree:

On behalf of ERP Compliant Coke, LLC (ERP Coke), Terracon Consultants, Inc. (Terracon) is pleased to provide this Interim Measures (IM) June 2016-May 2017 Report for the above-referenced site. The IM Report for the Former Chemical Plant has been performed in general accordance with the *February 20, 2002 RCRA Facility Investigation Interim Remedial Measures Work Plan* prepared by Arcadis; and the *February 11, 2011, Groundwater Interim Measures Work Plan Addendum for the Former Chemical Plant* prepared by CH2MHill approved by US EPA on April 16, 2012.

If you should have any questions, please do not hesitate to contact us at (205) 942-1289.

Sincerely,
Terracon

Terrell W. Rippstein, AL-PG
Principal Geologist

ALABAMA LICENSED PROFESSIONAL ENGINEER DALLAS EUGENE WHITMILL NO. 33010

Dallas Whitmill, PE
Senior Project Engineer

Cc: Mr. Don Wiggins – ERP Coke
ADEM

Interim Measures (IM) June 2016 – May 2017 Report

ERP Compliant Coke, LLC
3500 35th Avenue North
Birmingham, Jefferson County, Alabama
USEPA ID No. ALD 000 828 848
August 24, 2017
Terracon Project No. E1167304

Prepared for:
ERP Compliant Coke, LLC
Birmingham, Alabama

Prepared by:
Terracon Consultants, Inc.
Birmingham, Alabama

August 24, 2017

ERP Compliant Coke, LLC
3500 35th Avenue North
Birmingham, Alabama 35207

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ALABAMA LICENSED NO. 33070 PROFESSIONAL ENGINEER DALLAS EUGENE WHITMILL

Dallas Whitmill, AL-PE
Senior Project Engineer

Cc: Mr. Wes Hardegree; USEPA Region 4

Attachments

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ACRONYMS AND ABBREVIATIONS

ADEM ..... Alabama Department of Environmental Management
AEIRG..... Alabama Environmental Investigation and Remediation Guidance
AMSL ..... Above Mean Sea Level
BTS..... Biological Treatment System
CAD ..... Computer-Aided Drafting
CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
CFR ..... Code of Federal Regulations
CSM..... Conceptual Site Model
DB..... Deep Bedrock
DQO..... Data Quality Objective
EPA ..... Environmental Protection Agency
ESC ..... Environmental Science Corporation
eV ..... electron-volt
FOIA ..... Freedom of Information Act
Gal/min..... gallon per minute
GC ..... Gas Chromatograph
GIS ..... Geographical Information System
GPS ..... Geographical Positioning System
GRO..... Groundwater Remediation Objective
GSA ..... Geological Survey of Alabama
HASP ..... Health and Safety Plan
HCl ..... Hydrochloric Acid
HNO_3 ..... Nitric Acid
IDW..... Investigation Derived Waste
IM ..... Interim Measures
IMWP ..... Interim Measures Work Plan
L ..... liter
LBP..... Lead-Based Paint
LCS..... Laboratory Control Sample
LQAP ..... Laboratory Quality Assurance Programs
MCL ..... Maximum Contaminant Level
mg/kg..... milligrams per kilogram
mL..... milliliter
MS/MSD..... Matrix Spike/Matrix Spike Duplicate
MWSR ..... Monitoring Well Sampling Record
NaOH..... Sodium Hydroxide
NFR ..... No Further Remediation
NTU ..... Nephelometric Turbidity Units
OSHA..... Occupational Health and Safety Administration
OVM..... Organic Vapor Meter
oz..... ounce
PAH ..... Polycyclic Aromatic Hydrocarbon
PARCCS ..... Precision, Accuracy, Representativeness, Completeness, Comparability, and Sensitivity
PE..... Professional Engineer
PG ..... Professional Geologist
PLM ..... Polarized Light Microscopy
PQL ..... Practical Quantitation Limit
PSV ..... Preliminary Screening Value
QA ..... Quality Assurance
QAPP..... Quality Assurance Project Plan
QC ..... Quality Control
RA..... Remedial Applicant

ACRONYMS AND ABBREVIATIONS (CONT.)

RCRA..... Resource Conservation and Recovery Act
RO ..... Remediation Objective
RPD ..... Relative Percent Difference
RSL..... Regional Screening Level
SB..... Shallow Bedrock
SIR..... Site Investigation Report
SPLP..... Synthetic Precipitation Leaching Procedure
SQG..... Small Quantity Generator
SRO..... Soil Remediation Objective
SRP ..... Site Remediation Program
SVOC..... Semi-Volatile Organic Compound
SWMU ..... Solid Waste Management Unit
TAL ..... Target Analyte List
TCLP..... Toxicity Characteristic Leaching Procedure
TSD ..... Treatment, Storage, and Disposal
TSOP..... Terracon Standard Operating Procedures for EPA Brownfields
mmhos/cm ..... micromhos per centimeter
USEPA..... United States Environmental Protection Agency
USGS..... United States Geological Survey
UST ..... Underground Storage Tank
VC..... Vinyl Chloride
VCP ..... Voluntary Cleanup Program
VOC..... Volatile Organic Compound

Interim Measures June 2016-May 2017 Report

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1.0 INTRODUCTION

This report was prepared for ERP Compliant Coke, LLC (ERP Coke) to document the results of the continued implementation of the approved Interim Measures (IM) for SMA 4 – Former Chemical Plant (FCP) on the ERP Coke facility located at 3500 35th Avenue North in Birmingham, Jefferson County, Alabama. This IM report covers the June 2016 through May 2017 period. This implementation conformed to the EPA-approved Interim Measures Work Plan (IMWP). Groundwater sampling in this period was performed quarterly which is the frequency agreed upon with EPA.

The objective of the IM is to provide hydraulic control to reduce the potential for groundwater to migrate from the FCP beyond the property boundary. As a secondary benefit, the chemical mass in the groundwater under the FCP is reduced via the extraction of groundwater. Groundwater sampling results indicate that both are occuring. No VOCs exceeded the RSL/MCL in the off-site groundwater samples during this sampling period (August 2016 through May 2017), and the system continues to reduce chemical mass. In fact, none of the offsite wells have had any constituents exceed the RSL/MCL since February 2014.

2.0 GEOLOGICAL INFORMATION

The facility is underlain by sedimentary rocks that range in age from Cambrian to Pennsylvanian. The Opossum Valley Fault generally trends northeast to southwest, crossing through the ERP Coke property in the northern portion of the facility at the Polishing Pond (SWMU 22). The majority of the ERP Coke property lies on the hanging wall fault block to the east of the Opossum Valley Fault. The foot wall of the fault lies to the west and underlies Sand Mountain. The majority of the ERP Coke property (including SMA 3) is underlain by the Conasauga Formation. The Red Mountain Formation, Fort Payne Formation, Tuscumbia Limestone, Hartselle Sandstone, Floyd Shale, and Pottsville Formation outcrop in a small area of the facility on the western side of the fault.

The Conasauga Formation is Cambrian-Aged and typically is medium gray, thin- to medium-bedded limestone. Locally, bedding thickness is reported to range from a few inches to as much

as 5 feet or more in the massive sections. Locally, the Conasauga Formation dips to the southeast at 26 to 32 degrees, with a strike of approximately N45°E. An extensive network of faults and joints has developed in the Conasauga Limestone because of thrust faulting. The faults and joints typically trend northeast and northwest. The northeast trending joints (strike of N45°E) dip approximately 60°NW (approximately perpendicular to bedding), while the northwest trending joints strike N300W and have subvertical dips. The results of previous investigations indicate that the upper 2 feet of the Conasauga Formation underlying the ERP Coke facility are highly weathered. Below the weathered surface, the limestone is generally massive, with few fractures. The limestone is typically hard, with 1- to 2-foot-thick lenses of softer, darker gray shale and shaley limestone. Occasionally, fractures are present, ranging from a few inches to a few feet thick. Fracture zones typically contain limestone rubble that exhibits secondary healing by calcite crystals. Fracture zones typically are encountered in the upper 50 feet of the formation and are less frequent with increasing depth. On the western side of the Opossum Valley Fault (in the SWMU 23 area), outcrops of the Hartselle Sandstone, Tuscumbia Limestone, Fort Payne Chert, Red Mountain Formation, and Pottsville Formation have been mapped. Brief descriptions of these units are provided below:

- Hartselle Sandstone – consists mainly of clean, well-sorted, light-colored, very fine- to medium-grained quartz sand;
- Tuscumbia Limestone – consists of thick-bedded, medium-dark to medium-gray, crystalline, oolitic, sublithographic, and bioclastic limestone with minor amounts of chert;
- Fort Payne Chert – consists of dark-gray sublithographic limestone and dense dark-gray chert;
- Red Mountain Formation – consists of dark-reddish-brown to olive-gray siltstone, sandstone, and shale with hematite beds; and
- Pottsville Formation – consists of alternating beds of sandstone and shale with numerous coal seams and associated underclays.

The topography of the bedrock underlying the ERP Coke facility generally slopes to the north toward Five Mile Creek. Top-of-bedrock elevations range from 583.1 feet amsl in the Coke Plant area to 498.6 feet amsl near Five Mile Creek. Weathering of the Conasauga Formation has produced undulations in the surface of the bedrock. Several feet of relief have developed on the bedrock surface. This relief is as much as several tens of feet in some areas of the property; however, karst features are not evident at the ground surface. Where exposed, enlargement of bedding planes and fractures appears to have occurred through solution of the bedrock. Solutionally enlarged fractures and joints primarily are limited to the upper few feet of bedrock and have been observed up to 1 foot wide.

The conceptual groundwater flow model indicates there are potentially three zones of groundwater movement beneath the site; these zones occur within the fill/soil (shallow flow zone), the soil-bedrock interface (intermediate flow zone), and the bedrock (bedrock flow zone). Due to the heterogeneous and anisotropic nature of area soils and bedrock, the rate and direction of

groundwater flow varies from one zone to another, as well as within each zone. However, the three flow zones are believed to be in hydraulic communication for at least some portion of the year.

In the shallow flow zone, where present, groundwater travels along pathways of primary porosity, within the interstitial voids between the individual grains of sand, silt and clay in the soil. Groundwater in this zone also travels through macropores created by roots and organisms. The clay-rich native soil beneath the fill may retard or locally prevent the downward movement of water, resulting in discontinuous and impermanent perched water bodies. The is essentially no horizontal flow through the shallow flow zone,

Groundwater that has percolated through the shallow flow zone and from any perched water body within the shallow flow zone may eventually encounter the intermediate flow zone (the predominant zone of interest for this site and where a majority of the hydraulic containment is occurring). In the intermediate flow zone, groundwater travels along the highly irregular and weathered surface of the underlying carbonate bedrock. The direction and rate of groundwater movement in this zone is also controlled by the presence of solution openings and/or solution-enlarged joints and bedding planes near the top of the bedrock. This weathered zone is typically 2- to 5-feet in thickness; however, locally in pinnacled areas in can be thicker.

Groundwater in the intermediate flow zone may eventually gain entry into the deeper, relatively unweathered bedrock flow zone. In the predominantly carbonate bedrock, groundwater travels through pathways of secondary porosity such as solution cavities and solution-enlarged joints and bedding planes, as well as along the contacts between individual limestone and shale units. However, it has been observed that after 20- to 30-feet from ground surface, there are few large cavities and joints and the next noticeable groundwater encountered is greater than 80 feet below ground surface. Based on groundwater elevations, there is a downward vertical gradient; however, due to the lack of large cavities and bedding planes, flow from the intermediate aquifer to the deep bedrock aquifer appears to be slow.

The intermediate flow zone which is much more porous and permeable than the other two zones, acts similar to a porous media system. Even with the extraction wells straddling all three zones (to some extent), the majority of the extracted water comes from the 2- to 5-foot thick intermediate flow zone.

Based on the Phase II RCRA Facility Investigation (RFI) prepared by ARCADIS dated February 28, 2001, the following parameters were calculated for the intermediate flow zone:

K (average hydraulic conductivity) = 1.3×10^{-3} cm/sec
V (average groundwater flow velocity) = 64 feet/year
N (porosity) = 0.2
I (hydraulic gradient) = 0.001

Based on our knowledge of the area and the drilling conducted during this investigation, we know the intermediate flow zone (rubble zone) is usually 2- to 5-feet thick.

3.0 PERFORMANCE OBJECTIVE OF THE INTERIM MEASURES

The groundwater plume at the FCP primarily is dissolved phase hydrocarbons and chlorinated solvents. The performance objective for this IM is to establish pumping rates in the containment wells to maintain an inward gradient along the property line near monitoring wells MW-49 and MW-51. As a secondary benefit of hydraulic containment, the chemical mass in the groundwater under the FCP will be reduced.

In regard to EPA's comments requesting an evaluation of additional IMs to reduce chemical concentrations in the FCP soil and groundwater, ERP Coke has evaluated the feasibility of such measures as part of the Corrective Measures Study (CMS) for SMA 4.

4.0 PERFORMANCE EVALUATION

The performance objective for this IM is to establish pumping rates in the containment wells to maintain an inward gradient along the property line near monitoring wells MW-49S and MW-51. Per EPA's request, ERP Coke also will evaluate the hydraulic interaction and capture of the interior wells (CW-1 through CW-6) for performance reporting purposes.

Although not a performance objective, the secondary benefit of chemical mass reduction will be quantified through groundwater sampling. Groundwater sampling and analysis procedures were conducted in accordance with the IM Groundwater Sampling and Analysis Plan (Revision 1.0) dated October 9, 2012 prepared by Terracon. This Plan was approved by USEPA in a letter dated December 4, 2012.

5.0 CONTAINMENT AND MONITORING WELL LOCATIONS

As part of the IM Implementation six containment wells designated CW-1 through CW-6 were installed in the FCP area.

The containment wells (CWs) were installed on December 13, 2012 through February 20, 2013 in the following locations:

- CW-1 – Approximately 55-feet south of MW-51 near the southern, down-gradient edge of the contaminant plume;

- CW-2 – Approximately 80-feet northwest of MW-50 near the southern, down-gradient edge of the contaminant plume;
- CW-3 – Approximately 75-feet northwest of MW-53 within the contaminant plume;
- CW-4 – Approximately 150-feet east of MW-54 near the southwestern edge of the contaminant plume;
- CW-5 – Approximately 65-feet east-southeast of MW-56 near the east-northeastern edge of the contaminant plume; and
- CW-6 – Approximately 140-feet southeast of MW-56 just outside the eastern edge of the contaminant plume.

The monitoring wells and hydraulic control wells associated with the FCP are shown on Figure 1. The monitoring wells have been grouped into categories (Upgradient, Performance, Sentinel) which will be used to evaluate the effectiveness of the IM. The categories include:

Upgradient Wells: MW-77, MW-80 and MW-81.

Performance Wells: MW-49S, MW-49D, MW-50, MW-51, MW-52, MW-53, MW-54, MW-55, MW-56, MW-78, and MW-90.

Sentinel Wells : MW-70, MW-71, MW-72, and MW-89.

6.0 GROUNDWATER LEVEL MONITORING

Groundwater levels from the monitoring wells listed in Section 5.0 were collected quarterly in August 2016, November 2016, February 2017, and May 2017. The water levels collected are summarized in Table 1, and hydrographs showing the water levels are presented in Figure 2 through Figure 5. Potentiometric Surface Maps for August 2016, November 2016, February 2017, and May 2017 are included as Figures 6 through 9.

The four groundwater measurement events indicate groundwater flow is generally towards the east. Based on the flow maps, it appears that the hydraulic control wells are working effectively and producing a cone of depression around each of the hydraulic control wells during a majority of the measurement events.

7.0 SYSTEM OPERATION AND MAINTENANCE

Since initial start-up of the groundwater containment system in April 2013, the system has been routinely running with only minor downtime for maintenance, for example, adding a filter to prevent iron fouling. Daily, ERP Coke conducts a check of the system and a preventive maintenance (PM) form is filled out that contains a place to note the following:

- Flow meter reading (gallons)
- Results of visual inspection of the system and tank for leaks
- A place to note if the filter bag has been changed

In addition, ERP Coke conducts weekly PMs that checks the pumps and equipment at each of the hydraulic control wells to determine if the pumps are operating correctly and that no leaks are present. The completed forms are kept on file at the ERP Coke facility.

8.0 SYSTEM PERFORMANCE MONITORING

8.1 GROUNDWATER SAMPLING

Based on the approved IMWP and the approved IM Groundwater Sampling and Analysis Plan (SAP), groundwater sampling was conducted quarterly in August 2016, November 2016, February 2017 and May 2017. The sampling was conducted in accordance with the Site-Specific Health and Safety Plan approved by EPA on December 4, 2012.

Groundwater samples were collected from the 11 performance wells listed in Section 5.0 in August 2016, November 2016, February 2017 and May 2017. The upgradient wells were sampled in August 2016. In addition, QA/QC samples were collected as presented in the approved SAP. The groundwater samples and QA/QC samples were analyzed for VOCs by USEPA Method 8260B. In addition, effluent samples were collected from the effluent tank and analyzed for VOCs by USEPA Method 8260B and SVOCs by USEPA Method 8270D.

Field information forms including purge information, purge equipment, well data, stabilization data, field data, and field comments for samples collected are included in Appendix A. Daily Safety Meeting logs are included as Appendix B. Field parameter data are included on Table 1. The analytical results are presented in Tables 2, 3 and 4.

The field parameter data (pH, specific conductivity, temperature, and turbidity) are also included on Figures 10 through 13. There are no specific trends in the field parameter data.

8.2 DATA REVIEW AND VALIDATION

The laboratory conducted an initial data review and validation according to the laboratory QA manual included in the approved SAP. Data validation included application of data qualifiers to the analytical results based on adherence to method protocols and QA/QC limits. A discussion of applied data qualifiers is included within the case narrative of the analytical report for each sample delivery group. Data meeting *analytical* validity requirements set by the analytical method and the fixed-laboratory were further reviewed against the project-specific DQOs. This data validation was performed by a qualified Terracon professional outside of the project implementation chain-of-

command, in accordance with the Terracon Corporate Quality Program Manual and this project's DQOs.

Items reviewed included the following components:

- Completeness Check;
- Chain of Custody (signatures, sample conditions, preservatives, sampling handling/filtering);
- Holding Times;
- Random check (10-20%) of Initial and Continuing Calibration;
- Review of Quality Control Summaries including negative control (blanks) and positive control (LCS);
- Review of Sample Specific Controls (replicates, matrix spikes, surrogates, tracers/ yields);
- Overall PARCC assessment.

Data quality assessment (DQA) criteria were used to evaluate the quality of the field sampling efforts and laboratory results for compliance with project DQOs. The DQA criteria are expressed in terms of analytical precision, accuracy, representativeness, completeness, and comparability (PARCC).

Precision: is a measure of the reproducibility of analyses under a given set of conditions compared to the criteria of the individual laboratory's Quality Assurance Manual.

Matrix precision is calculated using equation (1).

$$RPD = \frac{|D_1 - D_2|}{(D_1 + D_2)/2} \times 100, \quad (1)$$

where,
RPD = Relative Percentage Difference
D1 = First sample value
D2 = Second sample value (duplicate)

An RPD within the method-specific control limit indicates satisfactory precision in a measurement system. For these sampling events, duplicate results were predominantly in control.

Accuracy: is a measure of the bias that exists in a measurement system compared to the criteria of the individual laboratory's Quality Assurance Manual.

For accuracy analysis; the percent recovery is calculated using equations (2) and (3).

$$LCS = \frac{Amount\ of\ Spike\ Analyte\ Detected}{Known\ Amount\ of\ Spike\ Analyte\ Added} \times 100, \quad (2)$$

LCS = Laboratory Control Sample

$$MS\ (or\ MSD) = \frac{Total\ \ Amount\ of\ \ Analyte\ \ Detected\ -\ \ Amount\ of\ \ Analyte\ \ Detected\ in\ Sample}{Known\ \ Amount\ of\ \ Spike\ \ Analyte\ \ Added} \times 100 \quad (3)$$

MS (or MSD) = Matrix Spike (or Matrix Spike Duplicate)

Accuracy results for methods and matrices are predominantly in control. For those results in which MS/MSD were out of control; accuracy and precision were generally demonstrated by acceptable LCS/LCSD analysis. Therefore, overall accuracy for these sampling events was acceptable.

Representativeness: Sample data are believed to accurately depict selected site conditions prevailing at the time of sample collection based on a general conformance to established protocols as established by TSOPs, laboratory QA/QC protocol, and/or USEPA/ADEM standard operating procedures.

Comparability: Samples were reported in industry-standard units. Water reporting units were micrograms per liter (µg/L) or milligrams per liter (mg/L). Analytical protocols for the methods were adhered to (with the exceptions noted in the reports) and analytical results are considered comparable.

Completeness: the measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under "normal" conditions. This goal will be accomplished if 95% of design samples are taken and found to be qualified for precision and accuracy. Completeness objectives were met, understanding that results qualified with U, UJ or J are usable to meet the project objectives of these sampling events.

The groundwater data are of acceptable quality and are considered usable to support the project objectives for these sampling events when used in accordance with the validation qualifiers.

8.3 ANALYTICAL RESULTS

8.3.1 VOC Analysis

The following VOCs were detected in at least one sample at concentrations exceeding the RSL/MCL from the listed monitoring locations:

- 1,4-dichlorobenzene – MW-78, effluent
- 1,2,4-trichlorobenzene – effluent
- benzene – MW-49S, MW-51, MW-53, MW-54, MW-55, MW-56, effluent
- chlorobenzene – MW-53, MW-54, MW-55, MW-56, effluent
- isopropylbenzene – MW-81

- toluene – MW-55
- vinyl chloride – MW-49S, MW-51, MW-53, effluent

8.3.2 SVOC/PAH Analysis

The following SVOCs/PAHs were detected in at least one sample at concentrations exceeding the RSL/MCL from the listed monitoring locations:

- 1,2,4-trichlorobenzene – MW-55
- 1,4-dichlorobenzene – MW-55
- naphthalene – MW-54, MW-55, MW-56
- 2-chlorophenol – MW-55
- 2-nitroaniline – MW-53

8.3.3 Mass Removal Calculations

The concentrations of the VOCs, SVOCs, and PAHs detected in the effluent samples were multiplied by the volume of water extracted from the system for each of the July 2016-September 2016, the October 2016-December 2016, the January 2017-March 2017, and the April 2017-June 2017 time intervals. Tables 5 through 8 shows the total VOCs, SVOCs, and PAHs recovered during each time period. The chemical concentrations from the effluent sample from each period was used to calculate mass of constituents removed. Table 9 shows the total number of gallons pumped and the total mass of constituents removed since system start-up.

The effluent sample concentrations from August 2016 were used to calculate the mass removal (0.08 pounds) for the July 2016 through September 2016 time frames. The November 2016 effluent concentrations were used to determine the mass removal (0.0 pounds) for October 2016 through December 2016. The November 2016 sample was collected two months into a drought. It appears that clean water was being pulled in from the periphery of the plume and that the plume had been dewatered. The February 2017 effluent concentrations were used to determine the mass removal (0.08 pounds) for January 2017 through March 2017. The May 2017 effluent concentrations were used to determine the mass removal (0.24 pounds) for April 2017 through June 2017. A total of 6,383,570 gallons of groundwater and 775.90 pounds of VOCs and SVOCs have been removed by the hydraulic control system from April 2013 to June 2017.

The contaminant mass removal for the last year decreased compared with the previous year. The volume of water pumped during each of the last two years was similar; however, the effluent concentrations were lower for the last year. This shows the contaminant mass is effectively being removed.

8.3.4 Analytical Trends

Graphs illustrating the trends of select VOCs for the 18 monitoring wells are included in Appendix C. The VOC constituents selected for illustration are consistent with those presented in the approved IMWP. Constituent concentration maps for VOC constituents exceeding the MCLs from the August 2016, November 2016, February 2017 and May 2017 sampling events are included as Figures 14 through 17.

Of the 11 performance wells sampled during this reporting period, the following monitoring wells have been showing a downward trend in VOC concentrations:

- MW-49D
- MW-49S
- MW-50
- MW-52
- MW-53
- MW-54
- MW-78
- MW-90
- effluent

The following monitoring wells have been showing a stable to fluctuating trend in VOC concentrations:

- MW-51
- MW-55
- MW-56

Based on the trends of the VOCs, the hydraulic control system is having a positive effect on the VOC plume. In particular, offsite monitoring well MW-50 is the only offsite well to have ever had VOC concentrations exceed an MCL, but since hydraulic control was initiated, the VOC concentrations in MW-50 are now below the RSL/MCL. None of the offsite wells have had any constituents exceeding the RSL/MCL since February 2014.

9.0 SUMMARY

The objective of the IM was to provide hydraulic control to reduce the potential for groundwater to migrate from the FCP beyond the property boundary. As a secondary benefit, the chemical mass in the groundwater under the FCP will be reduced via the extraction of groundwater. Based on the first three years' groundwater sampling results, it appears that both are occurring. No

VOCs have been detected above RSLs/MCLs in the off-site groundwater samples since February 2014.

These conclusions are supported by the following activities and observations from the implementation of the IMWP and groundwater monitoring.

- No VOCs have exceeded the RSL/MCL in off-site monitoring wells since February 2014.
- Monitoring well MW-50 was the only off-site monitoring well prior to the system start-up to have VOC concentrations ever exceed the RSLs/MCLs, but since IM implementation, no VOCs in MW-50 exceed an RSL/MCL.
- The system has been operating full-time with minor adjustments since May 2013, with the exception of a brief period in April 2014 when an iron filtration unit was added to prevent iron fouling.
- ERP Coke checks the system daily and the pumping wells on a weekly basis, and performs preventative maintenance as necessary.
- The groundwater flow direction as determined by the measured water levels has remained generally towards the east and southeast with localized flow towards the hydraulic control wells as illustrated in the potentiometric surface maps.
- The total VOC and SVOC concentrations in the effluent concentration were less this year than last year.
- A total of 6,383,570 gallons of groundwater and 775.90 pounds of VOCs and SVOCs have been removed by the hydraulic control system from April 2013 to June 2017.
- Eight of the performance monitoring wells are showing a decreasing trend for VOCs, while three are showing a stable to fluctuating trend.

Since implementation of the IM Work Plan the hydraulic control system appears to be achieving its objective of limiting VOC migration off the site, the following groundwater monitoring schedule is proposed for June 2017 through May 2018:

- The performance wells will be sampled quarterly for VOCs and yearly (August 2017) for SVOCs and PAH SIM.
- Effluent samples will be collected quarterly (August 2017, November 2017, February 2018, and May 2018) and analyzed for VOCs and SVOCs.
- The background wells will be sampled yearly (August 2017) for VOCs, SVOCs, and PAH SIM.
- The sentinel wells will be sampled yearly (August 2017) for VOCs, SVOCs, and PAH SIM
- Report of yearly IM sampling due in August 2018.

10.0 REFERENCES

A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, January 2008 (EPA 600/R-08/003)

Elements for Effective Management of Operating Pump and Treat Systems, 2002 (EPA 542-R-02-009)

Methods for Monitoring Pump-and-Treat Performance, 1994 (EPA/600/R-94/123)

Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, 1998 (EPA/600/R-98/128)

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-49S							MW-50							MW-51						
	Depth from TOC	Water Level EL	Field Parameters (Average) pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)	Depth from TOC	Water Level EL	Field Parameters (Average) pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)	Depth from TOC	Water Level EL	Field Parameters (Average) pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
1/7/13	6.67	574.74						7.25	573.68						4.65	577.42					
2/4/13	6.60	574.81						7.19	573.74						4.57	577.50					
3/6/13	7.11	574.30						7.85	573.08						5.05	577.02					
3/27/13-4/3/13	6.96	574.45	6.81	312	21.9	1.0	0.2	7.87	573.06	6.70	263	18.8	0.9	0.3	5.89	576.18	7.05	178	19.7	16.9	0.3
5/7/13	5.42	575.99						5.63	575.30						3.80	578.27					
6/4/13	12.22	569.19						11.36	569.57						7.43	574.64					
7/1/13	14.49	566.92						12.08	568.85						7.55	574.52					
8/613-8/8/13	12.18	569.23	7.05	1417	23.9	1.8	0.6	9.70	571.23	6.77	2017	18.8	0.8	0.8	5.51	576.56	7.06	1942	21.0	3.1	0.8
9/6/13	13.58	567.83						11.53	569.40						7.56	574.51					
10/7/13	12.67	568.74						12.49	568.44						8.65	573.42					
11/5/13-11/7/13	11.88	569.53	7.18	1281	24.6	9.7	2.0	9.78	571.15	6.81	2115	18.7	11.2	1.1	7.74	574.33	7.00	1735	21.4	9.7	1.4
2/18/14-2/20/14	8.33	573.08	7.37	1292	28.3	8.7	3.4	7.96	572.97	10.47	1417	18.6	4.7	1.6	6.47	575.60	7.21	1709	21.4	34.2	1.7
5/13/14-5/15/14	9.85	571.56	7.16	1053	21.7	8.8	6.6	9.66	571.27	6.81	2005	18.2	5.7	6.5	6.73	575.34	6.90	2189	19.4	35.2	7.4
8/21/14	12.16	569.25						12.88	568.05						8.27	573.80					
11/18/14-11/20/14	8.60	572.81	7.24	1139	23.5	6.3	9.9	9.64	571.29	7.01	2050	18.5	5	12.7	7.26	574.81	7.16	1544	20.6	3.4	14.8
2/23/15	6.18	575.23						6.01	574.92						4.18	577.89					
5/19/15-5/21/15	12.65	568.76	6.99	1026	22.1	2.0	2.0	11.66	569.27	6.98	1683	20.0	3.7	2.4	7.15	574.92	6.70	1722	19.1	8.7	1.9
8/10/15-8/12/15	11.97	569.44	6.94	1025	23.5	4.2	1.6	12.13	568.80	6.68	1626	19.1	3.1	1.5	8.58	573.49	6.74	1425	21.2	8.6	1.6
11/9/15-11/11/15	11.36	570.05	7.11	1289	23.7	11.1	1.5	9.80	571.13	6.89	1782	19.4	11.7	1.8	5.74	576.33	7.08	1423	21.1	10.9	1.8
2/15/16-2/17/16	11.91	569.50	7.08	1097	19.8	6.3	2.4	8.87	572.06	6.98	1716	18.3	7.4	1.1	4.31	577.76	7.07	1785	18.3	12.2	2.2
5/3/16-5/5/16	12.10	569.31	7.2	2018	21.6	6.3	1.6	10.12	570.81	7.09	1632	18.6	6.8	1.9	5.74	576.33	6.97	1776	19.1	4.6	2.1
8/9/16-8/11/16	11.48	569.93	7.27	1498	23.8	8.5	3.2	12.68	568.25	7.22	2061	19.4	5.8	4.2	8.28	573.79	6.86	1778	21.4	7.3	2.7
11/15/16-11/16/16	14.26	567.15	6.92	1704	22.5	8.3	2.9	14.54	566.39	7.17	2177	19.5	9.1	4.0	9.91	572.16	6.69	1604	20.1	7.3	2.9
2/14/17-2/15/17	7.23	574.18	6.43	1264	21.7	8.5	1.2	7.58	573.35	6.19	1667	18.4	8.5	5.3	4.10	577.97	6.28	1702	19.4	7.1	1.5
5/17/17-5/18/17	13.66	567.75	6.55	1484	23.6	2.0	9.5	12.27	568.66	6.29	1671	19.5	0.5	1.6	7.32	574.75	6.25	1920	20.3	2.7	1.2

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-52							MW-53							MW-54						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
1/7/13	8.10	571.28						7.02	575.31						0.75	581.87					
2/4/13	8.04	571.34						3.80	578.53						0.81	581.81					
3/6/13	8.28	571.10						4.12	578.21						0.89	581.73					
3/27/13-4/3/13	8.12	571.26	6.73	522	20.2	1.8	2.2	4.00	578.33	6.72	1125	20.1	1.5	0.2	0.60	582.02	7.16	731	20.1	2.7	0.5
5/7/13	7.73	571.65						3.60	578.73						0.25	582.37					
6/4/13	8.56	570.82						5.24	577.09						1.25	581.37					
7/1/13	8.55	570.83						5.52	576.81						1.25	581.37					
8/6/13-8/8/13	8.31	571.07	6.71	1859	23.9	0.8	0.7	4.80	577.53	6.70	1375	20.9	1.3	0.8	1.12	581.50	7.15	935	21.0	21.8	2.3
9/6/13	8.57	570.81						5.22	577.11						1.14	581.48					
10/7/13	8.62	570.76						5.91	576.42						1.18	581.44					
11/5/13-11/7/13	8.60	570.78	6.71	1714	25.4	11.7	1.6	5.54	576.79	6.71	1268	21.7	8.7	1.7	1.18	581.44	7.06	911	21.4	19.1	2.3
2/18/14-2/20/14	7.15	572.23	6.82	1707	24.1	11.4	2.8	4.26	578.07	6.68	1308	21.5	1.6	1.6	0.96	581.66	7.01	917	21.0	1.4	3.1
5/13/14-5/15/14	8.46	570.92	6.77	1505	20.9	31.1	6.1	4.73	577.60	6.72	1002	19.4	16.1	6.6	1.02	581.60	7.21	635	20.3	19.6	4.1
8/21/14	8.74	570.64						5.49	576.84						1.25	581.37					
11/18/14-11/20/14	8.10	571.28	6.99	1237	24.8	8.7	14.3	5.27	577.06	6.97	985	18.1	11.2	11.9	0.28	582.34	6.87	691	18.1	23.6	8.7
2/23/15	7.89	571.49						4.12	578.21						0.22	582.40					
5/19/15-5/21/15	8.66	570.72	6.64	1289	21.6	2.7	1.5	4.58	577.75	6.51	886	19.3	8.8	2.2	1.40	581.22	6.89	593	20.1	4.2	1.1
8/10/15-8/12/15	8.76	570.62	6.63	1268	24.1	4.9	1.7	5.59	576.74	6.43	1045	21.1	5.2	1.8	1.50	581.12	6.90	622	21.8	11.7	1.0
11/9/15-11/11/15	8.34	571.04	6.79	1130	25.4	10.6	1.6	4.59	577.74	6.83	916	21.5	6.2	2.4	0.59	582.03	7.26	587	21.2	10.7	2.6
2/15/16-2/17/16	5.21	574.17	6.95	1371	21.6	5.3	1.8	4.08	578.25	6.80	899	19.6	5.1	1.3	0.67	581.95	7.37	557	19.6	5.9	1.6
5/3/16-5/5/16	8.49	570.89	6.99	1286	21.4	7.8	1.6	5.26	577.07	6.83	889	19.2	3.6	2.8	1.15	581.47	7.08	556	20.4	8.3	1.6
8/9/16-8/11/16	8.58	570.80	7.12	1067	20.2	6.6	3.8	4.92	577.41	6.96	881	20.9	7.9	2.1	1.26	581.36	7.22	621	21.6	6.5	3.5
11/15/16-11/16/16	9.29	570.09	6.98	641	20.6	6.3	2.4	6.96	575.37	6.93	802	20.0	8.1	2.4	2.21	580.41	7.43	720	22.4	8.1	2.0
2/14/17-2/15/17	8.07	571.31	6.21	1232	22.4	9.8	11.4	4.02	578.31	6.10	896	20.2	7.7	1.4	0.88	581.74	6.57	519	21.3	8.2	0.7
5/17/17-5/18/17	8.51	570.87	6.31	1247	23.2	2.0	3.8	5.13	577.20	6.27	865	20.3	1.4	1.7	2.50	580.12	6.64	541	21.5	1.4	5.6

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-55							MW-56							MW-70						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
1/7/13	0.57	582.92						1.02	580.68						5.22	570.58					
2/4/13	0.57	582.92						0.97	580.73						5.28	570.52					
3/6/13	0.39	583.10						1.05	580.65						6.59	569.21					
3/27/13-4/3/13	0.10	583.39	6.59	1230	19.5	1.8	3.6	1.05	580.65	6.85	1466	17.9	1.9	0.6	6.73	569.07	7.11	475	16.6	2.4	0.3
5/7/13	0.00	583.49						0.86	580.84						2.75	573.05					
6/4/13	0.95	582.54						3.66	578.04						9.68	566.12					
7/1/13	0.70	582.79						3.24	578.46						10.37	565.43					
8/6/13-8/8/13	0.40	583.09	6.65	1501	21.2	17.3	0.8	1.87	579.83	6.90	1210	24.7	7.6	0.6	8.61	567.19	7.07	780	17.4	0.2	1.6
9/6/13	0.54	582.95						1.52	580.18						10.31	565.49					
10/7/13	0.78	582.71						1.81	579.89						11.59	564.21					
11/5/13-11/7/13	0.68	582.81	6.88	896	22.1	19.4	1.3	1.94	579.76	7.02	927	24.5	37.3	1.1	9.11	566.69	7.06	829	18.6	6.3	1.2
2/18/14-2/20/14	0.18	583.31	6.88	842	22.1	7.3	3.1	0.93	580.77	10.42	901	17.93	67.3	2.6	6.34	569.46	11.11	461	16.9	8.7	1.5
5/13/14-5/15/14	0.56	582.93	6.62	1074	19.4	21.4	6.9	1.21	580.49						9.19	566.61	7.08	510	15.8	131.0	8.7
8/21/14	0.72	582.77						2.02	579.68						12.26	563.54					
11/18/14-11/20/14	0.00	583.49	6.81	980	21.3	8.1	10.1	1.42	580.28	7.15	1227	24.20	26.4	14.7	9.81	565.99	7.13	652	18.3	8.9	11.2
2/23/15	0.15	583.34						2.91	578.79						9.14	566.66					
5/19/15-5/21/15	1.07	582.42	6.51	980	20.0	2.7	1.7	3.23	578.47	6.98	1087	21.10	21.4	1.1	10.71	565.09	6.83	553	16.1	3.2	1.9
8/10/15-8/12/15	1.45	582.04	6.42	939	21.8	6.8	1.7	1.85	579.85	6.85	1146	26.30	28.1	0.7	11.26	564.54					
11/9/15-11/11/15	0.21	583.28	6.65	976	21.8	6.1	2.43	1.42	580.28	7.09	1220	25.60	21.7	1.6	10.89	564.91					
2/15/16-2/17/16	0.18	583.31	6.67	1016	20.0	4.6	4.33	0.92	580.78	7.02	1444	20.10	7.1	1.3	9.93	565.87					
5/3/16-5/5/16	0.88	582.61	6.72	1008	19.9	7.8	2.46	1.51	580.19	7.13	1466	20.80	17.8	2.5	11.53	564.27					
8/9/16-8/11/16	1.40	582.09	6.67	658	20.4	9.6	3.66	2.02	579.68	7.21	1722	26.40	15.6	3.0	9.26	566.54	7.32	828	17.3	6.8	2.4
11/15/16-11/16/16	2.64	580.85	6.82	1144	22.8	7.1	3.63	3.00	578.70	7.32	1161	26.40	2.28	3.5	9.63	566.17					
2/14/17-2/15/17	0.42	583.07	6.07	903	20.7	7.3	0.7	1.45	580.25	6.47	1195	21.40	21.9	3.2	6.35	569.45					
5/17/17-5/18/17	1.52	581.97	6.04	1010	21.2	2.7	3.6	1.55	580.15	6.48	1198	23.70	4.5	4.9	9.02	566.78					

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-71							MW-72							MW-77						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
1/7/13	3.69	570.27						7.00	568.99						6.22	575.16					
2/4/13	3.55	570.41						5.18	570.81						6.03	575.35					
3/6/13	4.05	569.91						5.62	570.37						6.74	574.64					
3/27/13-4/3/13	4.35	569.61	6.96	649	16.0	2.5	0.2	6.64	569.35	7.07	1127	19.0	1.8	0.2	4.25	577.13	7.30	828	20.9	17.4	1.5
5/7/13	nm							6.63	569.36						16.39	564.99					
6/4/13	7.58							9.21	566.78						10.29	571.09					
7/1/13	8.15							9.74	566.25						7.83	573.55					
8/6/13-8/8/13	6.23	567.73	6.97	696	18.0	2.6	0.6	8.31	567.68	7.10	1433	18.7	0.3	1.1	6.53	574.85	6.64	968	17.2	7.6	18.1
9/6/13	8.10							9.72	566.27						16.97	564.41					
10/7/13	9.54							10.94	565.05						9.33	572.05					
11/5/13-11/7/13	6.61	567.35	6.94	844	16.4	5.1	2.8	8.49	567.50	7.08	1291	18.7	8.3	1.1	7.52	573.86	7.20	1199	22.5	0.8	1.9
2/18/14-2/20/14	4.34	569.62	11.53	505	15.46	10.1	3.7	6.26	569.73	11.43	810	18.0	10.2	2.8	6.46	574.92	7.63	1098	21.7	0.6	1.8
5/13/14-5/15/14	6.96	567.00	7.02	660	15.6	13.7	6.8	7.66	568.33	7.06	1129	17.9	7.4	4.6	7.44	573.94	7.22	862	21.0	6.3	13.0
8/21/14	14.75	559.21						11.31	564.68						7.80	573.58					
11/18/14-11/20/14	7.70	566.26	7.13	665	16.10	9.8	6.1	9.73	566.26	7.27	1120	18.6	8.1	6.9	6.15	575.23	7.18	889	18.1	6.2	12.8
2/23/15	1.19	572.77						4.49	571.50						7.87	573.51					
5/19/15-5/21/15	8.43	565.53	6.85	683	15.6	2.8	1.2	10.05	565.94	6.93	1055	18.1	2.4	1.1	4.82	576.56	6.94	847	20.9	5.1	1.7
8/10/15-8/12/15	8.13	565.83						10.01	565.98						8.98	572.40					
11/9/15-11/11/15	7.87	566.09						9.26	566.73						8.63	572.75					
2/15/16-2/17/16	7.63	566.33						8.99	567.00						7.54	573.84					
5/3/16-5/5/16	8.41	565.55						9.93	566.06						9.41	571.97					
8/9/16-8/11/16	6.76	567.20	7.30	865	16.60	6.2	1.5	8.65	567.34	7.18	1331	18.8	7.3	3.1	5.68	575.70	7.57	870	22.8	7.2	1.6
11/15/16-11/16/16	7.26	566.70						9.03	566.96						8.11	573.27					
2/14/17-2/15/17	4.39	569.57						6.32	569.67						5.51	575.87					
5/17/17-5/18/17	6.58	567.38						8.37	567.62						7.39	573.99					

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-78							MW-80							MW-81						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
1/7/13	12.02	566.74						1.68	580.15						1.76	580.79					
2/4/13	12.04	566.72						1.52	580.31						1.81	580.74					
3/6/13	12.73	566.03						1.51	580.32						1.90	580.65					
3/27/13-4/3/13	13.32	565.44	7.03	858	19.4	0.8	0.2	1.35	580.48	6.74	992	18.6	16.3	1.0	1.50	581.05	6.95	602	17.4	1.0	0.7
5/7/13	11.96	566.80						0.95	580.88						1.31	581.24					
6/4/13	15.11	563.65						2.17	579.66						1.91	580.64					
7/1/13	15.30	563.46						2.12	579.71						2.16	580.39					
8/6/13-8/8/13	14.33	564.43	7.14	1072	20.6	0.8	0.7	1.38	580.45	6.92	1407	19.3	1.6	0.7	1.97	580.58	7.04	802	20.3	3.5	0.6
9/6/13	15.11	563.65						1.79	580.04						1.54	581.01					
10/7/13	15.73	563.03						2.72	579.11						2.14	580.41					
11/5/13-11/7/13	15.67	563.09	7.20	1029	20.0	8.1	1.4	2.71	579.12	6.97	1304	19.5	11.7	1.9	2.35	580.20	7.05	775	20.8	11.4	2.1
2/18/14-2/20/14	12.31	566.45	10.61	628	20.0	4.9	2.1	1.30	580.53	10.45	667	18.1	8.3	3.3	1.95	580.60	10.46	488	17.7	6.3	2.5
5/13/14-5/15/14	14.33	564.43	7.07	769	20.0	6.5	5.9	1.73	580.10	7.11	766	19.4	12.4	3.7	1.96	580.59	7.06	528	18.3	13.5	5.0
8/21/14	15.52	563.24						2.47	579.36						2.38	580.17					
11/18/14-11/20/14	14.97	563.79	7.29	838	20.1	15.2	13.2	1.50	580.33	7.11	667	17.7	11.3	7.8	1.66	580.89	7.02	532	18.1	6.5	10.8
2/23/15	12.18	566.58						1.55	580.28						2.05	580.50					
5/19/15-5/21/15	14.88	563.88	6.86	857	20.5	2.7	1.5	2.24	579.59	6.84	826	19.2	7.1	1.4	2.49	580.06	6.80	544	18.1	8.4	1.5
8/10/15-8/12/15	15.19	563.57	6.93	857	20.8	2.7	0.9	2.87	578.96						2.62	579.93					
11/9/15-11/11/15	14.23	564.53	7.19	807	20.5	13.8	1.5	1.41	580.42						2.08	580.47					
2/15/16-2/17/16	11.94	566.82	7.33	844	19.4	6.3	1.3	2.36	579.47						1.81	580.74					
5/3/16-5/5/16	13.73	565.03	7.35	793	20.0	6.4	3.1	1.62	580.21						2.61	579.94					
8/9/16-8/11/16	14.44	564.32	7.16	1093	21.0	8.0	2.9	1.89	579.94	7.17	1312	21.1	7.1	2.1	2.38	580.17	7.18	1598	20.5	8.3	3.7
11/15/16-11/16/16	15.73	563.03	7.37	856	20.9	8.6	3.5	2.99	578.84						2.70	579.85					
2/14/17-2/15/17	11.77	566.99	6.54	675	19.7	6.6	1.5	1.92	579.91						2.50	580.05					
5/17/17-5/18/17	14.00	564.76	6.58	766	20.8	28.3	5.7	2.64	579.19						2.30	580.25					

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	MW-90							MW-49D							MW-89							
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
1/7/13	7.25	574.06						66.92	514.45						281.73	292.23					
2/4/13	7.19	574.12						64.55	516.82						283.42	290.54					
3/6/13	8.05	573.26						64.11	517.26						280.79	293.17					
3/27/13-4/3/13	8.10	573.21	7.05	568	17.0	4.2	0.5	59.14	522.23	7.24	1286	21.6	1.8	2.6	292.00	281.96					
5/7/13	5.20	576.11						85.34	496.03						291.25	282.71					
6/4/13	11.34	569.97						84.43	496.94						289.78	284.18					
7/1/13	11.95	569.36						83.79	497.58						293.47	280.49					
8/6/13-8/8/13	9.59	571.72	6.90	796	19.6	0.7	0.8	82.89	498.48	7.87	1465	20.0	0.8	0.6	Dry						
9/6/13	11.40	569.91						124.50	456.87						295.14	278.82					
10/7/13	12.35	568.96						121.73	459.64						295.93	278.03					
11/5/13-11/7/13	9.83	571.48	7.21	736	20.0	6.1	2.1	120.23	461.14	7.25	1341	17.2	38.7	1.2	292.47	281.49					
2/18/14-2/20/14	7.74	573.57	10.28	479	17.0	11.4	2.4	120.81	460.56	7.20	1264	24.1	4.8	2.8	257.33	316.63					
5/13/14-5/15/14	10.71	570.60	6.97	604	16.5	10.4	6.8	138.16	443.21	7.17	1209	19.9	32.1	5.2	278.38	295.58					
8/21/14	12.86	568.45						71.02	510.35						NM						
11/18/14-11/20/14	9.62	571.69	7.11	658	19.7	7.2	13.2	144.37	437.00	7.38	1173	19.1	12.4	5.5	286.31	287.65					
2/23/15	10.66	570.65						149.32	432.05						272.81	301.15					
5/19/15-5/21/15	11.70	569.61	6.81	802	17.1	3.4	1.6	145.12	436.25	6.85	1058	20.1	2.2	1.4	161.83	412.13					
8/10/15-8/12/15	12.34	568.97	6.87	587	18.8	6.5	1.8	152.93	428.44	6.77	1056	20.6	6.1	2.9	282.40	291.56					
11/9/15-11/11/15	9.71	571.60	6.97	581	20.2	8.3	1.5	152.96	428.41	7.14	1091	20.5	8.5	1.5	282.13	291.83					
2/15/16-2/17/16	7.24	574.07	7.20	516	17.4	5.4	3.0	153.67	427.70	7.05	1097	19.5	6.3	2.4	281.36	292.60					
5/3/16-5/5/16	10.32	570.99	7.18	553	17.4	4.1	1.7	153.64	427.73	7.20	1026	20.4	6.5	1.7	183.62	390.34					
8/9/16-8/11/16	12.59	568.72	7.42	796	19.8	8.6	4.6	154.04	427.33	7.22	1300	20.7	6.4	3.4	281.63	292.33					
11/15/16-11/16/16	14.12	567.19	7.40	915	21.0	6.7	4.5	155.75	425.62	6.84	1143	20.1	8.5	2.8	dry						
2/14/17-2/15/17	7.63	573.68	6.44	492	18.1	6.7	3.3	153.87	427.50	6.36	952	18.6	7.7	2.0	151.65	422.31					
5/17/17-5/18/17	12.30	569.01	6.42	533	18.7	0.6	6.8	155.50	425.87	6.45	1006	21.2	1.0	1.2	dry						

Table 1. Summary of Groundwater Level Measurements
ERP Coke - USEPA ID No. ALD 000 828 848
Birmingham, Alabama

Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96	579.47	578.14	582.97	582.92	583.36	581.16
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25	- 0.20	- 0.10	- 0.20	- 0.10	- 0.15	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00	23.00	30.00	28.85	24.00	27.00	23.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21	579.60	578.22	583.10	583.00	583.52	581.42
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96	556.47	548.14	554.12	558.92	556.36	558.16
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00	0.00	10.00	12.85	9.00	0.00	0.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	23.00	20.00	16.00	15.00	27.00	23.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21	579.60	568.22	570.25	574.00	583.52	581.42
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21	556.60	548.22	554.25	559.00	556.52	558.42

Water Level Observations

Sampling Event Date	CW-1							CW-2							CW-3						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
8/21/14	17.22	562.25						9.68	568.46						15.15	567.82					
11/18/14-11/20/14	9.73	569.74						15.16	562.98						13.31	569.66					
2/13/15	3.72	575.75						2.72	575.42						16.11	566.86					
5/19/15-5/21/15	7.63	571.84						0.80	577.34						13.10	569.87					
8/10/15-8/12/15	11.33	568.14						1.92	576.22						12.89	570.08					
11/9/15-11/11/15	6.00	573.47						14.66	563.48						20.83	562.14					
2/15/16-2/17/16	10.16	569.31						14.68	563.46						3.43	579.54					
5/3/16-5/5/16	6.83	572.64						22.64	555.50						0.34	582.63					
8/9/16-8/11/16	6.34	573.13						3.80	574.34						11.11	571.86					
11/15/16-11/16/16	dry							12.12	566.02						13.08	569.89					
2/14/17-2/15/17	8.51	570.96						4.74	573.40						0.58	582.39					
5/17/17-5/18/17	15.65	563.82						dry							17.20	565.77					

Sampling Event Date	CW-4							CW-5							CW-6						
	Depth from TOC	Water Level EL	Field Parameters					Depth from TOC	Water Level EL	Field Parameters					Depth from TOC	Water Level EL	Field Parameters				
			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (^{o}C)	Turb. (NTU)	D.O. (ppm)
8/21/14	0.32	582.60						3.17	580.19						13.23	567.93					
11/18/14-11/20/14	13.76	569.16						14.07	569.29						12.17	568.99					
2/23/15	0.30	582.62						4.72	578.64						8.62	572.54					
5/19/15-5/21/15	10.92	572.00						13.63	569.73						11.42	569.74					
8/10/15-8/12/15	13.01	569.91						14.22	569.14						12.07	569.09					
11/9/15-11/11/15	10.60	572.32						4.60	578.76						14.10	567.06					
2/15/16-2/17/16	8.78	574.14						0.00	583.36						7.80	573.36					
5/3/16-5/5/16	10.81	572.11						1.63	581.73						7.52	573.64					
8/9/16-8/11/16	8.76	574.16						11.08	572.28						6.43	574.73					
11/15/16-11/16/16	9.26	573.66						12.04	571.32						7.07	574.09					
2/14/17-2/15/17	11.04	571.88						2.17	581.19						7.19	573.97					
5/17/17-5/18/17	12.72	570.20						2.82	580.54						18.24	562.92					

Table 2. Summary of VOCs in Groundwater
ERP Coke - Birmingham, AL

Station Name	Units	MCL June 2017	Tapwater June 2017	MW-49D	MW-49D	MW-49D	MW-49D	MW-49S	MW-49S	MW-49S	MW-49S	MW-50	MW-50	MW-50	MW-50	MW-51	MW-51	MW-51	MW-51	MW-52	MW-52	MW-52
Sample Date				8/9/2016	11/15/2016	2/14/2017	5/17/2017	8/9/2016	11/15/2016	2/14/2017	5/17/2017	8/10/2016	11/16/2016	2/15/2017	5/18/2017	8/9/2016	11/15/2016	2/14/2017	5/17/2017	8/10/2016	11/15/2016	2/14/2017
VOCs 8260B																						
1,1,1-Trichloroethane	ug/L	200	800	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	ug/L		0.076	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<2.1	<2.1	<0.84	<2.1	<0.21	<0.21	<0.21
1,1,2-Trichloroethane	ug/L	5	0.041	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<2.7	<2.7	<1.1	<2.7	<0.27	<0.27	<0.27
1,1,2-Trichlorotrifluoroethane	ug/L			<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<4.2	<4.2	<1.7	<4.2	<0.42	<0.42	<0.42
1,1-Dichloroethane	ug/L		2.8	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.2	<2.2	<0.88	<2.2	<0.22	<0.22	<0.22
1,1-Dichloroethene	ug/L	7	28	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<2.3	<2.3	<0.92	<2.3	<0.23	<0.23	<0.23
1,2,3-Trichlorobenzene	ug/L		0.7	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<2.1	<2.1	<0.84	<2.1	<0.21	<0.21	<0.21
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<2.1	<2.1	<0.84	<2.1	<0.21	<0.21	<0.21
1,2-Dibromo-3-chloropropane	ug/L	0.2	0.00033	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<4.7	<4.7	<1.9	<4.7	<0.47	<0.47	<0.47
1,2-Dibromoethane	ug/L	0.05	0.0075	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<1.8	<1.8	<0.72	<1.8	<0.18	<0.18	<0.18
1,2-Dichlorobenzene	ug/L	600	30	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<1.5	<1.5	<0.6	<1.5	<0.15	<0.15	<0.15
1,2-Dichloroethane	ug/L	5	0.17	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.3	<1.3	<0.52	<1.3	<0.13	<0.13	<0.13
1,2-Dichloropropane	ug/L	5	0.14	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<1.8	<1.8	<0.72	<1.8	<0.18	<0.18	<0.18
1,3-Dichlorobenzene	ug/L			<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<1.3	<1.3	<0.52	<1.3	<0.13	<0.13	<0.13
1,4-Dichlorobenzene	ug/L	75	0.48	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
1,4-Dioxane	ug/L		0.46	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<57	<570	<570	<230	<570	<57	<57	<57
2-Butanone	ug/L		560	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<20	<8	<20	<2	<2	<2
2-Hexanone	ug/L		3.8	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<17	<17	<6.8	<17	<1.7	<1.7	<1.7
4-Methyl-2-pentanone	ug/L			<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<9.8	<9.8	<3.9	<9.8	<0.98	<0.98	<0.98
Acetone	ug/L		1,400	5.3 j	6.4 j	13	15	<1.9	<1.9	<1.9	3.3 j	5.1 j	<1.9	<1.9	6 j	33 j	<19	<7.6	28 j	<1.9	<1.9	<1.9
Benzene	ug/L	5	0.46	0.42 j	0.31 j	0.32 j	0.21 j	0.95 j	0.9 j	1.7	0.26 j	0.54 j	<0.16	<0.16	<0.16	11	9.1 j	5	7.6 j	<0.16	<0.16	<0.16
Bromochloromethane	ug/L		8.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.4	<1	<0.1	<0.1	<0.1
Bromodichloromethane	ug/L	80	0.13	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<0.68	<1.7	<0.17	<0.17	<0.17
Bromoform	ug/L	80	3.3	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<1.9	<1.9	<0.76	<1.9	<0.19	<0.19	<0.19
Bromomethane	ug/L		0.75	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<2.1	<2.1	<0.84	<2.1	<0.21	<0.21	<0.21
Carbon disulfide	ug/L		81	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<4.5	<4.5	<1.8	<4.5	<0.45	<0.45	<0.45
Carbon tetrachloride	ug/L	5	0.46	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<1.9	<1.9	<0.76	<1.9	<0.19	<0.19	<0.19
Chlorobenzene	ug/L	100	7.8	<0.17	<0.17	<0.17	<0.17	2.1	1.8	2.4	1.7	3	3.8	4	2.4	<1.7	<1.7	1.3 j	2.3 j	1.8	1.9	1.6
Chloroethane	ug/L		2,100	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<4.1	<4.1	<1.6	<4.1	<0.41	<0.41	<0.41
Chloroform	ug/L	80	0.22	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
Chloromethane	ug/L		19	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<3	<3	<1.2	<3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	3.6	<0.15	<0.15	0.16 j	<0.15	0.27 j	<0.15	<0.15	0.64 j	<0.15	<0.15	<0.15	0.32 j	140	140	20	190	0.33 j	0.22 j	0.84 j
cis-1,3-Dichloropropene	ug/L			<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
Cyclohexane	ug/L		1,300	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<2.8	<2.8	<1.1	<2.8	<0.28	<0.28	<0.28
Cyclohexane, Methyl-	ug/L			<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<3.6	<3.6	<1.4	<3.6	<0.36	<0.36	<0.36
Dibromochloromethane	ug/L	80	0.87	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<0.68	<1.7	<0.17	<0.17	<0.17
Dichlorodifluoromethane	ug/L		20	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<3.1	<3.1	<1.2	<3.1	<0.31	<0.31	<0.31
Ethylbenzene	ug/L	700	1.5	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
Isopropylbenzene	ug/L		45	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<1.9	<1.9	<0.76	<1.9	<0.19	<0.19	<0.19
m,p-Xylenes	ug/L			0.34 j	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<3.4	<3.4	<1.4	<3.4	<0.34	<0.34	<0.34
Methyl Acetate	ug/L			<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<16	<16	<6.6	<16	<1.6	<1.6	<1.6
Methyl tert butyl ether	ug/L		14	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<2.5	<2.5	<1	<2.5	<0.25	<0.25	<0.25
Methylene chloride	ug/L	5	11	0.78 j b	<0.32	<0.32	<0.32	0.83 j b	<0.32	<0.32	<0.32	0.65 j b	<0.32	<0.32	<0.32	22 b	<3.2	1.4 j	<3.2	0.76 j b	<0.32	<0.32
o-Xylene	ug/L		19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<1.9	<1.9	<0.76	<1.9	<0.19	<0.19	<0.19
Styrene	ug/L	100	120	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	0.45 j b	<0.17	<0.17	<0.17	<1.7	<1.7	<0.68	<1.7	<0.17	<0.17	<0.17
Tetrachloroethene	ug/L	5	4.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<2	<0.8	<2	<0.2	<0.2	<0.2
Toluene	ug/L	1,000	110	0.2 j	<0.17	0.21 j	0.21 j	0.28 j	<0.17	0.22 j	<0.17	<0.17	<0.17	<0.17	<0.17	<1.7	<1.7	<0.68	<1.7	<0.17	<0.17	<0.17
trans-1,2-Dichloroethene	ug/L	100	36	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	2.3 j	1.8 j	0.89 j	2.4 j	<0.15	<0.15	<0.15
trans-1,3-Dichloropropene	ug/L			<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<1.9	<1.9	<0.76	<1.9	<0.19	<0.19	<0.19
Trichloroethene	ug/L	5	0.28	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<1.6	<1.6	<0.64	<1.6	<0.16	<0.16	<0.16
Trichlorofluoromethane	ug/L		520	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<2.9	<2.9	<1.2	<2.9	<0.29	<0.29	<0.29
Vinylchloride	ug/L	2	0.019	<0.1	<0.1	<0.1	<0.1	0.96 j	<0.1	<0.1	3	0.31 j	0.56 j	0.31 j	0.74 j	160	150	60	220	<0.1	<0.1	0.58 j

Highlighted values exceed the

MCL	MCL June 2017
RSL	Tapwater June 2017

j = Estimated Values

Table 2. Summary of VOCs in Groundwater
ERP Coke - Birmingham, AL

Station Name	Units	MCL June 2017	Tapwater June 2017	MW-52	MW-53	MW-53	MW-53	MW-53	MW-54	MW-54	MW-54	MW-54	MW-55	MW-55	MW-55	MW-55	MW-56	MW-56	MW-56	MW-56	MW-70	MW-71
Sample Date				5/17/2017	8/9/2016	11/15/2016	2/14/2017	5/17/2017	8/9/2016	11/16/2016	2/14/2017	5/17/2017	8/10/2016	11/16/2016	2/14/2017	5/17/2017	8/10/2016	11/16/2016	2/14/2017	5/17/2017	8/11/2016	8/11/2016
VOCs 8260B																						
1,1,1-Trichloroethane	ug/L	200	800	<0.16	<0.16	<0.16	<0.16	<0.16	<3.2	<3.2	<3.2	<5 UJ	<320	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
1,1,2,2-Tetrachloroethane	ug/L		0.076	<0.21	<0.21	<0.21	<0.21	<0.21	<4.2	<4.2	<4.2	<5 UJ	<420	<2100	<420	<1100	<8.4	<84	<21	<42	<0.21	<0.21
1,1,2-Trichloroethane	ug/L	5	0.041	<0.27	<0.27	<0.27	<0.27	<0.27	<5.4	<5.4	<5.4	<5 UJ	<540	<2700	<540	<1400	<11	<110	<27	<54	<0.27	<0.27
1,1,2-Trichlorotrifluoroethane	ug/L			<0.42	<0.42	<0.42	<0.42	<0.42	<8.4	<8.4	<8.4	<2.1	<840	<4200	<840	<2100	<17	<170	<42	<84	<0.42	<0.42
1,1-Dichloroethane	ug/L		2.8	<0.22	<0.22	<0.22	<0.22	<0.22	<4.4	<4.4	<4.4	<5 UJ	<440	<2200	<440	<1100	<8.8	<88	<22	<44	<0.22	<0.22
1,1-Dichloroethene	ug/L	7	28	<0.23	<0.23	<0.23	<0.23	<0.23	<4.6	<4.6	<4.6	<5 UJ	<460	<2300	<460	<1200	<9.2	<92	<23	<46	<0.23	<0.23
1,2,3-Trichlorobenzene	ug/L		0.7	<0.21	<0.21	<0.21	<0.21	<0.21	<4.2	<4.2	<4.2	<5 UJ	<420	<2100	<420	<1100	<8.4	<84	<21	<42	<0.21	<0.21
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.21	<0.21	<0.21	<0.21	<0.21	<4.2	<4.2	<4.2	<5 UJ	<420	<2100	<420	<1100	<8.4	<84	<21	<42	<0.21	<0.21
1,2-Dibromo-3-chloropropane	ug/L	0.2	0.00033	<0.47	<0.47	<0.47	<0.47	<0.47	<9.4	<9.4	<9.4	<25 UJ	<940	<4700	<940	<2400	<19	<190	<47	<94	<0.47	<0.47
1,2-Dibromoethane	ug/L	0.05	0.0075	<0.18	<0.18	<0.18	<0.18	<0.18	<3.6	<3.6	<3.6	<5 UJ	<360	<1800	<360	<900	<7.2	<72	<18	<36	<0.18	<0.18
1,2-Dichlorobenzene	ug/L	600	30	<0.15	<0.15	<0.15	<0.15	<0.15	<3	<3	<3	<5 UJ	<300	<1500	<300	<750	<6	<60	<15	<30	<0.15	<0.15
1,2-Dichloroethane	ug/L	5	0.17	<0.13	<0.13	<0.13	<0.13	<0.13	<2.6	<2.6	<2.6	<5 UJ	<260	<1300	<260	<650	<5.2	<52	<13	<26	<0.13	<0.13
1,2-Dichloropropane	ug/L	5	0.14	<0.18	<0.18	<0.18	<0.18	<0.18	<3.6	<3.6	<3.6	<5 UJ	<360	<1800	<360	<900	<7.2	<72	<18	<36	<0.18	<0.18
1,3-Dichlorobenzene	ug/L			<0.13	0.17 j	0.19 j	0.17 j	<0.13	<2.6	<2.6	<2.6	<5 UJ	<260	<1300	<260	<650	<5.2	<52	<13	<26	<0.13	<0.13
1,4-Dichlorobenzene	ug/L	75	0.48	<0.16	0.26 j	0.28 j	0.23 j	<0.16	<3.2	<3.2	<3.2	<5 UJ	400 j	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
1,4-Dioxane	ug/L		0.46	<57	<57	<57	<57	<57	<1100	<1100	<1100	<1000 UJ	<110000	<570000	<110000	<290000	<2300	<23000	<5700	<11000	<57	<57
2-Butanone	ug/L		560	<2	<2	<2	<2	<2	<40	<40	<40	<30 UJ	<4000	<20000	<4000	<10000	<80	<800	<200	<400	<2	<2
2-Hexanone	ug/L		3.8	<1.7	<1.7	<1.7	<1.7	<1.7	<34	<34	<34	<25 UJ	<3400	<17000	<3400	<8500	<68	<680	<170	<340	<1.7	<1.7
4-Methyl-2-pentanone	ug/L			<0.98	<0.98	<0.98	<0.98	<0.98	<20	<20	<20	<25 UJ	<2000	<9800	<2000	<4900	<39	<390	<98	<200	<0.98	<0.98
Acetone	ug/L		1,400	4.2 j	3.1 j	<1.9	5 j	3.1 j	<38	<38	<38	<50 UJ	<3800	<19000	<3800	<9500	<76	<760	<190	<380	<1.9	<1.9
Benzene	ug/L	5	0.46	<0.16	3	2.3	1	0.17 j	9 j	<3.2	<3.2	2.9 j h	50,000	78,000	33,000	78,000	330	92 j	2,900	8,600	<0.16	<0.16
Bromochloromethane	ug/L		8.3	<0.1	<0.1	<0.1	<0.1	<0.1	<2	<2	<2	<5 UJ	<200	<1000	<200	<500	<4	<40	<10	<20	<0.1	<0.1
Bromodichloromethane	ug/L	80	0.13	<0.17	<0.17	<0.17	<0.17	<0.17	<3.4	<3.4	<3.4	<5 UJ	<340	<1700	<340	<850	<6.8	<68	<17	<34	<0.17	<0.17
Bromoform	ug/L	80	3.3	<0.19	<0.19	<0.19	<0.19	<0.19	<3.8	<3.8	<3.8	<5 UJ	<380	<1900	<380	<950	<7.6	<76	<19	<38	<0.19	<0.19
Bromomethane	ug/L		0.75	<0.21	<0.21	<0.21	<0.21	<0.21	<4.2	<4.2	<4.2	<10 UJ	<420	<2100	<420	<1100	<8.4	<84	<21	<42	<0.21	<0.21
Carbon disulfide	ug/L		81	<0.45	<0.45	<0.45	<0.45	<0.45	<9	<9	<9	<10 UJ	<900	<4500	<900	<2300	<18	<180	<45	<90	<0.45	<0.45
Carbon tetrachloride	ug/L	5	0.46	<0.19	<0.19	<0.19	<0.19	<0.19	<3.8	<3.8	<3.8	<5 UJ	<380	<1900	<380	<950	<7.6	<76	<19	<38	<0.19	<0.19
Chlorobenzene	ug/L	100	7.8	1.5	11	10	10	10	590	510	340	300 h	94,000	170,000	96,000	120,000	1,700	3,300	3,200	3,800	<0.17	<0.17
Chloroethane	ug/L		2,100	<0.41	<0.41	<0.41	<0.41	<0.41	<8.2	<8.2	<8.2	<10 UJ	<820	<4100	<820	<2100	<16	<160	<41	<82	<0.41	<0.41
Chloroform	ug/L	80	0.22	<0.16	<0.16	<0.16	<0.16	<0.16	<3.2	<3.2	<3.2	<5 UJ	<320	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
Chloromethane	ug/L		19	<0.3	<0.3	<0.3	<0.3	<0.3	<6	<6	<6	<10 UJ	<600	<3000	<600	<1500	<12	<120	<30	<60	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	3.6	1.3	0.17 j	<0.15	<0.15	0.17 j	<3	<3	<3	<5 UJ	<300	<1500	<300	<750	<6	<60	<15	<30	<0.15	<0.15
cis-1,3-Dichloropropene	ug/L			<0.16	<0.16	<0.16	<0.16	<0.16	<3.2	<3.2	<3.2	<5 UJ	<320	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
Cyclohexane	ug/L		1,300	<0.28	<0.28	<0.28	<0.28	<0.28	<5.6	<5.6	<5.6	<10 UJ	<560	<2800	<560	<1400	<11	<110	<28	<56	<0.28	<0.28
Cyclohexane, Methyl-	ug/L			<0.36	<0.36	<0.36	<0.36	<0.36	<7.2	<7.2	<7.2	<5 UJ	<720	<3600	<720	<1800	<14	<140	<36	<72	<0.36	<0.36
Dibromochloromethane	ug/L	80	0.87	<0.17	<0.17	<0.17	<0.17	<0.17	<3.4	<3.4	<3.4	<5 UJ	<340	<1700	<340	<850	<6.8	<68	<17	<34	<0.17	<0.17
Dichlorodifluoromethane	ug/L		20	<0.31	<0.31	<0.31	<0.31	<0.31	<6.2	<6.2	<6.2	<10 UJ	<620	<3100	<620	<1600	<12	<120	<31	<62	<0.31	<0.31
Ethylbenzene	ug/L	700	1.5	<0.16	<0.16	<0.16	<0.16	<0.16	<3.2	<3.2	<3.2	<5 UJ	<320	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
Isopropylbenzene	ug/L		45	<0.19	<0.19	<0.19	0.2 j	0.24 j	<3.8	<3.8	<3.8	<5 UJ	<380	<1900	<380	<950	16 j	<76	25 j	<38	<0.19	<0.19
m,p-Xylenes	ug/L			<0.34	<0.34	<0.34	<0.34	<0.34	<6.8	<6.8	<6.8	<10 UJ	<680	<3400	<680	<1700	<14	<140	<34	<68	<0.34	<0.34
Methyl Acetate	ug/L			<1.6	<1.6	<1.6	<1.6	<1.6	<33	<33	<33	<25 UJ	<3300	<16000	<3300	<8200	<66	<660	<160	<330	<1.6	<1.6
Methyl tert butyl ether	ug/L		14	<0.25	<0.25	<0.25	<0.25	0.31 j	<5	<5	<5	<25 UJ	<500	<2500	<500	<1300	<10	<100	<25	<50	<0.25	<0.25
Methylene chloride	ug/L	5	11	<0.32	1.3 j b	<0.32	<0.32	<0.32	52 b	<6.4	<6.4	<10 UJ	4,100 b	<3200	<640	<1600	82 b	<130	<32	<64	0.57 j b	0.52 j b
o-Xylene	ug/L		19	<0.19	<0.19	<0.19	<0.19	<0.19	<3.8	<3.8	<3.8	<5 UJ	<380	<1900	<380	<950	<7.6	<76	<19	<38	<0.19	<0.19
Styrene	ug/L	100	120	<0.17	<0.17	<0.17	<0.17	<0.17	<3.4	<3.4	<3.4	<5 UJ	<340	<1700	<340	<850	<6.8	<68	<17	<34	<0.17	<0.17
Tetrachloroethene	ug/L	5	4.1	<0.2	<0.2	<0.2	<0.2	<0.2	<4	<4	<4	<5 UJ	<400	<2000	<400	<1000	<8	<80	<20	<40	<0.2	<0.2
Toluene	ug/L	1,000	110	<0.17	<0.17	<0.17	<0.17	<0.17	<3.4	<3.4	<3.4	<5 UJ	29,000	44,000	26,000	28,000	<6.8	<68	<17	<34	<0.17	<0.17
trans-1,2-Dichloroethene	ug/L	100	36	<0.15	<0.15	<0.15	<0.15	0.15 j	<3	<3	<3	<5 UJ	<300	<1500	<300	<750	<6	<60	<15	<30	<0.15	<0.15
trans-1,3-Dichloropropene	ug/L			<0.19	<0.19	<0.19	<0.19	<0.19	<3.8	<3.8	<3.8	<15 UJ	<380	<1900	<380	<950	<7.6	<76	<19	<38	<0.19	<0.19
Trichloroethene	ug/L	5	0.28	<0.16	<0.16	<0.16	<0.16	<0.16	<3.2	<3.2	<3.2	<5 UJ	<320	<1600	<320	<800	<6.4	<64	<16	<32	<0.16	<0.16
Trichlorofluoromethane	ug/L		520	<0.29	<0.29	<0.29	<0.29	<0.29	<5.8	<5.8	<5.8	<10 UJ	<580	<2900	<580	<1500	<12	<120	<29	<58	<0.29	<0.29
Vinylchloride	ug/L	2	0.019	0.8 j	0.67 j	0.5 j	0.83 j	1.4	<2	<2	<2	<5 UJ	<200	<1000	<200	<500	<4	<40	<10	<20	<0.1	<0.1

Highlighted values exceed the

MCL	MCL June 2017
RSL	Tapwater June 2017

j = Estimated Values

Table 2. Summary of VOCs in Groundwater
ERP Coke - Birmingham, AL

Station Name	Units	MCL June 2017	Tapwater June 2017	MW-72	MW-77	MW-78	MW-78	MW-78	MW-78	MW-80	MW-81	MW-90	MW-90	MW-90	MW-90
Sample Date				8/11/2016	8/9/2016	8/10/2016	11/16/2016	2/14/2017	5/18/2017	8/10/2016	8/10/2016	8/10/2016	11/16/2016	2/15/2017	5/18/2017
VOCs 8260B															
1,1,1-Trichloroethane	ug/L	200	800	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	ug/L		0.076	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.84	<0.21	<0.21	<0.21	<0.21
1,1,2-Trichloroethane	ug/L	5	0.041	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<1.1	<0.27	<0.27	<0.27	<0.27
1,1,2-Trichlorotrifluoroethane	ug/L			<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<1.7	<0.42	<0.42	<0.42	<0.42
1,1-Dichloroethane	ug/L		2.8	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.88	<0.22	<0.22	<0.22	<0.22
1,1-Dichloroethene	ug/L	7	28	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.92	<0.23	<0.23	<0.23	<0.23
1,2,3-Trichlorobenzene	ug/L		0.7	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.84	<0.21	<0.21	<0.21	<0.21
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.84	<0.21	<0.21	<0.21	<0.21
1,2-Dibromo-3-chloropropane	ug/L	0.2	0.00033	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<1.9	<0.47	<0.47	<0.47	<0.47
1,2-Dibromoethane	ug/L	0.05	0.0075	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.72	<0.18	<0.18	<0.18	<0.18
1,2-Dichlorobenzene	ug/L	600	30	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.6	<0.15	<0.15	<0.15	<0.15
1,2-Dichloroethane	ug/L	5	0.17	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.52	<0.13	<0.13	<0.13	<0.13
1,2-Dichloropropane	ug/L	5	0.14	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.72	<0.18	<0.18	<0.18	<0.18
1,3-Dichlorobenzene	ug/L			<0.13	<0.13	0.35 j	0.35 j	0.27 j	0.32 j	<0.13	<0.52	<0.13	<0.13	<0.13	<0.13
1,4-Dichlorobenzene	ug/L	75	0.48	<0.16	<0.16	1	0.99 j	0.84 j	1.1	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
1,4-Dioxane	ug/L		0.46	<57	<57	<57	<57	<57	<57	<57	<230	<57	<57	<57	<57
2-Butanone	ug/L		560	<2	<2	<2	<2	<2	<2	<2	<8	<2	<2	<2	<2
2-Hexanone	ug/L		3.8	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<6.8	<1.7	<1.7	<1.7	<1.7
4-Methyl-2-pentanone	ug/L			<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<3.9	<0.98	<0.98	<0.98	<0.98
Acetone	ug/L		1,400	<1.9	<1.9	2.5 j	<1.9	<1.9	4.4 j	3.6 j	<7.6	<1.9	<1.9	<1.9	4.1 j
Benzene	ug/L	5	0.46	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
Bromochloromethane	ug/L		8.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1
Bromodichloromethane	ug/L	80	0.13	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.68	<0.17	<0.17	<0.17	<0.17
Bromoform	ug/L	80	3.3	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.76	<0.19	<0.19	<0.19	<0.19
Bromomethane	ug/L		0.75	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.84	<0.21	<0.21	<0.21	<0.21
Carbon disulfide	ug/L		81	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<1.8	<0.45	<0.45	<0.45	<0.45
Carbon tetrachloride	ug/L	5	0.46	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.76	<0.19	<0.19	<0.19	<0.19
Chlorobenzene	ug/L	100	7.8	<0.17	<0.17	0.79 j	0.57 j	0.39 j	0.53 j	0.2 j	4.8	<0.17	0.19 j	<0.17	<0.17
Chloroethane	ug/L		2,100	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<1.6	<0.41	<0.41	<0.41	<0.41
Chloroform	ug/L	80	0.22	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
Chloromethane	ug/L		19	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<1.2	<0.3	<0.3	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	3.6	0.3 j	<0.15	0.6 j	0.7 j	0.61 j	0.32 j	<0.15	<0.6	1.2	0.61 j	0.51 j	2.9
cis-1,3-Dichloropropene	ug/L			<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
Cyclohexane	ug/L		1,300	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	11	<0.28	<0.28	<0.28	<0.28
Cyclohexane, Methyl-	ug/L			<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	11	<0.36	<0.36	<0.36	<0.36
Dibromochloromethane	ug/L	80	0.87	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.68	<0.17	<0.17	<0.17	<0.17
Dichlorodifluoromethane	ug/L		20	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<1.2	<0.31	<0.31	<0.31	<0.31
Ethylbenzene	ug/L	700	1.5	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
Isopropylbenzene	ug/L		45	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	67	<0.19	<0.19	<0.19	<0.19
m,p-Xylenes	ug/L			<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<1.4	<0.34	<0.34	<0.34	<0.34
Methyl Acetate	ug/L			<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<6.6	<1.6	<1.6	<1.6	<1.6
Methyl tert butyl ether	ug/L		14	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1	<0.25	<0.25	<0.25	<0.25
Methylene chloride	ug/L	5	11	0.52 j b	0.88 j b	0.71 j b	<0.32	<0.32	<0.32	0.8 j b	6.8 j b	0.76 j b	<0.32	<0.32	<0.32
o-Xylene	ug/L		19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.76	<0.19	<0.19	<0.19	<0.19
Styrene	ug/L	100	120	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.68	<0.17	<0.17	<0.17	<0.17
Tetrachloroethene	ug/L	5	4.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2	<0.2	<0.2	<0.2
Toluene	ug/L	1,000	110	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.68	<0.17	<0.17	<0.17	<0.17
trans-1,2-Dichloroethene	ug/L	100	36	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.6	<0.15	<0.15	<0.15	<0.15
trans-1,3-Dichloropropene	ug/L			<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.76	<0.19	<0.19	<0.19	<0.19
Trichloroethene	ug/L	5	0.28	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.64	<0.16	<0.16	<0.16	<0.16
Trichlorofluoromethane	ug/L		520	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<1.2	<0.29	<0.29	<0.29	<0.29
Vinylchloride	ug/L	2	0.019	0.13 j	<0.1	<0.1	0.44 j	0.1 j	<0.1	<0.1	<0.4	<0.1	<0.1	<0.1	<0.1

Highlighted values exceed the

MCL	MCL June 2017
RSL	Tapwater June 2017

j = Estimated Values

Table 3. Summary of SVOCs and PAHs in Groundwater
ERP Coke - Birmingham, AL

Station Name	Units	MCL June 2017	Tapwater June 2017	MW-49D	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90
Sample Date				8/9/2016	8/9/2016	8/10/2016	8/9/2016	8/10/2016	8/9/2016	8/9/2016	8/10/2016	8/10/2016	8/11/2016	8/11/2016	8/11/2016	8/9/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016
SVOCs 8270D																				
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.28	<0.26	<54	<0.28	<0.27	<0.27	<0.26	280	<0.27	<0.27	<0.27	<0.27	<0.26	<0.27	<0.27	<0.27	<0.27
1,2-Dichlorobenzene	ug/L	600	30	<0.23	<0.22	<44	<0.23	<0.22	<0.22	<0.22	2.3 j	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
1,3-Dichlorobenzene	ug/L			<0.3	<0.28	<58	<0.3	<0.29	<0.29	<0.28	6.3 j	<0.29	<0.29	<0.28	<0.29	<0.28	<0.29	<0.29	<0.29	<0.29
1,4-Dichlorobenzene	ug/L	75	0.48	<0.32	<0.3	<61	<0.32	0.37 j	0.54 j	<0.3	410	0.46 j	<0.3	<0.3	<0.3	<0.3	0.99 j	<0.31	<0.31	<0.31
1,4-Dioxane	ug/L		0.46	<1.7	<1.6	<320	<1.7	1.7 j	<1.6	<1.6	<1.6	1.6 j	<1.6	<1.6	<1.6	<1.6	<1.6	1.9 j	1.7 j	<1.6
2,4,5-Trichlorophenol	ug/L		120	<0.45	<0.43	<86	<0.44	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.42	<0.43	<0.43	<0.43	<0.43
2,4,6-Trichlorophenol	ug/L		1.2	<0.29	<0.27	<56	<0.29	<0.28	<0.28	<0.27	<0.28	<0.28	<0.28	<0.27	<0.28	<0.27	<0.28	<0.28	<0.28	<0.28
2,4-Dichlorophenol	ug/L		4.6	<0.63	<0.61	<120	<0.63	<0.61	<0.61	<0.6	<0.61	<0.61	<0.61	<0.61	<0.61	<0.6	<0.61	<0.61	<0.62	<0.62
2,4-Dimethylphenol	ug/L		36	<0.57	<0.55	<110	<0.57	<0.56	<0.55	<0.55	<0.55	<0.56	<0.55	<0.55	<0.55	<0.55	<0.55	<0.56	<0.56	<0.56
2,4-Dinitrophenol	ug/L		3.9	<9.9	<9.5	<1900	<9.9	<9.6	<9.6	<9.4	<9.5	<9.6	<9.5	<9.5	<9.5	<9.4	<9.6	<9.6	<9.6	<9.6
2,4-Dinitrotoluene	ug/L		0.24	<1.6	<1.6	<320	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
2-Chloronaphthalene	ug/L		75	<0.26	<0.25	<50	<0.26	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2-Chlorophenol	ug/L		9.1	<2	<1.9	<380	<2	<1.9	<1.9	<1.9	17	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
2-Methylnaphthalene	ug/L		3.6	<0.29	<0.27	<56	<0.29	<0.28	<0.28	<0.27	1.6 j	0.37 j	<0.28	<0.27	<0.28	<0.27	<0.28	<0.28	0.3 j	<0.28
2-Methylphenol	ug/L		93	<0.97	<0.93	<190	<0.97	<0.94	<0.94	<0.93	8.4 j	<0.94	<0.93	<0.93	<0.93	<0.92	<0.94	<0.94	<0.94	<0.94
2-Nitroaniline	ug/L		19	<1.7	<1.6	<330	<1.7	<1.7	100	<1.6	<1.7	<1.7	<1.6	<1.6	<1.6	<1.6	<1.7	<1.7	<1.7	<1.7
2-Nitrophenol	ug/L			<0.39	<0.37	<75	<0.38	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.38	<0.37
3,3'-Dichlorobenzidine	ug/L		0.13	<2	<1.9	<380	<2	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
3/4-Methylphenol	ug/L			0.44 j	<0.24	<48	<0.25	0.48 j	0.4 j	<0.24	14	1.6 j	<0.24	<0.24	<0.24	<0.24	<0.24	0.56 j	<0.24	<0.24
3-Nitroaniline	ug/L			<2	<1.9	<380	<2	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
4,6-Dinitro-2-methylphenol	ug/L		0.15	<4	<3.8	<770	<3.9	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.9	<3.8
4-Bromophenyl-phenylether	ug/L			<0.43	<0.41	<83	<0.42	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
4-Chloroaniline	ug/L			<2.1	<2	<410	<2.1	<2.1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.1	<2.1	<2.1
4-Chlorophenyl-phenylether	ug/L			<1.6	<1.6	<320	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
4-Nitroaniline	ug/L		3.8	<2	<1.9	<380	<2	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
4-Nitrophenol	ug/L			<1.2	<1.2	<240	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Acenaphthene	ug/L		53	<0.28	<0.26	<54	1 j	0.84 j	8.3	14	0.99 j	3.8	<0.27	<0.27	<0.27	<0.26	<0.27	<0.27	13	<0.27
Acenaphthylene	ug/L			<0.49	<0.46	<94	<0.48	<0.47	<0.47	<0.46	<0.47	<0.47	<0.47	<0.46	<0.47	<0.46	<0.47	<0.47	<0.47	<0.47
Acetophenone	ug/L		190	<0.24	<0.23	<46	<0.24	<0.23	<0.23	<0.23	1.9 j	0.39 j	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	1 j	0.24 j
Anthracene	ug/L		180	<0.42	<0.4	<81	<0.41	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Benz(a)anthracene	ug/L		0.03	<0.35	<0.33	<67	<0.35	<0.34	<0.33	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33	<0.33	<0.33	<0.34	<0.34	<0.34
Benzo(a)pyrene	ug/L	0.2	0.025	<0.31	<0.29	<59	<0.31	<0.3	<0.3	<0.29	<0.3	<0.3	<0.29	<0.29	<0.29	<0.29	<0.3	<0.3	<0.3	<0.3
Benzo(b)fluoranthene	ug/L		0.25	<0.53	<0.5	<100	<0.52	<0.51	<0.51	<0.5	<0.51	<0.51	<0.51	<0.5	<0.5	<0.5	<0.51	<0.51	<0.51	<0.51
Benzo(g,h,i)perylene	ug/L			<0.5	<0.47	<96	<0.49	<0.48	<0.48	<0.47	<0.48	<0.48	<0.48	<0.47	<0.48	<0.47	<0.48	<0.48	<0.48	<0.48
Benzo(k)fluoranthene	ug/L		2.5	<0.46	<0.43	<88	<0.45	<0.44	<0.44	<0.43	<0.44	<0.44	<0.44	<0.44	<0.44	<0.43	<0.44	<0.44	<0.44	<0.44
Benzyl alcohol	ug/L		200	<0.23	<0.22	<44	1 j b	<0.22	<0.22	<0.22	0.69 j	0.45 j	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	0.53 j	<0.22
bis(2-Chloroethoxy)methane	ug/L		5.9	<0.96	<0.92	<190	<0.96	<0.93	<0.93	<0.92	<0.93	<0.93	<0.92	<0.92	<0.92	<0.91	<0.93	<0.93	<0.93	<0.93
bis(2-Chloroethyl)ether	ug/L		0.014	<0.41	<0.39	<79	<0.4	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
bis(2-Chloroisopropyl)ether	ug/L		71	<0.28	<0.26	<54	<0.28	<0.27	<0.27	<0.26	<0.27	<0.27	<0.27	<0.27	<0.27	<0.26	<0.27	<0.27	<0.27	<0.27
bis(2-Ethylhexyl)phthalate	ug/L	6	5.6	<0.56	<0.53	<110	<0.55	<0.54	<0.54	<0.53	<0.53	0.56 j	1.3 j	<0.53	<0.53	<0.53	<0.54	<0.54	<0.54	<0.54
Butyl benzyl phthalate	ug/L		16	<0.99	<0.95	<190	<0.99	<0.96	<0.96	<0.94	<0.95	<0.96	<0.95	<0.95	<0.95	<0.94	<0.96	<0.96	<0.96	<0.96
Carbazole	ug/L			<0.43	<0.41	<83	<0.42	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
Chrysene	ug/L		25	<0.54	<0.51	<100	<0.53	<0.52	<0.52	<0.51	<0.52	<0.52	<0.51	<0.51	<0.51	<0.51	<0.52	<0.52	<0.52	<0.52
Dibenz(a,h)anthracene	ug/L		0.025	<0.51	<0.48	<98	<0.5	<0.49	<0.49	<0.48	<0.49	<0.49	<0.49	<0.48	<0.48	<0.48	<0.49	<0.49	<0.49	<0.49
Dibenzofuran	ug/L		0.79	<0.29	<0.27	<56	<0.29	<0.28	<0.28	<0.27	1.3 j	1.7 j	<0.28	<0.27	<0.28	<0.27	<0.28	<0.28	<0.28	<0.28
Diethylphthalate	ug/L		1,500	<0.38	<0.36	<73	<0.37	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.37	<0.37
Dimethyl phthalate	ug/L			<0.21	<0.2	<40	<0.21	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Di-N-Butyl phthalate	ug/L		90	<1.1	<1.1	<220	<1.1	<1.1	<1.1	<1.1	1.5 j	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Di-N-Octyl phthalate	ug/L		20	<0.35	<0.33	<67	<0.35	<0.34	<0.33	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33	<0.33	<0.33	<0.34	<0.34	<0.34
Fluoranthene	ug/L		80	<0.2	<0.19	<38	<0.2	<0.19	<0.19	1.6 j	0.6 j	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	0.7 j	<0.19
Fluorene	ug/L		29	<0.31	<0.29	<59	<0.31	<0.3	<0.3	<0.29	1.9 j	4.7	<0.29	<0.29	<0.29	<0.29	<0.3	<0.3	3.1 j	<0.3
Hexachlorobenzene	ug/L	1	0.0098	<0.65	<0.62	<130	<0.65	<0.63	<0.63	<0.62	<0.63	<0.63	<0.63	<0.63	<0.63	<0.62	<0.63	<0.63	<0.64	<0.63
Hexachlorobutadiene	ug/L		0.14	<3.3	<3.1	<630	<3.3	<3.2	<3.2	<3.1	<3.2	<3.2	<3.1	<3.1	<3.1	<3.1	<3.2	<3.2	<3.2	<3.2

Table 3. Summary of SVOCs and PAHs in Groundwater
ERP Coke - Birmingham, AL

Station Name	Units	MCL June 2017	Tapwater June 2017	MW-49D	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90
Sample Date				8/9/2016	8/9/2016	8/10/2016	8/9/2016	8/10/2016	8/9/2016	8/9/2016	8/10/2016	8/10/2016	8/11/2016	8/11/2016	8/11/2016	8/9/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016
Hexachlorocyclopentadiene	ug/L	50	0.041	<1.5	<1.4	<290	<1.5	<1.5	<1.5	<1.4	<1.5	<1.5	<1.5	<1.5	<1.5	<1.4	<1.5	<1.5	<1.5	<1.5
Hexachloroethane	ug/L		0.33	<2.1	<2	<400	<2.1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Indeno(1,2,3-cd)pyrene	ug/L		0.25	<0.64	<0.61	<120	<0.64	<0.62	<0.62	<0.61	<0.62	<0.62	<0.62	<0.62	<0.62	<0.61	<0.62	<0.62	<0.63	<0.62
Isophorone	ug/L		78	<0.21	<0.2	<40	<0.21	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	ug/L		0.17	<0.29	<0.27	<56	<0.29	<0.28	<0.28	<0.27	23	9.5	<0.28	<0.27	<0.28	<0.27	<0.28	<0.28	<0.28	<0.28
Nitrobenzene	ug/L		0.14	<0.8	<0.77	<160	<0.8	<0.78	<0.77	<0.77	<0.77	<0.78	<0.77	<0.77	<0.77	<0.76	<0.77	<0.78	<0.78	<0.78
N-Nitroso-di-N-propylamine	ug/L		0.011	<0.35	<0.33	<67	<0.35	<0.34	<0.33	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33	<0.33	<0.33	<0.34	<0.34	<0.34
N-Nitrosodiphenylamine	ug/L		12	<0.44	<0.42	<84	<0.43	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.41	<0.42	<0.42	<0.42	<0.42
p-Chloro-m-cresol	ug/L			<2.4	<2.3	<460	<2.4	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3
Pentachlorophenol	ug/L	1	0.041	<20	<19	<3800	<20	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19
Phenanthrene	ug/L			<0.26	<0.25	<50	<0.26	<0.25	<0.25	<0.25	1.8 j	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Phenol	ug/L		580	<2	<1.9	<380	<2	2.2 j	2.4 j	<1.9	43	1.9 j	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
Pyrene	ug/L		12	<0.37	<0.35	<71	<0.36	<0.36	<0.35	1.4 j	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.36	<0.36
PAHs 8270D SIM																				
2-Methylnaphthalene	ug/L		3.6	<0.0049	<0.0049	<0.096 UJ	<0.0049	<0.095 UJ	<0.0049	0.059 j	1.7 h	0.34 j	<0.005	<0.005	<0.005	<0.0049	<0.095 UJ	<0.095 UJ	0.28 j	<0.095 UJ
Acenaphthene	ug/L		53	<0.01	0.03 j	<0.096 UJ	0.87	0.86 h	8.5	15	1.1 h	4 h	<0.011	<0.01	<0.011	<0.01	<0.095 UJ	0.041 j h	14 h	<0.095 UJ
Acenaphthylene	ug/L			<0.0095	<0.0095	<0.096 UJ	0.027 j	<0.0094	0.12	0.13	<0.095	<0.048	<0.0097	<0.0096	<0.0097	0.016 j	<0.095 UJ	<0.095 UJ	<0.095 UJ	<0.095 UJ
Anthracene	ug/L		180	<0.014	0.013 j	<0.096 UJ	0.05 j	0.044 j h	<0.014	0.3	0.38 j	0.18 j	<0.014	<0.014	<0.014	<0.013	<0.095 UJ	<0.095 UJ	0.32 j	<0.095 UJ
Benz(a)anthracene	ug/L		0.03	<0.0031	<0.003	<0.096 UJ	<0.0031	<0.095 UJ	0.011 j b	0.27 b	0.087 j h	0.076 j h	<0.0031	<0.0031	<0.0031	<0.003	<0.095 UJ	0.068 j h	<0.015	<0.095 UJ
Benzo(a)pyrene	ug/L	0.2	0.025	<0.0049	<0.0049	<0.096 UJ	<0.0049	<0.0049	0.0066 j b	0.13 b	<0.096 UJ	<0.096 UJ	<0.005	<0.005	<0.005	<0.0049	<0.095 UJ	<0.095 UJ	<0.095 UJ	<0.095 UJ
Benzo(b)fluoranthene	ug/L		0.25	0.0045 j	<0.0033	<0.096 UJ	<0.0033	<0.095 UJ	0.0074 j	0.21	<0.033	<0.016	<0.0034	<0.0033	<0.0033	<0.0033	<0.095 UJ	0.032 j h	<0.095 UJ	<0.095 UJ
Benzo(g,h,i)perylene	ug/L			<0.0034	<0.0034	<0.096 UJ	<0.0034	<0.095 UJ	0.011 j b	0.094 j b	<0.034	<0.017	<0.0035	<0.0034	<0.0035	<0.0034	<0.095 UJ	0.017 j h	<0.095 UJ	<0.095 UJ
Benzo(k)fluoranthene	ug/L		2.5	<0.0048	<0.0048	<0.096 UJ	<0.0048	<0.095 UJ	0.0074 j b	0.094 j b	<0.096 UJ	<0.0048	<0.0049	<0.0049	<0.0049	<0.0048	<0.095 UJ	<0.0048	<0.095 UJ	<0.095 UJ
Chrysene	ug/L		25	0.0045 j b	<0.003	<0.096 UJ	<0.003	<0.095 UJ	0.03 j b	0.22 b	0.039 j h	0.049 j h	<0.0031	<0.0031	<0.0031	<0.003	<0.095 UJ	0.026 j h	<0.015	<0.095 UJ
Dibenz(a,h)anthracene	ug/L		0.025	<0.0046	<0.0046	<0.096 UJ	<0.0046	<0.095 UJ	0.0099 j b	0.029 j b	<0.096 UJ	<0.023	<0.0047	<0.0047	<0.0047	<0.0046	<0.095 UJ	<0.095 UJ	<0.095 UJ	<0.095 UJ
Fluoranthene	ug/L		80	0.0049 j	0.0054 j	<0.096 UJ	0.071 j	0.012 j h	0.26	1.6	0.55 j	0.43 j	<0.0044	<0.0044	<0.0044	<0.0043	<0.095 UJ	0.042 j h	0.76 h	<0.095 UJ
Fluorene	ug/L		29	0.032 j	<0.018	<0.096 UJ	0.055 j	<0.095 UJ	0.12	0.2	2 h	5.1 h	<0.018	<0.018	<0.018	<0.018	<0.095 UJ	<0.095 UJ	3.1 h	<0.095 UJ
Indeno(1,2,3-cd)pyrene	ug/L		0.25	<0.014	<0.014	<0.096 UJ	<0.014	<0.095 UJ	<0.014	0.083 j	<0.096 UJ	<0.014	<0.014	<0.014	<0.014	<0.014	<0.095 UJ	<0.014	<0.095 UJ	<0.095 UJ
Naphthalene	ug/L		0.17	0.051 j	0.017 j	0.014 j h	0.0088 j	<0.005	0.011 j	0.25	23 h	9.9 h	<0.0052	<0.0052	0.0084 j	<0.0051	<0.095 UJ	<0.095 UJ	0.2 j	<0.095 UJ
Phenanthrene	ug/L			<0.0093	0.0093 j	<0.096 UJ	<0.0093	<0.095 UJ	<0.0093	0.23	1.6 h	0.28 j	<0.0095	<0.0094	<0.0095	<0.0092	<0.095 UJ	<0.0092	0.51 h	<0.095 UJ
Pyrene	ug/L		12	<0.0077	<0.0077	<0.096 UJ	0.036 j	0.0088 j h	0.13	1.4	0.33 j	0.27 j	<0.0079	<0.0078	<0.0079	<0.0077	<0.095 UJ	0.04 j h	0.3 j	<0.095 UJ

Highlighted values exceed the

MCL	MCL June 2017
RSL	Tapwater June 2017

j = Estimated Values

Table 4. VOC and SVOCs Concentrations in Effluent Samples
ERP Coke - Birmingham, Alabama

Station Name	Units	MCL June 2017	Tapwater June 2017	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT
Sample Date				8/11/2016	11/16/2016	2/15/2017	5/18/2017
VOCs 8260B							
1,1,1-Trichloroethane	ug/L	200	800	<0.16	<1 UJ	<0.16	<0.16
1,1,2,2-Tetrachloroethane	ug/L		0.076	<0.21	<1 UJ	<0.21	<0.21
1,1,2-Trichloroethane	ug/L	5	0.041	<0.27	<1 UJ	<0.27	<0.27
1,1,2-Trichlorotrifluoroethane	ug/L			<0.42	<3 UJ	<0.42	<0.42
1,1-Dichloroethane	ug/L		2.8	<0.22	<1 UJ	<0.22	<0.22
1,1-Dichloroethene	ug/L	7	28	<0.23	<1 UJ	<0.23	<0.23
1,2,3-Trichlorobenzene	ug/L		0.7	<0.21	<1 UJ	<0.21	<0.21
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.21	<1 UJ	<0.21	4.5
1,2-Dibromo-3-chloropropane	ug/L	0.2	0.00033	<0.47	<5 UJ	<0.47	<0.47
1,2-Dibromoethane	ug/L	0.05	0.0075	<0.18	<1 UJ	<0.18	<0.18
1,2-Dichlorobenzene	ug/L	600	30	<0.15	<1 UJ	<0.15	<0.15
1,2-Dichloroethane	ug/L	5	0.17	<0.13	<1 UJ	<0.13	<0.13
1,2-Dichloropropane	ug/L	5	0.14	<0.18	<1 UJ	<0.18	<0.18
1,3-Dichlorobenzene	ug/L			<0.13	<1 UJ	<0.13	2.9
1,4-Dichlorobenzene	ug/L	75	0.48	<0.16	<1 UJ	<0.16	2.8
1,4-Dioxane	ug/L		0.46	<57	<200 UJ	<57	<57
2-Butanone	ug/L		560	<2	<6 UJ	<2	<2
2-Hexanone	ug/L		3.8	<1.7	<5 UJ	<1.7	<1.7
4-Methyl-2-pentanone	ug/L			<0.98	<5 UJ	<0.98	<0.98
Acetone	ug/L		1,400	2.7 j	3.2 j h	5.5 j	8.8 j
Benzene	ug/L	5	0.46	8.7	5.8 h	2.4	22
Bromochloromethane	ug/L		8.3	<0.1	<1 UJ	<0.1	<0.1
Bromodichloromethane	ug/L	80	0.13	<0.17	<1 UJ	<0.17	<0.17
Bromoform	ug/L	80	3.3	<0.19	<1 UJ	<0.19	<0.19
Bromomethane	ug/L		0.75	<0.21	<2 UJ	<0.21	<0.21
Carbon disulfide	ug/L		81	<0.45	<2 UJ	<0.45	<0.45
Carbon tetrachloride	ug/L	5	0.46	<0.19	<1 UJ	<0.19	<0.19
Chlorobenzene	ug/L	100	7.8	4	8.4 h	7.4	19
Chloroethane	ug/L		2,100	<0.41	<2 UJ	<0.41	<0.41
Chloroform	ug/L	80	0.22	<0.16	<1 UJ	<0.16	<0.16
Chloromethane	ug/L		19	<0.3	<2 UJ	<0.3	<0.3
cis-1,2-Dichloroethene	ug/L	70	3.6	1.3	1.2 h	0.39 j	1.5
cis-1,3-Dichloropropene	ug/L			<0.16	<1 UJ	<0.16	<0.16
Cyclohexane	ug/L		1,300	<0.28	<2 UJ	<0.28	<0.28
Cyclohexane, Methyl-	ug/L			<0.36	<1 UJ	<0.36	<0.36
Dibromochloromethane	ug/L	80	0.87	<0.17	<1 UJ	<0.17	<0.17
Dichlorodifluoromethane	ug/L		20	<0.31	<2 UJ	<0.31	<0.31
Ethylbenzene	ug/L	700	1.5	0.33 j	<1 UJ	0.21 j	<0.16
Isopropylbenzene	ug/L		45	<0.19	<1 UJ	<0.19	<0.19
m,p-Xylenes	ug/L			<0.34	0.45 j h	<0.34	<0.34
Methyl Acetate	ug/L			<1.6	<5 UJ	<1.6	<1.6
Methyl tert butyl ether	ug/L		14	<0.25	<5 UJ	<0.25	<0.25
Methylene chloride	ug/L	5	11	0.44 j b	<2 UJ	<0.32	<0.32
o-Xylene	ug/L		19	0.59 j	1.7 h	0.45 j	1.4
Styrene	ug/L	100	120	<0.17	<1 UJ	<0.17	<0.17
Tetrachloroethene	ug/L	5	4.1	<0.2	<1 UJ	<0.2	<0.2
Toluene	ug/L	1,000	110	0.62 j	28 h	7.7	27
trans-1,2-Dichloroethene	ug/L	100	36	<0.15	<1 UJ	<0.15	<0.15
trans-1,3-Dichloropropene	ug/L			<0.19	<3 UJ	<0.19	<0.19
Trichloroethene	ug/L	5	0.28	<0.16	<1 UJ	<0.16	<0.16
Trichlorofluoromethane	ug/L		520	<0.29	<2 UJ	<0.29	<0.29
Vinylchloride	ug/L	2	0.019	9	17 h	3.1	7

Table 4. VOC and SVOCs Concentrations in Effluent Samples
ERP Coke - Birmingham, Alabama

Station Name	Units	MCL June 2017	Tapwater June 2017	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT
Sample Date				8/11/2016	11/16/2016	2/15/2017	5/18/2017
SVOCs 8270D							
1,2,4-Trichlorobenzene	ug/L	70	0.4	<0.27	<0.27	<0.27	3.2 j
1,2-Dichlorobenzene	ug/L	600	30	<0.22	<0.22	<0.22	<0.23
1,3-Dichlorobenzene	ug/L			<0.29	<0.29	<0.29	1.8 j
1,4-Dichlorobenzene	ug/L	75	0.48	<0.3	<0.31	<0.31	1.6 j
1,4-Dioxane	ug/L		0.46	<1.6	<1.6	<1.6	<1.7
2,4,5-Trichlorophenol	ug/L		120	<0.43	<0.43	<0.43	<0.44
2,4,6-Trichlorophenol	ug/L		1.2	<0.28	<0.28	<0.28	<0.29
2,4-Dichlorophenol	ug/L		4.6	<0.61	<0.62	<0.62	<0.63
2,4-Dimethylphenol	ug/L		36	<0.55	<0.56	<0.56	<0.57
2,4-Dinitrophenol	ug/L		3.9	<9.5	<9.6	<9.6	<9.9
2,4-Dinitrotoluene	ug/L		0.24	<1.6	<1.6	<1.6	<1.6
2-Chloronaphthalene	ug/L		75	<0.25	<0.25	<0.25	<0.26
2-Chlorophenol	ug/L		9.1	<1.9	<1.9	<1.9	<2
2-Methylnaphthalene	ug/L		3.6	<0.28	<0.28	<0.28	<0.29
2-Methylphenol	ug/L		93	<0.93	<0.94	<0.95	<0.97
2-Nitroaniline	ug/L		19	<1.6	<1.7	<1.7	<1.7
2-Nitrophenol	ug/L			<0.37	<0.37	<0.38	<0.38
3,3'-Dichlorobenzidine	ug/L		0.13	<1.9	<1.9	<1.9	<2
3/4-Methylphenol	ug/L			<0.24	<0.24	<0.24	<0.25
3-Nitroaniline	ug/L			<1.9	<1.9	<1.9	<2
4,6-Dinitro-2-methylphenol	ug/L		0.15	<3.8	<3.8	<3.9	<3.9
4-Bromophenyl-phenylether	ug/L			<0.41	<0.41	<0.41	<0.42
4-Chloroaniline	ug/L			<2	<2.1	<2.1	<2.1
4-Chlorophenyl-phenylether	ug/L			<1.6	<1.6	<1.6	<1.6
4-Nitroaniline	ug/L		3.8	<1.9	<1.9	<1.9	<2
4-Nitrophenol	ug/L			<1.2	<1.2	<1.2	<1.2
Acenaphthene	ug/L		53	<0.27	<0.27	<0.27	<0.28
Acenaphthylene	ug/L			<0.47	<0.47	<0.47	<0.48
Acetophenone	ug/L		190	<0.23	<0.23	<0.23	<0.24
Anthracene	ug/L		180	<0.4	<0.4	<0.41	<0.41
Benz(a)anthracene	ug/L		0.03	<0.33	<0.34	<0.34	<0.34
Benzo(a)pyrene	ug/L	0.2	0.025	<0.3	<0.3	<0.3	<0.31
Benzo(b)fluoranthene	ug/L		0.25	<0.51	<0.51	<0.51	<0.52
Benzo(g,h,i)perylene	ug/L			<0.48	<0.48	<0.48	<0.49
Benzo(k)fluoranthene	ug/L		2.5	<0.44	<0.44	<0.44	<0.45
Benzyl alcohol	ug/L		200	<0.22	<0.22	<0.22	<0.23
bis(2-Chloroethoxy)methane	ug/L		5.9	<0.92	<0.93	<0.94	<0.96
bis(2-Chloroethyl)ether	ug/L		0.014	<0.39	<0.39	<0.4	<0.4
bis(2-Chloroisopropyl)ether	ug/L		71	<0.27	<0.27	<0.27	<0.28
bis(2-Ethylhexyl)phthalate	ug/L	6	5.6	<0.53	<0.54	<0.54	<0.55
Butyl benzyl phthalate	ug/L		16	<0.95	<0.96	<0.96	<0.99
Carbazole	ug/L			<0.41	<0.41	<0.41	<0.42
Chrysene	ug/L		25	<0.51	<0.52	<0.52	<0.53
Dibenz(a,h)anthracene	ug/L		0.025	<0.49	<0.49	<0.49	<0.5
Dibenzofuran	ug/L		0.79	<0.28	<0.28	<0.28	<0.29
Diethylphthalate	ug/L		1,500	<0.36	<0.37	<0.37	<0.37
Dimethyl phthalate	ug/L			<0.2	<0.2	<0.2	<0.21
Di-N-Butyl phthalate	ug/L		90	<1.1	<1.1	<1.1	<1.1
Di-N-Octyl phthalate	ug/L		20	<0.33	<0.34	<0.34	<0.34
Fluoranthene	ug/L		80	<0.19	<0.19	<0.19	<0.2
Fluorene	ug/L		29	<0.3	<0.3	<0.3	<0.31
Hexachlorobenzene	ug/L	1	0.0098	<0.63	<0.63	<0.64	<0.65
Hexachlorobutadiene	ug/L		0.14	<3.1	<3.2	<3.2	<3.3

Table 4. VOC and SVOCs Concentrations in Effluent Samples
ERP Coke - Birmingham, Alabama

Station Name	Units	MCL June 2017	Tapwater June 2017	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT
Sample Date				8/11/2016	11/16/2016	2/15/2017	5/18/2017
Hexachlorocyclopentadiene	ug/L	50	0.041	<1.5	<1.5	<1.5	<1.5
Hexachloroethane	ug/L		0.33	<2	<2	<2	<2.1
Indeno(1,2,3-cd)pyrene	ug/L		0.25	<0.62	<0.62	<0.63	<0.64
Isophorone	ug/L		78	<0.2	<0.2	<0.2	<0.21
Naphthalene	ug/L		0.17	<0.28	<0.28	<0.28	<0.29
Nitrobenzene	ug/L		0.14	<0.77	<0.78	<0.78	<0.8
N-Nitroso-di-N-propylamine	ug/L		0.011	<0.33	<0.34	<0.34	<0.34
N-Nitrosodiphenylamine	ug/L		12	<0.42	<0.42	<0.42	<0.43
p-Chloro-m-cresol	ug/L			<2.3	<2.3	<2.3	<2.4
Pentachlorophenol	ug/L	1	0.041	<19	<19	<19	<20
Phenanthrene	ug/L			<0.25	<0.25	<0.25	<0.26
Phenol	ug/L		580	<1.9	<1.9	<1.9	<2
Pyrene	ug/L		12	<0.35	<0.36	<0.36	<0.36

Highlighted values exceed the

MCL	MCL June 2017
RSL	Tapwater June 2017

j = Estimated Values

Table 5. Total VOCS and SVOCs Recovered July 2016 through September 2016
ERP Coke - Birmingham, Alabama

PARAMETER				VALUE
Benzene				
Concentration (µg/L)				8.7
Estimated Total Gallons				434,268
Lbs Removed per Gallon				0.000000073
Lbs Removed				0.03

PARAMETER				VALUE
Chlorobenzene				
Concentration (µg/L)				4
Estimated Total Gallons				434,268
Lbs Removed per Gallon				0.000000033
Lbs Removed				0.0145

PARAMETER				VALUE
cis-1,2-Dichloroethene				
Concentration (µg/L)				1
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000011
Lbs Removed				0.004

PARAMETER				VALUE
Vinyl Chloride				
Concentration (µg/L)				9
Estimated Total Gallons				434,268
Lbs Removed per Gallon				0.000000075
Lbs Removed				0.033

Notes:
Effluent Sample Collected on 8/11/2016
1 Pound = 454 grams
1 gram = 1,000,000 µgrams
1 Liter = 0.26417 Gallons
1 gallon = 7.48 cubic feet

Total Estimated Mass (lbs) VOCs and SVOCs Removed 0.08

TO CALCULATE TOTAL POUNDS REMOVED:

Total Lbs Removed = (Conc. (µ gram) / Liter) x (1 lb / 454 gram) x (1 gram / 10^6 µ gram) x (1 Liter / 0.26417 Gal) x Total Gallons

Table 6. Total VOCS and SVOCs Recovered October 2016 through December 2016
ERP Coke - Birmingham, Alabama

PARAMETER				VALUE
Benzene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.00

PARAMETER				VALUE
Chlorobenzene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.0000

PARAMETER				VALUE
1,2,4-Trichlorobenzene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Toluene				
Concentration (µg/L)				0.0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
o-Xylene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
1,4-Dichlorobenzene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
cis-1,2-Dichloroethene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Ethylbenzene				
Concentration (µg/L)				0.0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
m,p-Xylenes				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Vinyl Chloride				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
1,3-Dichlorobenzene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Naphthalene				
Concentration (µg/L)				0.0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Anthracene				
Concentration (µg/L)				0.0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

PARAMETER				VALUE
Benzo(a)anthracene				
Concentration (µg/L)				0
Estimated Total Gallons				401,257
Lbs Removed per Gallon				0.000000000
Lbs Removed				0.000

Notes:
Effluent Sample Collected on 11/16/2016
1 Pound = 454 grams
1 gram = 1,000,000 µgrams
1 Liter = 0.26417 Gallons
1 gallon = 7.48 cubic feet

Total Estimated Mass (lbs) VOCs and SVOCs Removed 0.00

TO CALCULATE TOTAL POUNDS REMOVED:

Total Lbs = Removed

$$\frac{\text{Conc. (µ gram)}}{\text{Liter}} \times \frac{1\text{ lb}}{454\text{ gram}} \times \frac{1\text{ gram}}{10\text{^6 µ gram}} \times \frac{1\text{ Liter}}{0.26417\text{ Gal}} \times \text{Total Gallons}$$

Table 7. Total VOCS and SVOCs Recovered January 2017 through March 2017
ERP Coke - Birmingham, Alabama

PARAMETER				VALUE
Benzene				
Concentration (µg/L)				2.4
Estimated Total Gallons				462,327
Lbs Removed per Gallon				0.000000020
Lbs Removed				0.01

PARAMETER				VALUE
Chlorobenzene				
Concentration (µg/L)				7.4
Estimated Total Gallons				462,327
Lbs Removed per Gallon				0.000000062
Lbs Removed				0.0285

PARAMETER				VALUE
Vinyl Chloride				
Concentration (µg/L)				3.1
Estimated Total Gallons				462,327
Lbs Removed per Gallon				0.000000026
Lbs Removed				0.012

PARAMETER				VALUE
Toluene				
Concentration (µg/L)				7.7
Estimated Total Gallons				462,327
Lbs Removed per Gallon				0.000000064
Lbs Removed				0.030

Notes:
Effluent Sample Collected on 2/15/2017
1 Pound = 454 grams
1 gram = 1,000,000 µgrams
1 Liter = 0.26417 Gallons
1 gallon = 7.48 cubic feet

Total Estimated Mass (lbs) VOCs and SVOCs Removed ***0.08***

TO CALCULATE TOTAL POUNDS REMOVED:

Total Lbs Removed = $\frac{\text{Conc. (µ gram)}}{\text{Liter}} \times \frac{1\text{ lb}}{454\text{ gram}} \times \frac{1\text{ gram}}{10\text{^6 µ gram}} \times \frac{1\text{ Liter}}{0.26417\text{ Gal}} \times \text{Total Gallons}$

Table 8. Total VOCS and SVOCs Recovered April 2017 through June 2017
ERP Coke - Birmingham, Alabama

PARAMETER	VALUE
Benzene	
Concentration (µg/L)	22
Estimated Total Gallons	511,825
Lbs Removed per Gallon	0.000000183
Lbs Removed	0.09

PARAMETER	VALUE
Chlorobenzene	
Concentration (µg/L)	19
Estimated Total Gallons	511,825
Lbs Removed per Gallon	0.000000158
Lbs Removed	0.0811

PARAMETER	VALUE
cis-1,2-Dichloroethene	
Concentration (µg/L)	2
Estimated Total Gallons	401,257
Lbs Removed per Gallon	0.000000013
Lbs Removed	0.005

PARAMETER	VALUE
Toluene	
Concentration (µg/L)	27
Estimated Total Gallons	511,825
Lbs Removed per Gallon	0.000000225
Lbs Removed	0.115

PARAMETER	VALUE
o-Xylene	
Concentration (µg/L)	1.4
Estimated Total Gallons	511,825
Lbs Removed per Gallon	0.000000012
Lbs Removed	0.006

PARAMETER	VALUE
Vinyl Chloride	
Concentration (µg/L)	7
Estimated Total Gallons	511,825
Lbs Removed per Gallon	0.000000058
Lbs Removed	0.030

Notes:
Effluent Sample Collected on 5/18/2017
1 Pound = 454 grams
1 gram = 1,000,000 µgrams
1 Liter = 0.26417 Gallons
1 gallon = 7.48 cubic feet

Total Estimated Mass (lbs) VOCs and SVOCs Removed 0.24

TO CALCULATE TOTAL POUNDS REMOVED:

Total Lbs Removed = (Conc. (µ gram) / Liter) x (1 lb / 454 gram) x (1 gram / 10^6 µ gram) x (1 Liter / 0.26417 Gal) x Total Gallons

Table 9. Total Volume of Groundwater Pumped from the Hydraulic Control System
ERP Coke - Birminham, Alabama

Date	Volume Pumped (gallons)	Total Estimated Mass Removed (lbs)
April 1 - June 30, 2013	598,370	**160.09**
July 1 - September 30, 2013	553,260	**148.06**
October 1 - December 31, 2013	208,018	**6.22**
January 1 - March 31, 2014	93,112	**1.45**
April 1 - June 30, 2014	405,512	**2.11**
July 1 - December 31, 2014	628,246	**0.78**
January 1 - March 31, 2015	380,000	**260.74**
April 1 - June 30, 2015	325,085	**188.30**
July1 - September 30, 2015	325,295	**5.47**
October 1 - December 31, 2015	518,160	**0.51**
January 1 - March 31, 2016	379,351	**1.63**
April 1 - June 30, 2016	159,484	**0.14**
July1 - September 30, 2016	434,268	**0.08**
October 1 - December 31, 2016	401,257	**0.00**
January 1 - March 31, 2017	462,327	**0.08**
April 1 - June 30, 2017	511,825	**0.24**
Total	**6,383,570**	**775.9**

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1157154
Drawn By:	JDF
Reviewed By:	TWR
Date:	July 2015

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PH. (205) 942 1289 terracon.com

SITE MAP

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure 1

Figure 2. Hydraulic Control Well Hydrograph
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

Figure 3. Groundwater Monitoring Well Hydrograph
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

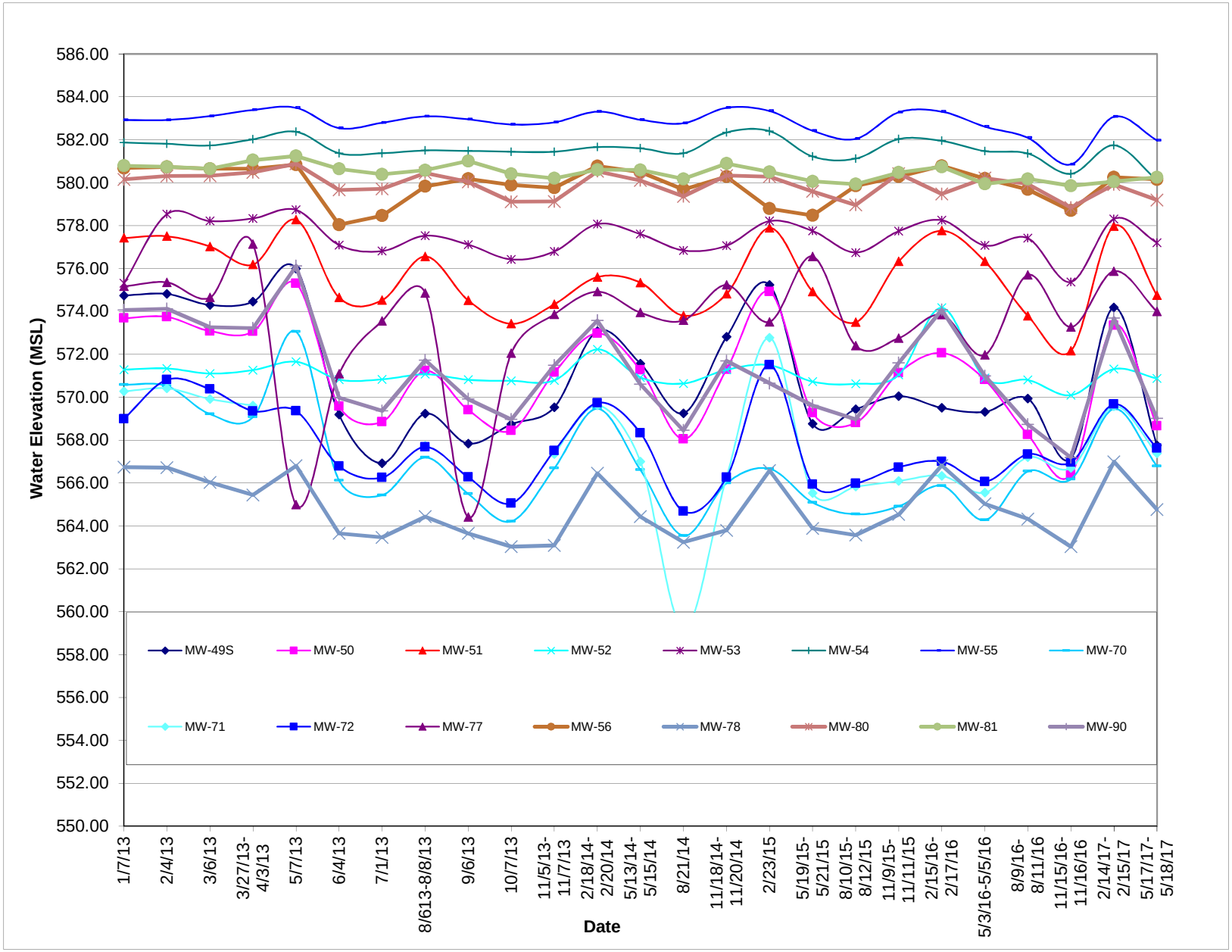


Figure 4. Groundwater Monitoring Well Hydrograph for MW-49D
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

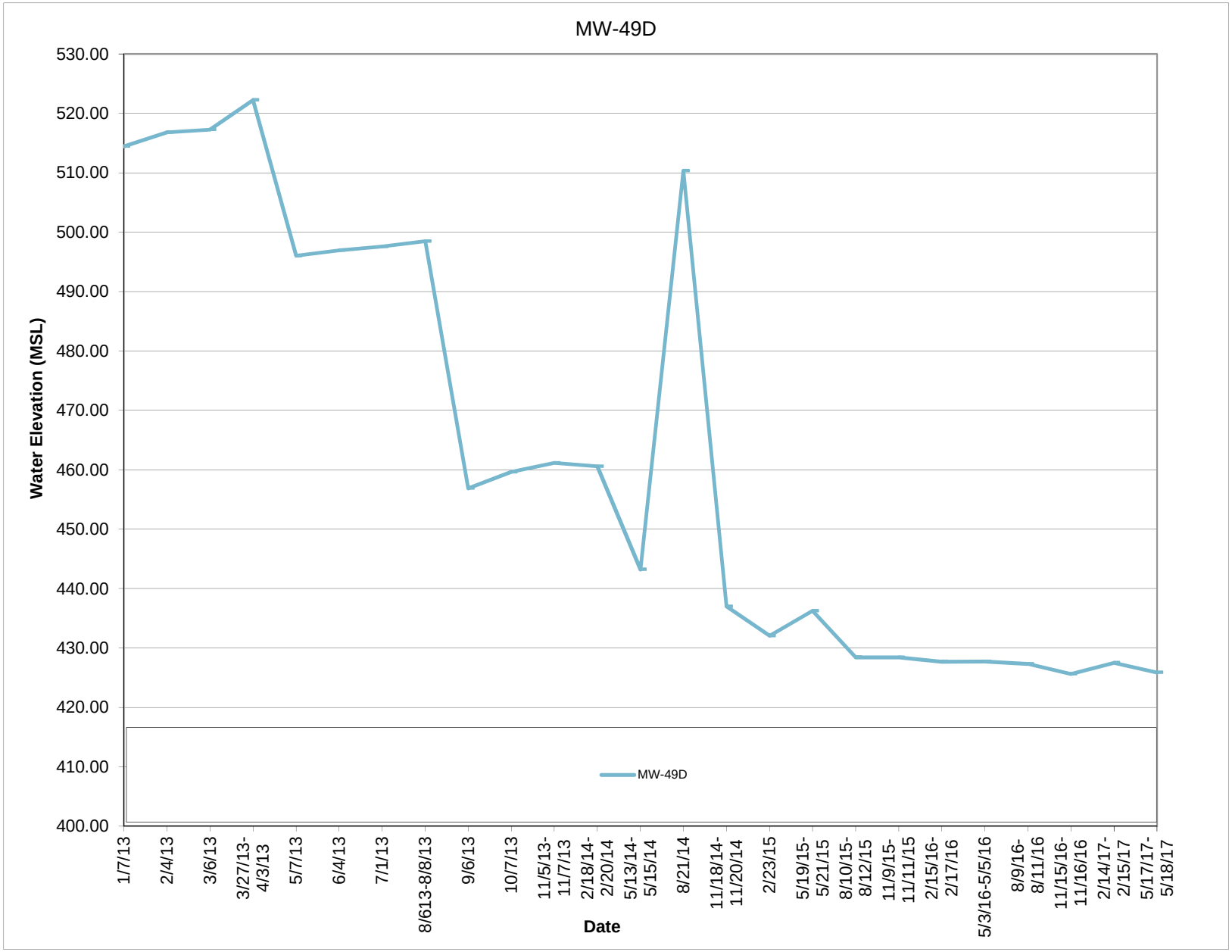
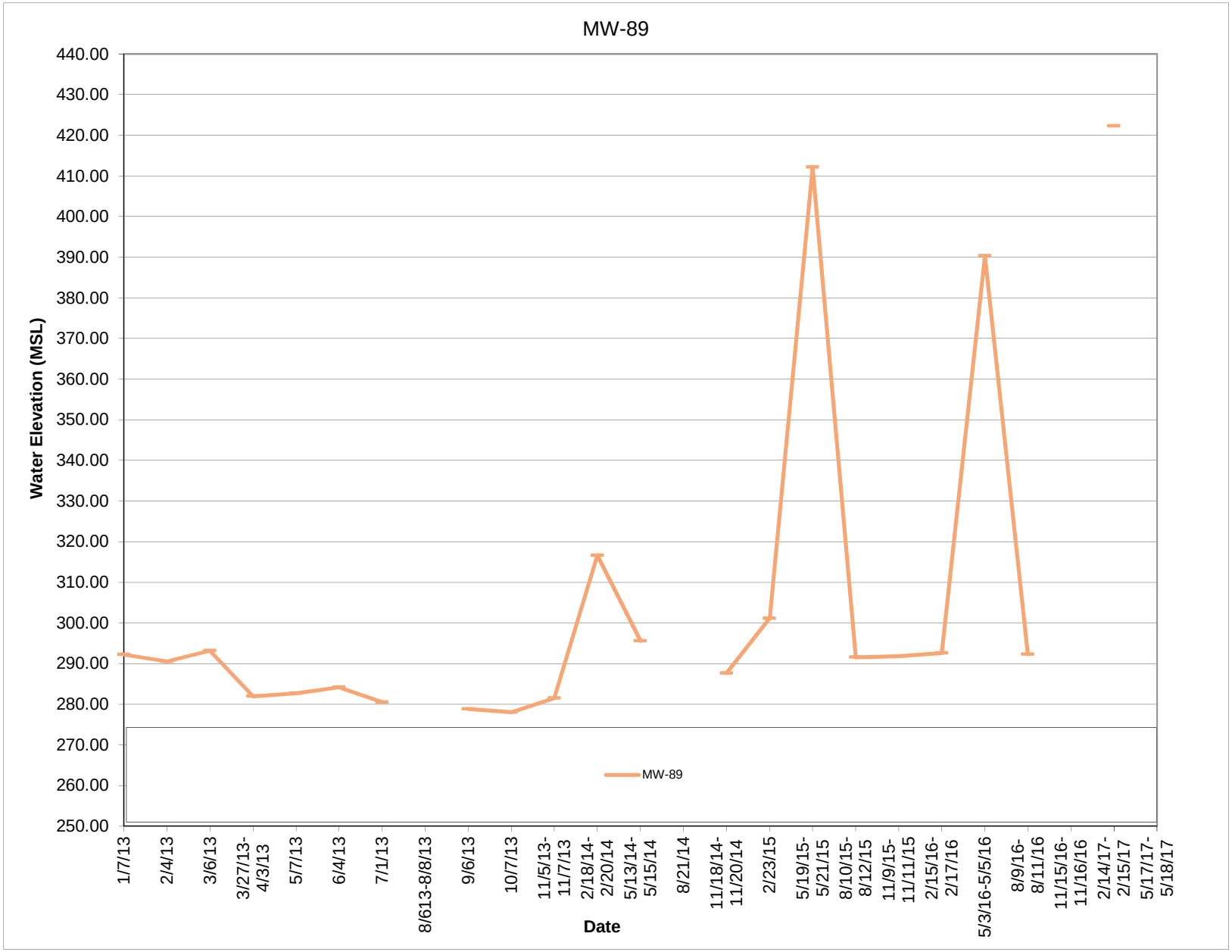
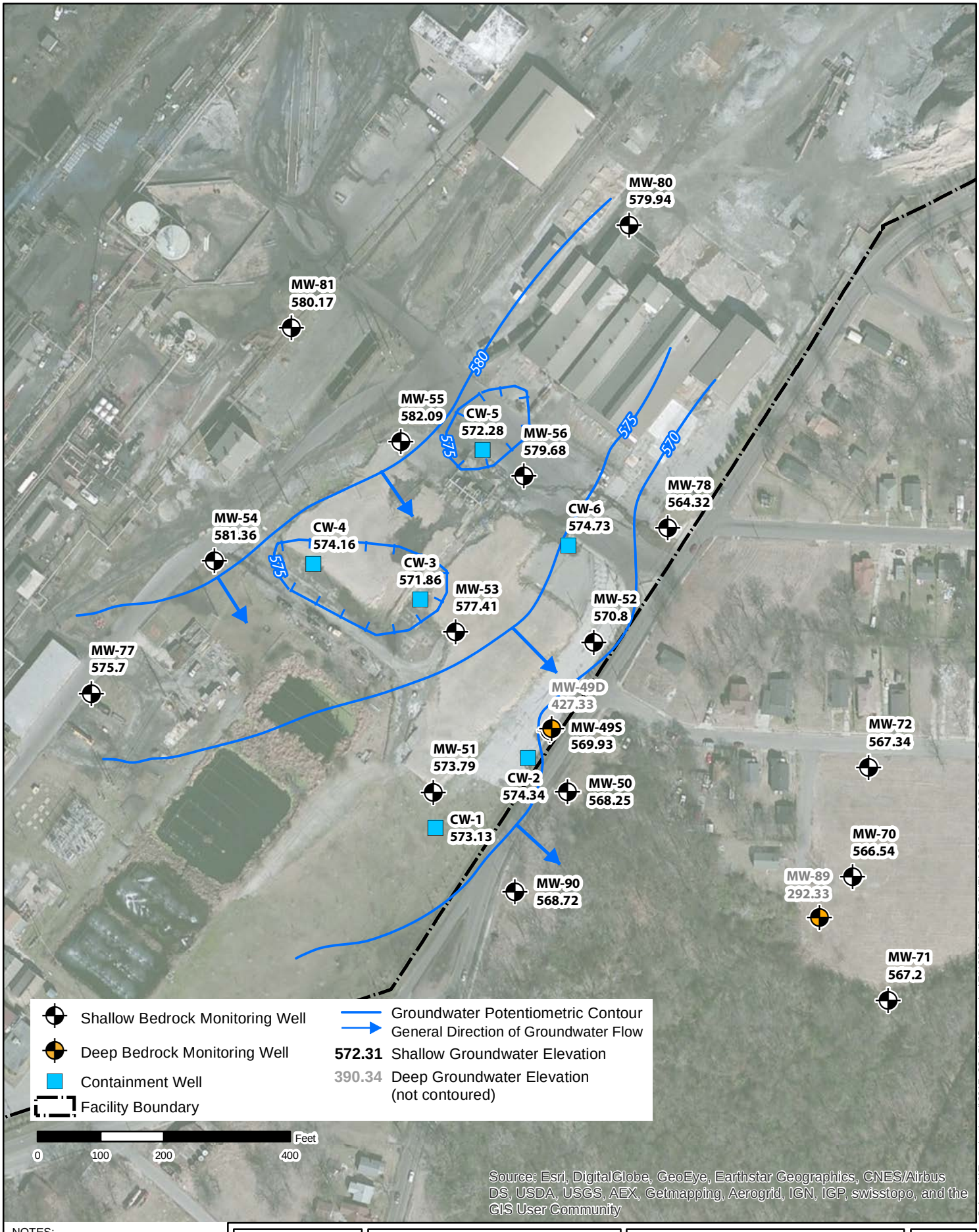


Figure 5. Groundwater Monitoring Well Hydrograph for MW-89
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama





NOTES:
- Elevations measured 8/9/16-8/11/16 by Terracon

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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AUGUST 2016
POTENTIOMETRIC SURFACE MAP

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
6

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWContouring\E1167304_Fig6_GWElev_2016_08_2017_08_16_Rev2.mxd

NOTES:
- Elevations measured 11/15/16-11/16/16 by Terracon
- MW-89 and CW-1 dry

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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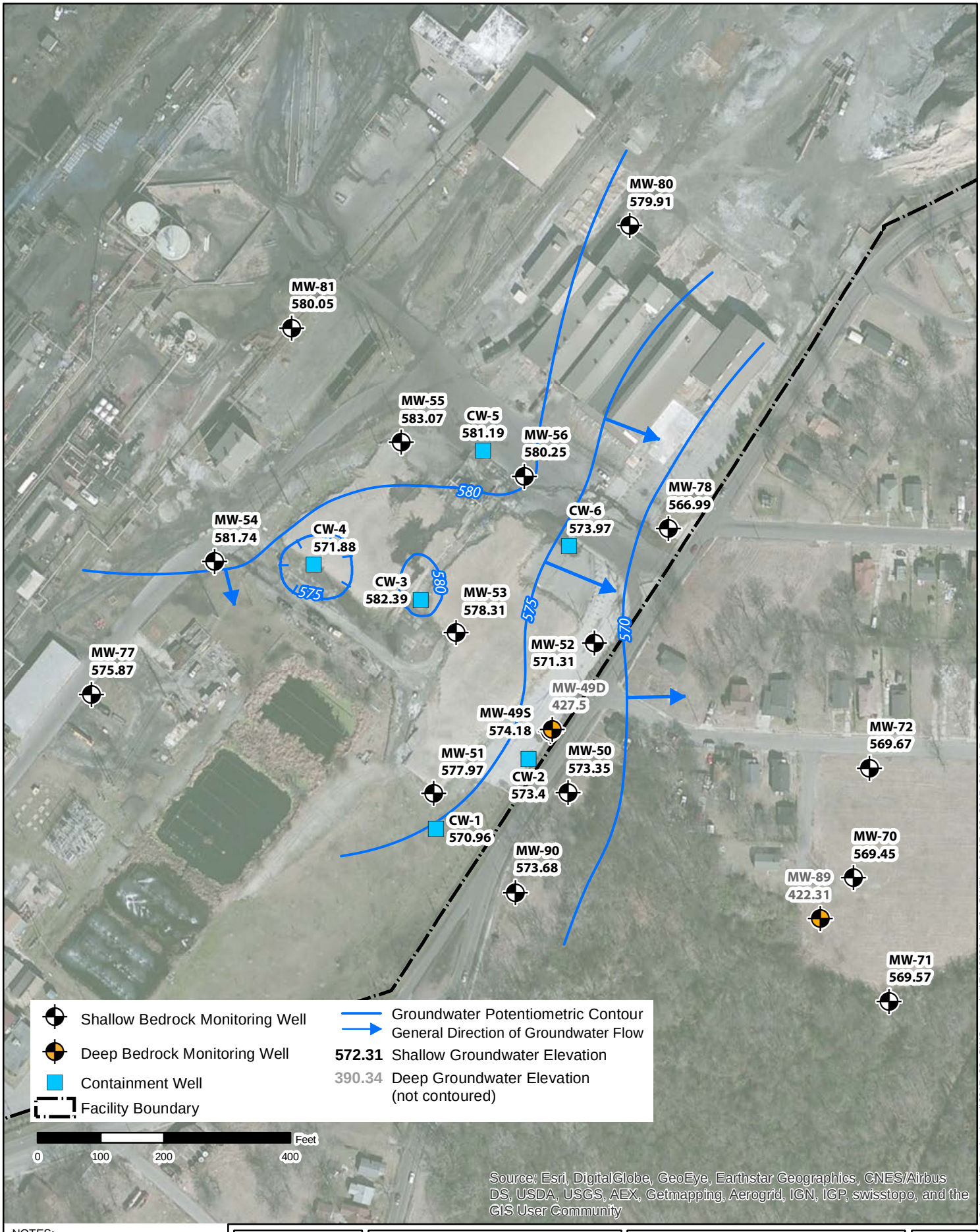
NOVEMBER 2016
POTENTIOMETRIC SURFACE MAP

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
7

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWContouring\E1167304_Fig7_GWElev_2016_11_2017_08_14_Rev2.mxd



NOTES:
- Elevations measured 2/14/17 - 2/15/17 by Terracon

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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FEBRUARY 2017
POTENTIOMETRIC SURFACE MAP

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
8

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWContouring\E1167304_Fig8_GWElev_2017_02_2017_08_14_Rev2.mxd

NOTES:
- Elevations measured 05/17/17 - 05/18/17 by Terracon
- Wells MW-89 and CW-2 Dry

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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MAY 2017
POTENTIOMETRIC SURFACE MAP

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
9

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWContouring\E1167304_Fig9_GWElev_2017_05_2017_08_16_Rev2.mxd

Figure10. pH in Groundwater
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

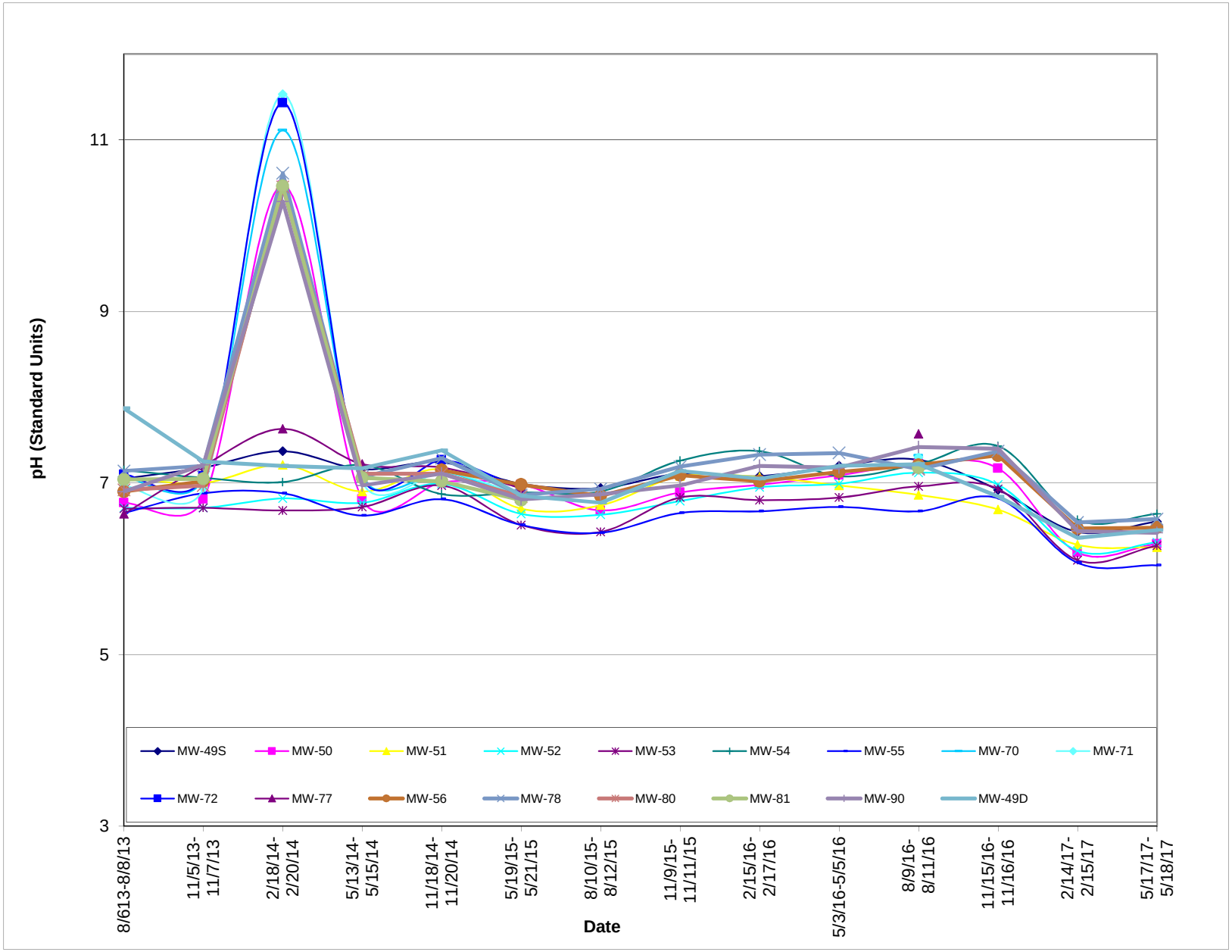


Figure 11. Specific Conductance in Groundwater
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

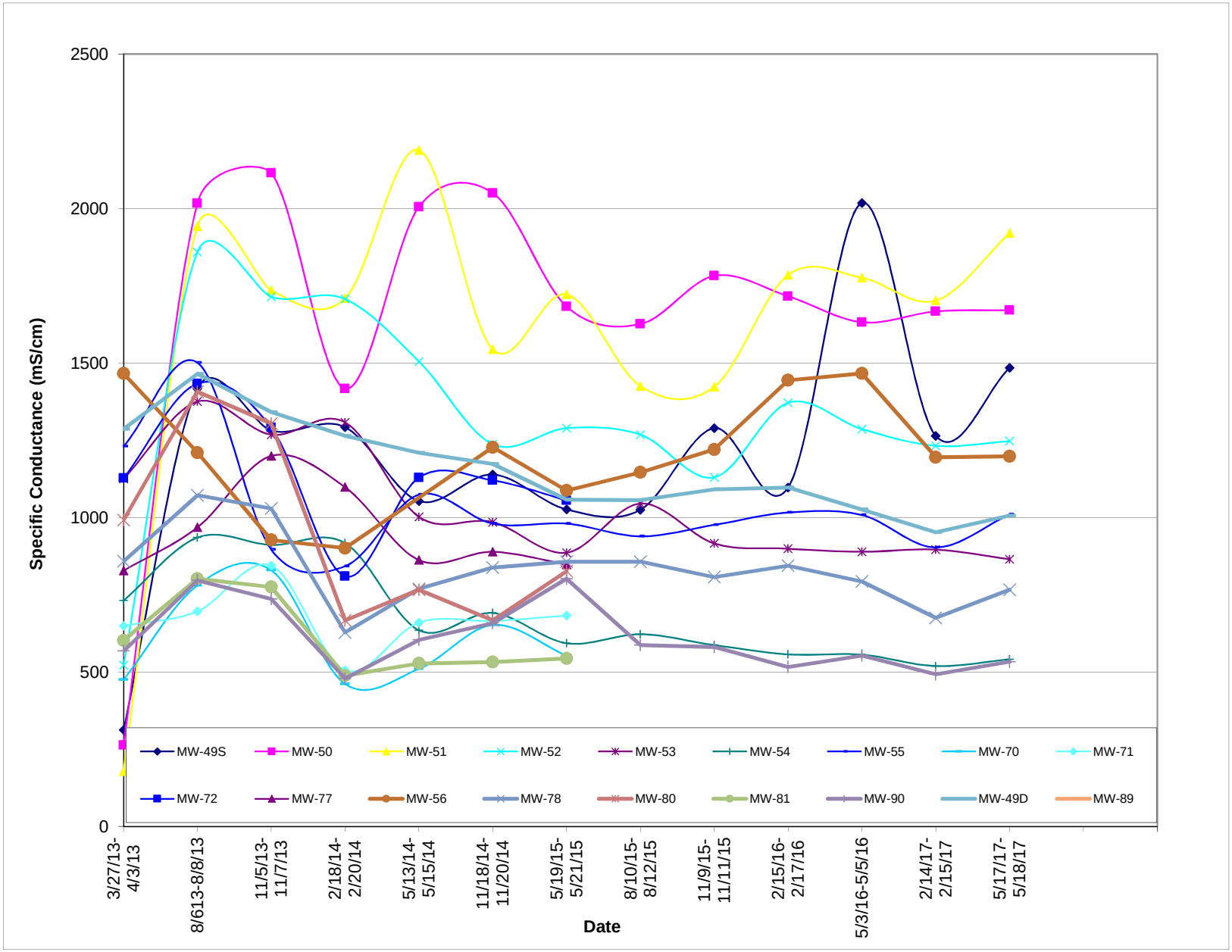


Figure 12. Temperature in Groundwater
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama

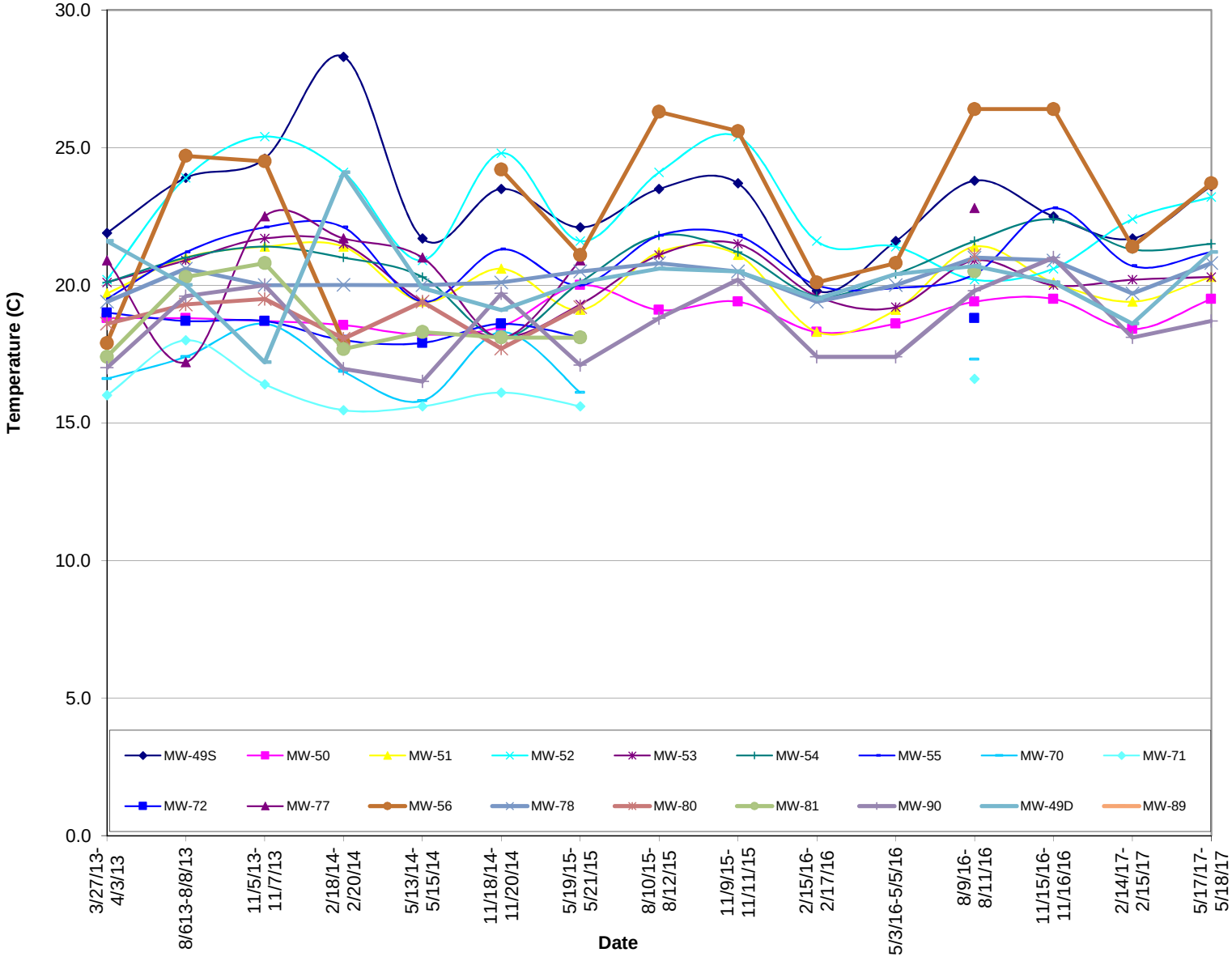
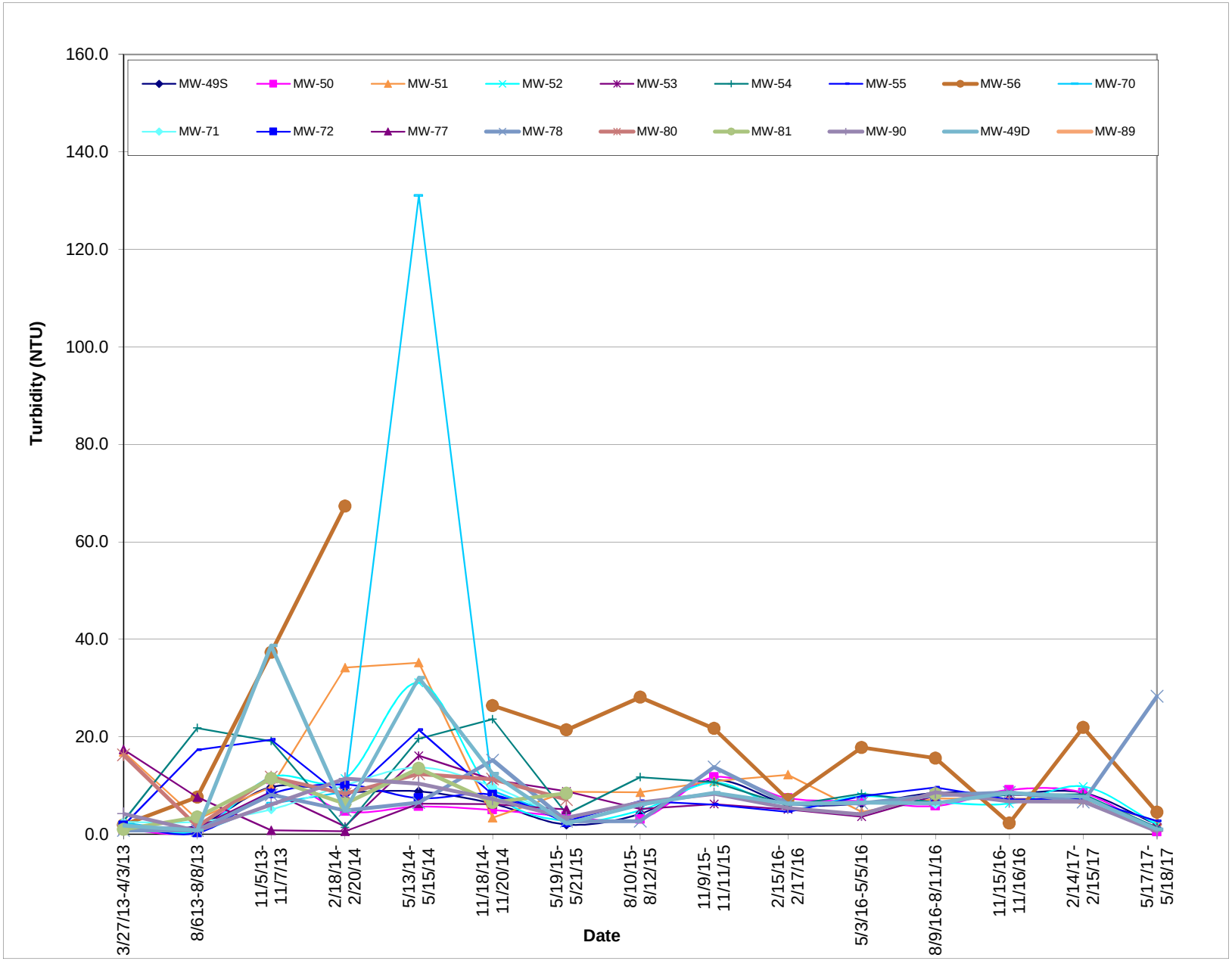
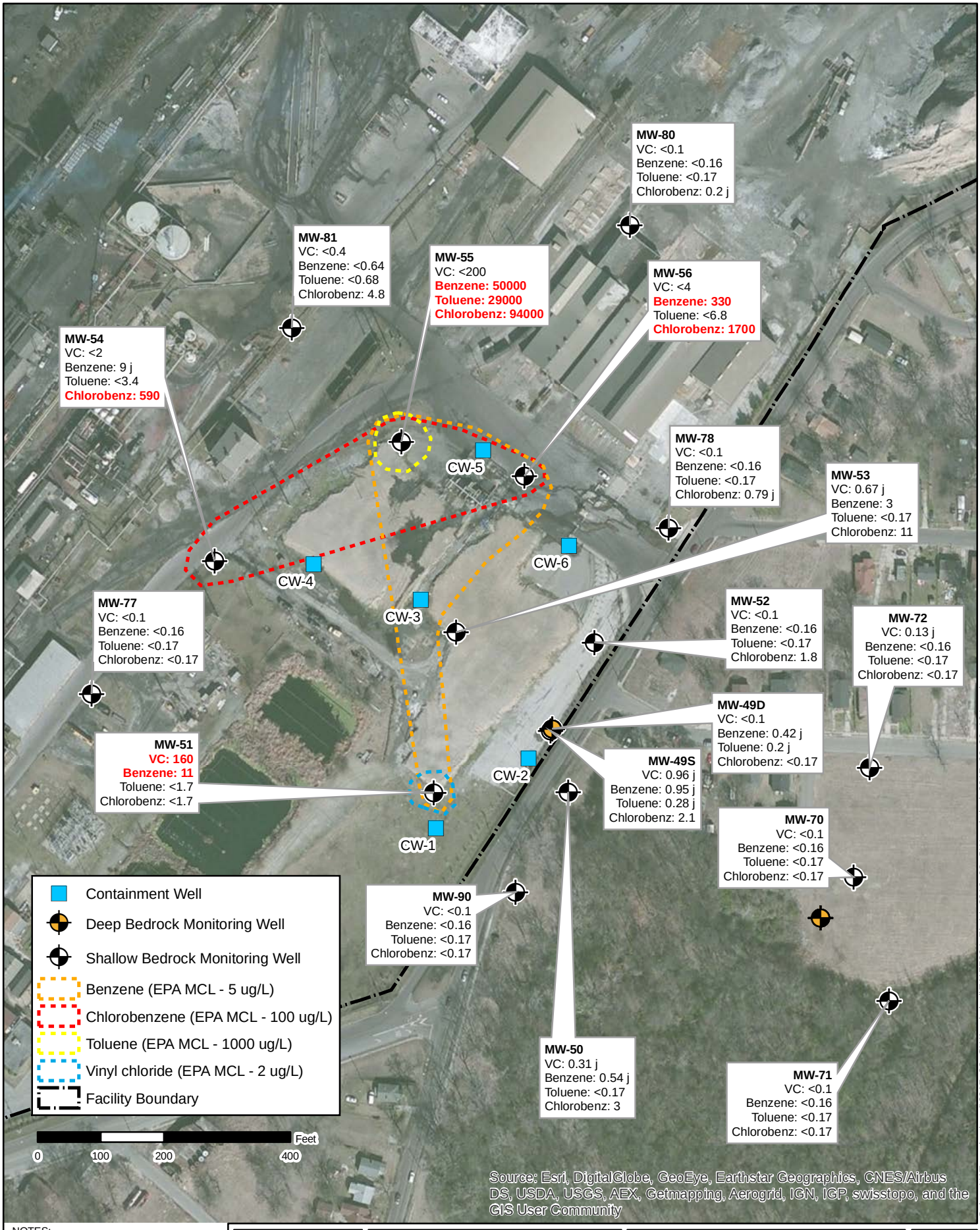


Figure 13. Turbidity in Groundwater
ERP Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama





NOTES:
- All concentrations in micro-grams per liter (ug/L)
- Bold indicates exceedance of EPA MCL

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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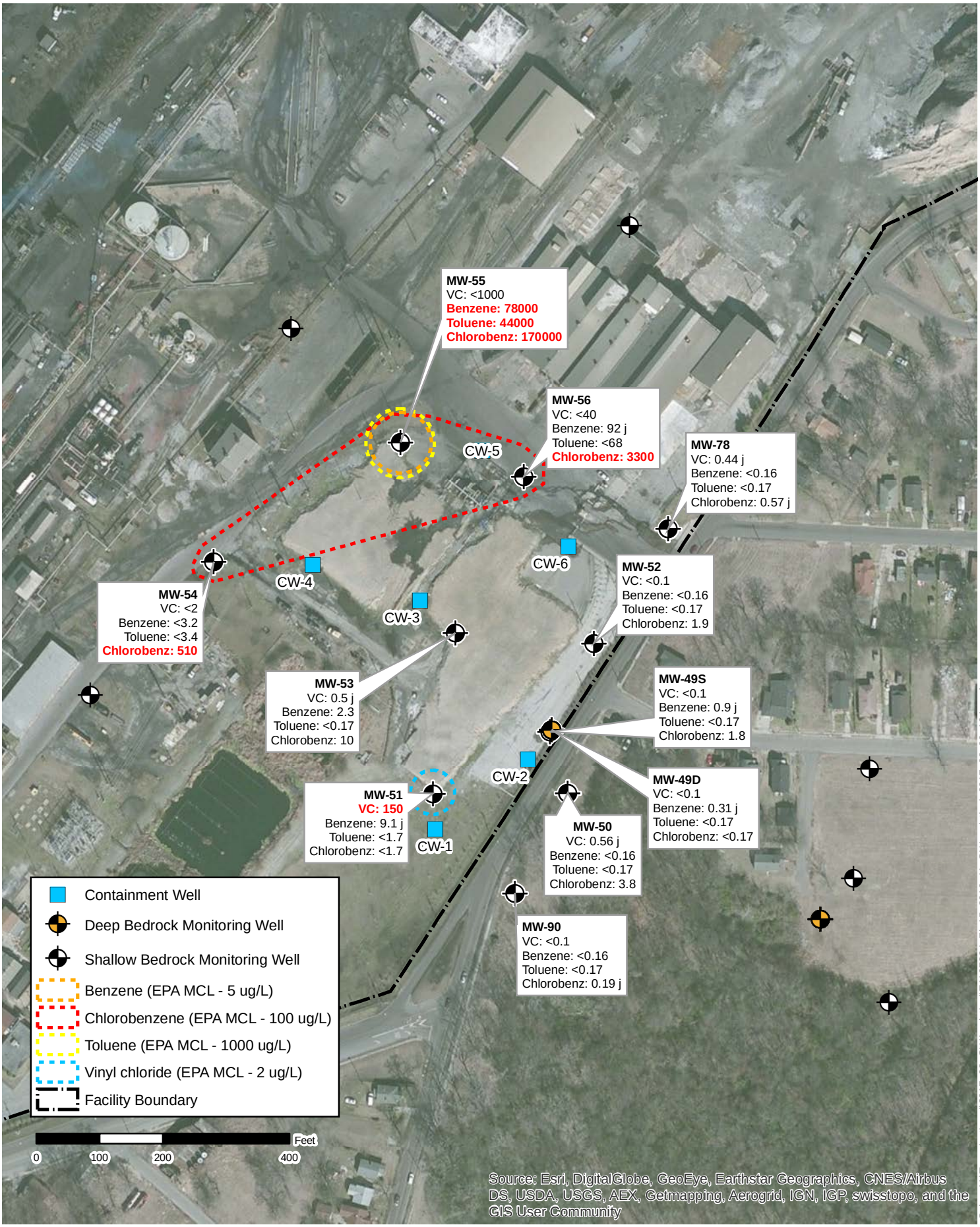
VOC CONSTITUENT CONCENTRATIONS IN GROUNDWATER, AUG 2016

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
14

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWAnalyticalE1177304_Fig14_2016_08_GWanalytical_2017_08_09_104.mxd



NOTES:
- All concentrations in micro-grams per liter (ug/L)
- Bold indicates exceedance of EPA MCL

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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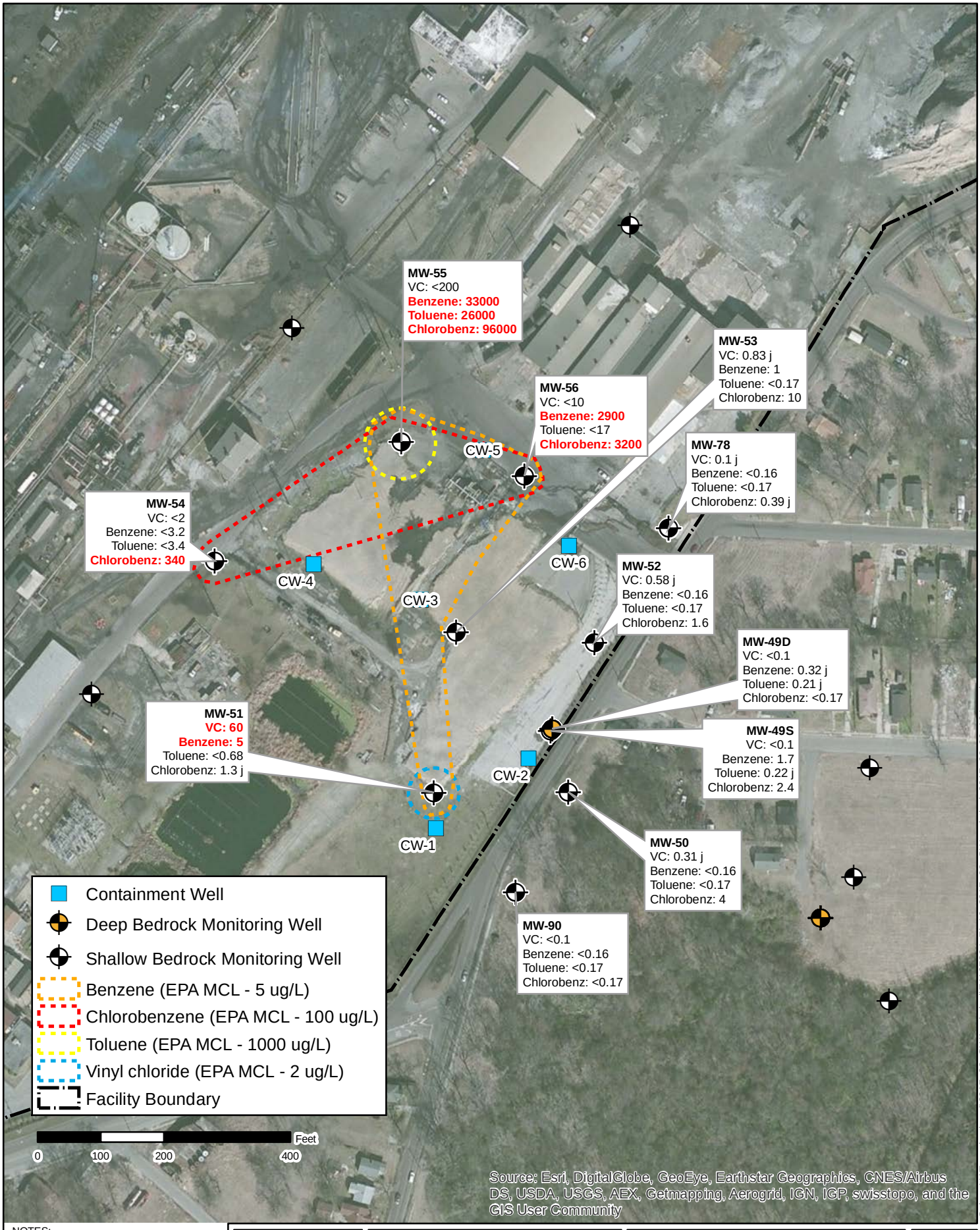
VOC CONSTITUENT CONCENTRATIONS IN GROUNDWATER, NOV 2016

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
15

P:\GIS\E1127096_Walter_Coke_ALT_project\mxd\2017_08_GWAnalyticalE1167304_Fig15_2016_11_GWanalytical_2017_08_09_104.mxd



NOTES:
- All concentrations in micro-grams per liter (ug/L)
- Bold indicates exceedance of EPA MCL

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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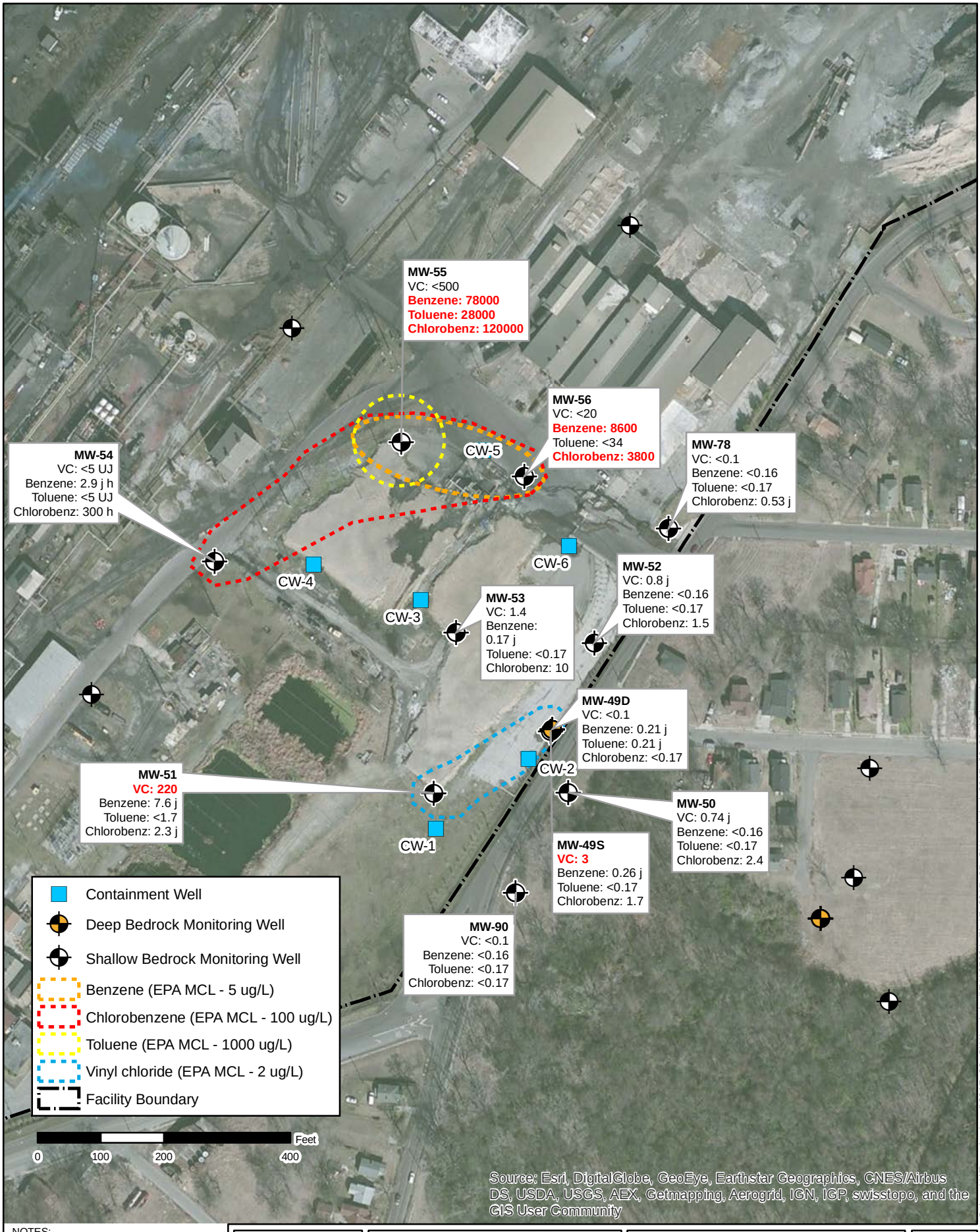
VOC CONSTITUENT CONCENTRATIONS IN GROUNDWATER, FEB 2017

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
16

P:\GIS\E1127096_Walter_Coke_ALLT_project\mxd\2017_08_GWAnalyticalE1167304_Fig16_2017_02_GWanalytical_2017_08_09_104.mxd



NOTES:
- All concentrations in micro-grams per liter (ug/L)
- Bold indicates exceedance of EPA MCL

DATA SOURCES:
- Well locations: CH2M Hill
- Basemap imagery: ESRI

N

Project No.:	E1167304
Drawn By:	IMS
Reviewed By:	TWR
Date:	August 2017

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VOC CONSTITUENT CONCENTRATIONS IN GROUNDWATER, MAY 2017

ERP COKE, INC.
3500 35th AVENUE NORTH
BIRMINGHAM, ALABAMA

Figure
17

P:\GIS\E1127096_Walter_Coke_ALT_project\mxd\2017_08_GWAnalyticalE1167304_Fig17_2017_05_GWanalytical_2017_08_09_104.mxd

Appendix A
Field Information Forms

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke / ERP
Site No.:
Sample Point: mw49s (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 09 16	1255		24	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
581.41 (ft/msl)	11.48 (ft)	569.93 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
26.50 (ft)	3.00 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1258	1st	7.16	1.194	25.6	9.3	9.17	-216.96	
1310	2nd	7.28	1.157	23.8	8.16	3.25	-219.32	
1315	3rd	7.27	1.149.8	23.8	8.15	3.17	-219.30	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08 09 16	7.27	1.149.8	23.8	8.5	3.17	-293.0	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: — Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sample @ 1320
MSD @ 1325

Date	Name	Signature	Company
8.9.16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke/ERP
Site No.:
Sample Point: MW4D (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/09/16	1340		25	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C
Sampling Device: C
X-Other:

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type:
A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A
A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
581.37 (ft/msl)	15.64 (ft)	427.33 (ft/msl)	1700 (ft)	2.84 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1343		1st	7.67	1st	1149		25.5	8.7	9.64	213.4	
1351		2nd	7.21	2nd	1130		20.8	6.5	3.74	326.1	
1355		3rd	7.22	3rd	1130		20.7	6.4	3.39	327.1	
		4th		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/09/16	7.22	1300	20.7	6.4	3.39	-327.1	

Sample Appearance: Clear
Odor: None
Color: None
Other:

Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Pumped dry - only produced enough water for (3) VOC's, (1) pAHi, & (1) SVOC's. Sampled @ 1400

Date	Name	Signature	Company
8/9/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke / ERP
Site No.:
Sample Point: MW50 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/10/16	1310		37	4	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5809.3 (ft/msl)	12.68 (ft)	568.35 (ft/msl)	35.50 (ft)	2.93 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1318	1st	7.13	1.0218	20.4	6.4	8.10	231.4	
1325	2nd	7.14	1.0162	19.4	6.2	4.57	241.5	
1330	3rd	7.12	1.0161	19.4	5.8	4.23	246.7	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/10/16	7.22	1.0161	19.4	5.8	4.23	246.7	

Sample Appearance: Clear
Odor: None
Color: Clear
Other:
Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1340

8/10/16 | Steve Akins | Steve Akins | Terracon

Date | Name | Signature | Company

FIELD INFORMATION FORM

Terracon

Site Name: Walker Coke / ERP
Site No.:
Sample Point: mw5 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 09 16	1040		26	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: ____ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5207 (ft/msl)	828 (ft)	5739 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
2450 (ft)	256 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1042	1st	7.21	1st 1165	22.7	16.4	6.89	-214.6	
1045	2nd	6.88	2nd 1175.3	21.3	17.11	3.65	-215.2	
1110	3rd	6.86	3rd 1177.8	21.4	17.13	2.73	-215.7	
	4th		4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
08 09 16	6.86	1178	21.4	17.3	2.73	-250.7	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): ____ Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 1105

8/9/16 | Steve Akins | Steve Akins | Terracon

Date | Name | Signature | Company

FIELD INFORMATION FORM

Site Name: Walter Coke / ERP
Site No.:
Sample Point: MW52 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 10 16	820		27	27	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or _____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5793.8 (ft/msl)	8.18 (ft)	570.80 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
25.00 (ft)	-0.2 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 1822		7.13	1678	19.6	5.2	5.16	-212.19	
2nd 1835		7.09	1.0918	20.11	16.2	3.27	-214.17	
3rd 1840		7.12	1.0617	20.12	16.6	3.17	-215.23	
4th								

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08 10 16	7.12	1.0617	20.12	16.6	3.17	-215.23	

Sample Appearance: Clear Odor: None Color: Clear Other:
Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 840
MSD @ 845

Date	Name	Signature	Company
8/10/16	Steve Akins		Terracon

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke / ERP
Site No.:
Sample Point: mw53 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 09 16	915		33	35	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or _____ µ (circle or fill in)

Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
X-Other:

Filter Type:
A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A
A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
[illegible] (ft/msl)	49.2 (ft)	(ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
250 (ft)	[illegible] (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1917	1st	7.43	1st 1222	21.0	1.12	9.96	-217.5	
1925	2nd	6.96	2nd 1879	20.9	1.76	2.08	-301.7	
1930	3rd	6.96	3rd 1881	20.9	1.79	2.11	-311.4	
	4th		4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08 09 16	6.96	881	20.9	1.79	2.11	-311.4	

Sample Appearance: Clear
Odor: None
Color: Clear
Other:

Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 935
Duplicate @ 940

Date	Name	Signature	Company
8/9/16	Steve Akins	Steve Akins	Terracon
/ /			

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP
Site No.:
Sample Point: mw54 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/09/16	830		53	51	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: ____ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____
X-Other: ____
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC): 5262 (ft/msl)
Depth to Water (DTW) (from TOC): 126 (ft)
Groundwater Elevation (site datum, from TOC): 5136 (ft/msl)
Total Well Depth (from TOC): 3400 (ft)
Stick Up (from ground elevation): -008 (ft)
Casing ID: 2 (in)
Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)		eH/ORP (mV)	DTW (ft)
1813		1st	7.10	1st	1601		21.4	171	9.18	-	218.9	
1850		2nd	7.18	2nd	1612		21.7	169	4.17	-	312.9	
1910		3rd	7.12	3rd	1621		21.6	165	3.17	-	312.5.5	
		4th		4th								

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
08/09/16	7.12	621	21.6	6.5	3.17	-312.5.5	

Sample Appearance: Clear Odor: None Color: Clear Other: ____
Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: (Y) or N
Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled 905

8.9.16 Steve Akins Steve Akins Terracon
Date Name Signature Company

FIELD INFORMATION FORM

Terracon

Site Name: Walker Coke/ERP
Site No.:
Sample Point: mw55
Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/10/16	900		35	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
583.49 (ft/msl)	14.0 (ft)	578.09 (ft/msl)	22.58 (ft)	-0.07 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
913		1st	7.17	1st	608		20.7	1.14	9.32	-216	
920		2nd	6.69	2nd	652		20.3	1.01	3.74	-293.6	
925		3rd	6.67	3rd	658		20.4	0.96	3.66	-294.2	
		4th		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/10/16	6.67	658	20.4	0.96	3.66	-294.4	

Sample Appearance: Clear — Odor: None — Color: Clear — Other: ____

Weather Conditions (required daily, or as conditions change): — Direction/Speed: ____ — Outlook: ____ — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 930

Date	Name	Signature	Company
8/10/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP
Site No.:
Sample Point: MW56 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/10/16	1000		30	30	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle
Filter Type: A-In-line Disposable B-Pressure C-Vacuum X-Other
X-Other:
Sample Tube Type: A (A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other:)

WELL DATA

Well Elevation (at TOC): 581.70 (ft/msl)
Depth to Water (DTW) (from TOC): 20.2 (ft)
Groundwater Elevation (site datum, from TOC): (ft/msl)
Total Well Depth (from TOC): 26.50 (ft)
Stick Up (from ground elevation): -0.31 (ft)
Casing ID: 2 (in)
Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)		eH/ORP (mV)	DTW (ft)
1023		1st	7.18	1st	1816.0		25.6	11.4	9.18	-	215.3.6	
1029		2nd	7.17	2nd	1811.1		26.1	10.6	5.14.4	-	215.5.8	
1025		3rd	7.21	3rd	1702.2		26.4	15.6	2.9.5	-	215.8.1	
		4th		4th								

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/10/16	7.21	1722	26.4	1.5.6	2.9.5	+215.8.1	

Sample Appearance: Clear Odor: None Color: Clear Other:
Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1030

Date	Name	Signature	Company
8/10/16	Steve Akins		Terracon

FIELD INFORMATION FORM

Site Name: Walter Coke / ERP
Site No.:
Sample Point: mw10 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/11/16	855		72	3	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
57580 (ft/msl)	926 (ft)	566.54 (ft/msl)	29.06 (ft)	02.2 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st	1858		7.68	1820	17.4	18.1	9.14	-116.8	
2nd	1915		7.35	1827	17.3	17.3	2.14	-212.8	
3rd	1920		7.32	1828	17.3	16.8	2.16	-232.4	
4th									

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: / Units
08/11/16	7.32	828	17.3	6.8	2.16	-232.4	

Sample Appearance: Clear — Odor: None — Color: Clear — Other: ____

Weather Conditions (required daily, or as conditions change): ____ — Direction/Speed: ____ — Outlook: ____ — Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 9:25
MSD 9:30

Date	Name	Signature	Company
8/11/16	Steve Akins	Steve Akins	Terracon
/ /			

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke/ERP

Site No.: | | | | | Sample Point: mw71 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
081116	955		56	55	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N)   0.45 µ or ____ µ (circle or fill in)

Purging Device: C   A- Submersible Pump   B-Peristaltic Pump   C-QED Bladder Pump   D-Bailer   E-Piston Pump   F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: ____   A-In-line Disposable   B-Pressure   C-Vacuum   X-Other ____

Sample Tube Type: A   A-Teflon   B-Stainless Steel   C-PVC   D-Polypropylene   X-Other: ____

WELL DATA

Well Elevation (at TOC): 573.96 (ft/msl)   Depth to Water (DTW) (from TOC): 6.76 (ft)   Groundwater Elevation (site datum, from TOC): 567.20 (ft/msl)

Total Well Depth (from TOC): 41.00 (ft)   Stick Up (from ground elevation): 0.25 (ft)   Casing ID: 2 (in)   Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
958		1st 7.78	1st 872	18.5	8.3	9.86	-224.6	
1025		2nd 7.31	2nd 867	16.6	6.4	1.60	-228.13	
1030		3rd 7.30	3rd 865	16.6	6.2	1.51	-228.8	
		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
081116	7.30	865	16.6	6.2	1.51	-228.8	

Sample Appearance: Clear   Odor: None   Color: Clear   Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1035

Date	Name	Signature	Company
8/11/16	Steve Akins	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP
Site No.:
Sample Point: MW12 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/11/16	806		72	7	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Sampling Device: C
X-Other:
Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____
Sample Tube Type: C — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): 5759 (ft/msl)
Depth to Water (DTW) (from TOC): 865 (ft)
Groundwater Elevation (site datum, from TOC): 56734 (ft/msl)
Total Well Depth (from TOC): 5300 (ft)
Stick Up (from ground elevation): 030 (ft)
Casing ID: 2 (in)
Casing Material: PVC

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st	1803		7.63	1346	19.7	82	9.64	236	
2nd	1810		7.21	1333	18.8	76	3.45	218.2	
3rd	1814		7.18	1331	18.8	73	3.09	216.4	
4th									

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
08/11/16	7.18	1331	18.8	73	3.09	-216.4	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:
Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: — Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 845

8/11/16 — Steve Akins — Steve Akins — Terracon
Date — Name — Signature — Company

FIELD INFORMATION FORM

Terracon

Site Name: Walter Coke / ERP
Site No.:
Sample Point: mw77 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
080916	750		54	55	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____
X-Other: ____
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5138 (ft/msl)	568 (ft)	5750 (ft/msl)	3900 (ft)	282 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 1513	1st	1st 8.18	1st 1862	1st 28.6	1st 1711	1st 6.14	1st -216.10	
2nd 1810	2nd	2nd 7.16	2nd 1811	2nd 21.8	2nd 173	2nd 1.72	2nd -311.60	
3rd 1815	3rd	3rd 7.17	3rd 1810	3rd 21.8	3rd 172	3rd 1.62	3rd -311.74	
4th		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
080916	7.17	1870	21.8	1.72	1.62	-311.74	

Sample Appearance: Clear Odor: None Color: Clear Other: ____
Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: (Y) or N
Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sample ID 820

Date	Name	Signature	Company
8/9/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP
Site No.: ____ Sample Point: GW78 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/10/16	1640		5.11	5	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle
Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other ____
X-Other: ____
Sample Tube Type: A A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC): 578.76 (ft/msl)
Depth to Water (DTW) (from TOC): 14.44 (ft)
Groundwater Elevation (site datum, from TOC): 564.32 (ft/msl)
Total Well Depth (from TOC): 46.00 (ft)
Stick Up (from ground elevation): -0.25 (ft)
Casing ID: 2 (in)
Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1043	1st	7.17	1128	21.16	7.76	6.89	-219.46	
1110	2nd	7.21	1118	21.11	8.11	3.84	-215.67	
1110	3rd	7.16	1091.3	21.10	8.10	2.87	-215.83	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/10/16							

Sample Appearance: Clear Odor: None Color: Clear Other: ____
Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sample de 1115

Date	Name	Signature	Company
8/10/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: Walker Coke/ERP
Site No.:
Sample Point: mw80
Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 10 16	1345		67	6	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5818.83 (ft/msl)	18.9 (ft)	5799.4 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
43.00 (ft)	-0.25 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1317		1st	7.16	1st	1121		21.1	8.1	9.63	- 212.3	
1421		2nd	7.18	2nd	1131		21.1	7.2	1.96	- 219.7	
1430		3rd	7.17	3rd	1131		21.1	7.1	2.11	- 219.9	
		4th		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08 10 16	7.17	1312	21.1	7.1	2.11	- 219.9	

Sample Appearance: Clear
Odor: None
Color: Clear
Other:
Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1435
Dup @ 1440

Date	Name	Signature	Company
8/10/16	[signature]	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP
Site No.:
Sample Point: MW8 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08 10 16	7 45		35	35	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC): 5825.5 (ft/msl)
Depth to Water (DTW) (from TOC): 23.8 (ft)
Groundwater Elevation (site datum, from TOC): ____ (ft/msl)
Total Well Depth (from TOC): 24.0 (ft)
Stick Up (from ground elevation): -0.25 (ft)
Casing ID: 2 (in)
Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
7:47		1st	2.56	1st	1988	20.6	11.13	9.63	-234.6	
8:00		2nd	7.62	2nd	1.16	20.6	8.17	3.84	-219.6	
8:05		3rd	2.18	3rd	1.59.8	20.5	8.13	3.66	-219.4	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08 10 16	7.18	1598	20.5	8.3	3.66	-293.4	

Sample Appearance: Clear
Odor: None
Color: Clear
Other:
Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 8:10

Date	Name	Signature	Company
8/10/16	Steve Akins	Steve Akins	Terracon
/ /			

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP

Site No.: | Sample Point: MW89 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
8/11/16					

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N] Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device [ ] Sampling Device [ ] X-Other: [ ]

A- Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: [ ] A-In-line Disposable B-Pressure C-Vacuum X-Other [ ]

Sample Tube Type: [ ] A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: [ ]

WELL DATA

Well Elevation (at TOC)	573.96 (ft/msl)	Depth to Water (DTW) (from TOC)	28.63 (ft)	Groundwater Elevation (site datum, from TOC)	(ft/msl)
Total Well Depth (from TOC)	30.00 (ft)	Stick Up (from ground elevation)	-0.25 (ft)	Casing ID	2 (in)
Casing Material	PVC				

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units

Sample Appearance: [ ] Odor: [ ] Color: [ ] Other: [ ]

Weather Conditions (required daily, or as conditions change): Direction/Speed: [ ] Outlook: [ ] Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): [ ]

FIELD COMMENTS

Not Sampled

8/11/16 Steve Akins Terracon

Date Name Signature Company

FIELD INFORMATION FORM

Site Name: Walter Coke/ERP

Site No.: | Sample Point: MW90 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
08/10/16	1230		19	2	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5817.31 (ft/msl)	12.59 (ft)	5687.2 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
24.50 (ft)	2.83 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1232	1st	7.16	1.423	20.0	1.11	9.87	-212.3	
1245	2nd	7.14	1.402	19.8	1.18	4.48	-213.7	
1250	3rd	7.12	1.396	19.8	1.16	4.56	-214.7	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
08/10/16	7.42	1.396	19.8	1.16	4.56	-214.7	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 1255

Date	Name	Signature	Company
8/10/16	Steve Akins	Steve Akins	Terracon

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: Walker Coke/ERP Project #: E1167304

Location: Birmingham, AL

Date: 8-8-16 Weather: Cloudy/Rainy Temp. (F): 88°

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6	
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	6.34	3.80	11.11	8.76	11.08	6.43	
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

FIELD INFORMATION FORM

Terracon

Site Name: ERP/ Walter Coke

Site No.:

Sample Point: mw49S (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/16	1340		2.0	2.0	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 581.41 (ft/msl)

Depth to Water (DTW) (from TOC): 14.26 (ft)

Groundwater Elevation (site datum, from TOC): 567.15 (ft/msl)

Total Well Depth (from TOC): 26.50 (ft)

Stick Up (from ground elevation): 2.93 / 0.00 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
13:42		1st	7.22	1st	1181.1	24.8	11.1	6.36	-273.4	
13:50		2nd	6.89	2nd	1171.3	22.6	9.7	3.24	-287.1	
13:55		3rd	6.92	3rd	1170.4	22.5	8.3	2.86	-293.4	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
11/15/16	6.92	1704	22.5	8.3	2.86	-293.4	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1400

Date	Name	Signature	Company
11/15/16	Steve Akins	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: ERP/Walter Coke

Site No.: [ ] Sample Point: MW49D (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/16	1405		23	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N Filter Device: Y or (N) 0.45 µ or [ ] µ (circle or fill in)

Purging Device: C Sampling Device: C X-Other:

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: [ ] A-In-line Disposable, B-Pressure, C-Vacuum, X-Other [ ]

Sample Tube Type: A A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: [ ]

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5813.7 (ft/msl)	15.75 (ft)	42.62 (ft/msl)	1700 (ft)	2.84 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)		Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1407		1st	7.71	1st	1888		21.3	9.2	4.18	-216.5	
1412		2nd	6.81	2nd	1116.2		20.2	8.7	3.16	-218.3	
1415		3rd	6.81	3rd	1114.3		20.1	8.5	2.77	-218.5	
		4th		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
11/15/16	6.84	1143	20.1	8.5	2.77	-218.5	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1430

Date	Name	Signature	Company
11/15/16	Steve Akins	Steve Akins	Terracon

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP/Walter Coke Project #: E1167304

Location: Birmingham, Ala.

Date: 11-16-16 Weather: Sunny Temp. (F): 74°

Development ☐ Purging ☑ Sampling ☑ Free Product Recovery ☐

1155

Well I.D.	MW-50						
1. Elevation of Top of Casing	580.93	-14.54=	566.39				
2. Casing Diameter	2"						
3. Depth to Product							
4. Total Depth of Well	35.50						
5. Depth to Water	14.54						
6. Volume of Well Water (#4-#5)(factor)	3.41						
7. Volume to Purge (3 to 5 well volumes)	3.5 (1)						
8. ~~Volume Purged~~ Time	1157	1225	1230				
9. ~~Pumped/Bailed Dry~~ Turbidity	9.3	8.8	9.1				
10. ~~Odor Concentration~~ ORP	-236.5	-264.2	-264.5				
11. Dissolved Oxygen	99.9	37.7	39.5				
12. Temperature (F)	21.6	19.5	19.5				
13. pH	7.41	7.18	7.17				
14. Conductivity	2088	2176	2177				

Field Notes:

Sampled@ ~~1235~~ 1240

Duplicate@ ~~1240~~ 1235

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: Steve Morris

FIELD INFORMATION FORM

Site Name: ERP/Water Coke

Site No.: ____ Sample Point: mw5 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/16	13:16		24	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5820.7 (ft/msl)	9.91 (ft)	572.16 (ft/msl)	24.50 (ft)	2.56 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1312	1st	7.12	1158	20.2	9.2	7.14	-216.7	
1325	2nd	6.18	1160.2	20.10	8.7	3.14	-217.11	
1330	3rd	6.19	1160.4	20.11	7.3	2.16	-217.16	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
11/15/16	6.19	1160.4	20.1	7.3	2.16	-217.16	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 1335

Date	Name	Signature	Company
11/15/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP / Walter Coke
Site No.:
Sample Point: mw62
Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/16	1505 1510		26	275	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
573.8 (ft/msl)	9.29 (ft)	570.09 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
25.00 (ft)	-2.1 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1507	1st	7.16	1688	21.3	17.4	6.53	-236.1	
1512.0	2nd	7.01	1642	20.7	19.2	2.87	-241.7	
1515	3rd	6.98	1641	20.6	16.3	2.44	-251.3	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
11/15/16	6.98	1641	20.6	16.3	2.44	-251.3	

Sample Appearance: Clear — Odor: None — Color: clear — Other: ____

Weather Conditions (required daily, or as conditions change): — Direction/Speed: ____ — Outlook: ____ — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sample @ 1530

Duplicate @ 1535

11/15/16 — Steve Akins — Steve Akins — Terracon

Date — Name — Signature — Company

FIELD INFORMATION FORM

Site Name: ERP / Walter Coke

Site No.: | Sample Point: MW53 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/15/16	1230		29	30	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5823.3 (ft/msl)	6.96 (ft)	5753.1 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
25.00 (ft)	-1.2 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1232		1st	7.38	1st	1211	20.7	13.4	9.99	242.3	
1245		2nd	6.98	2nd	1801.7	20.1	18.3	2.41	310.6	
1250		3rd	6.93	3rd	1801.2	20.0	18.1	2.38	310.6	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
11/15/16	6.93	802	20.0	8.1	2.38	-310.6	

Sample Appearance: Clear — Odor: None — Color: Clear — Other: ____

Weather Conditions (required daily, or as conditions change): — Direction/Speed: ____ — Outlook: ____ — Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 1255

MSD @ MW

11/15/16 — Steve Akins — Steve Akins — Terracon

Date — Name — Signature — Company

FIELD INFORMATION FORM

Terracon

Site Name: ERP/Walker Coke

Site No.: | Sample Point: MW54 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/16/16	710		52	5	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: ____ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

X-Other: ____

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5862 (ft/msl)	221 (ft)	5641 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
3400 (ft)	-2.8 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 1702	1st	1st 8.19	1st 1612	21.8	11.6	7.53	-215.6	
2nd 1715	2nd	2nd 7.87	2nd 1739	22.3	9.13	3.59	-215.8	
3rd 1730	3rd	3rd 7.43	3rd 1720	22.4	8.11	2.03	-216.4	
4th	4th	4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
11/16/16	7.43	1720	22.4	8.11	2.03	-216.4	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled 7:35

MSD @ 7:40

Date	Name	Signature	Company
11/16/16	Steve Akins	Steve Akins	Terracon
/ /			

FIELD INFORMATION FORM

Terracon

Site Name: ERP Walter Coke
Site No.:
Sample Point: mw55 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/16/16	1755		3.29	3.5	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC): 5834.9 (ft/msl)
Depth to Water (DTW) (from TOC): 26.4 (ft)
Groundwater Elevation (site datum, from TOC): 5808.5 (ft/msl)
Total Well Depth (from TOC): 22.58 (ft)
Stick Up (from ground elevation): -0.7 (ft)
Casing ID: (in)
Casing Material:

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1758		1st	7.51	1st	1.148	23.0	1.16	9.86	- 217.5	
1810		2nd	6.82	2nd	1.141	22.9	18.3	3.85	- 215.6	
1815		3rd	6.82	3rd	1.141	22.8	17.1	3.63	- 215.19	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
11/16/16	6.82	1.144	22.8	7.1	3.63	-215.19	

Sample Appearance: Clear
Odor: None
Color: Clear
Other:
Weather Conditions (required daily, or as conditions change):
Direction/Speed:
Outlook:
Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 830

Date	Name	Signature	Company
11/16/16	Steve Akins	Steve Akins	Terracon

FIELD INFORMATION FORM

Site Name: ERP/Walter Coke
Site No.:
Sample Point: mw56 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/16/16	8:45		29	30	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)
Purging Device: C
Sampling Device: C
A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____
X-Other:
Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
581.70 (ft/msl)	30.00 (ft)	578.70 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
20.50 (ft)	-3.1 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
8:47		1st	7.22	1.146	21.56	13.76	9.19	214.3	
8:50		2nd	7.13	1.116	21.63	12.64	3.14	216.3	
8:55		3rd	7.12	1.116	21.64	12.28	3.15	216.7	
		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
11/16/16	7.12	1.116	26.4	22.8	3.53	216.7	

Sample Appearance: Clear Odor: None Color: Clear Other:
Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 20

11/16/16 Steve Akins Steve Akins Terracon
Date Name Signature Company

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP / Walter Coke Project #: E1167304

Location: Birmingham, Alabama

Date: 11-15-16 Weather: Sunny Temp. (F): 74°

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	MW-70	MW-71	MW-72	MW-77	MW-80	MW-81	MW-89
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	9.63	7.26	9.03	8.11	2.99	2.70	DRY
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature:

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP Walter Coke Project #: E1467304

Location: Birmingham, Ala.

Date: 11-16-16 Weather: Sunny Temp. (F): 72°

Development ☐ Purging ☑ 9:45 Sampling ☑ Free Product Recovery ☐

Well I.D.	mw-78						
1. Elevation of Top of Casing	578.76	- 15.73	= 563.03				
2. Casing Diameter	2"						
3. Depth to Product							
4. Total Depth of Well	46.00						
5. Depth to Water	15.73						
6. Volume of Well Water (#4-#5)(factor)	4.93						
7. Volume to Purge (3 to 5 well volumes)	5 (1)						
8. ~~Volume Purged~~ Time	9:47	10:20	10:25				
9. ~~Pumped/Bailed Dry~~ Turbidity	11.7	8.8	8.6				
10. ~~Odor Concentration~~ ORP	-266.9	-290.0	-290.6				
11. Dissolved Oxygen	99.9	39.0	34.9				
12. Temperature (F)	22.72	20.9	20.9				
13. pH	786	7.36	7.37				
14. Conductivity	889	859	856				

Field Notes:

Sampled @ 1030

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: Steve Klein

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP / Walter Coke Project #: E1167304

Location: Birmingham, Ala

Date: 11-16-16 Weather: Sunny Temp. (F): 73°

Development ☐ Purging ☑ Sampling ☑ Free Product Recovery ☐

10:55

Well I.D.	MW-90						
1. Elevation of Top of Casing	581.31	- 14.12	= 567.19				
2. Casing Diameter	2"						
3. Depth to Product							
4. Total Depth of Well	24.5						
5. Depth to Water	14.12						
6. Volume of Well Water (#4-#5)(factor)	1.7						
7. Volume to Purge (3 to 5 well volumes)	2 (1)						
8. ~~Volume Purged~~ Time	1057	1115	1120				
9. ~~Pumped/Bailed Dry~~ ORP	-195.4	-252.3	-253.7				
10. ~~Odor Concentration~~ Turbidity	7.4	6.3	6.7				
11. Dissolved Oxygen	81.8	44.9	44.6				
12. Temperature (F)	21.7	21.0	21.0				
13. pH	7.65	7.41	7.40				
14. Conductivity	841	917	915				

Field Notes:

Sampled @ 1125

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: Steve Akin

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP/Walter Coke Project #: EH67304

Location: Birmingham, Ala

Date: 11-15-16 Weather: Sunny Temp. (F): 74°

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6	
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	Dry	12.12	13.08	9.26	12.04	7.07	
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

FIELD INFORMATION FORM

Terracon

Site Name: ERP/Walter Coke

Site No.:

Sample Point: MW49S

Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	0618		31	34	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C

Sampling Device: C

X-Other:

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	581.41 (ft/msl)	Depth to Water (DTW) (from TOC)	7.23 (ft)	Groundwater Elevation (site datum, from TOC)	574.18 (ft/msl)
Total Well Depth (from TOC)	26.50 (ft)	Stick Up (from ground elevation)	2.93 (ft)	Casing ID	2 (in)
Casing Material	PVC				

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
7:19		1st 6.45	1st 1206	10.8	10.6	1.73	54.6	
7:26		2nd 6.46	2nd 1257	11.1	9.7	2.8	-101.8	
7:31		3rd 6.43	3rd 1264	11.1	8.5	1.2	-29.7	
		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021417	6.43	1264	11.1	8.5	1.2	-29.7	

Sample Appearance: Clear

Odor: None

Color: Clear

Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 735

Date	Name	Signature	Company
02/14/17	John Renert	[signature]	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP/Walter Coke

Site No.:

Sample Point: MW49D

Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	~~0800~~ 758		26	28	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Type:

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 581.37 (ft/msl)

Depth to Water (DTW) (from TOC): 153.87 (ft)

Groundwater Elevation (site datum, from TOC): 427.50 (ft/msl)

Total Well Depth (from TOC): 170.00 (ft)

Stick Up (from ground elevation): 2.84 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st	8:02		6.27	520	65.7	9.7	3.7	-56.6	
2nd	8:17		6.33	959	65.5	8.8	2.1	-233.8	
3rd	8:22		6.36	952	65.5	7.7	2.0	-235.2	
4th									

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021417	6.36	951	65.5	7.6	2.0	234.2	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 827

Date	Name	Signature	Company
02/14/17	John Reinert	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: ERP / Walter Cline

Site No.:

Sample Point: MW90 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021517	850		27	28	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Filter Type:

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5813.1 (ft/msl)	7.63 (ft)	573.68 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
24.50 (ft)	(ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 8:52		1st 6.54	1st 4.95	6.42	7.6	4.5	-379	
2nd 9:00		2nd 6.48	2nd 4.97	6.45	7.4	3.9	-449	
3rd 9:05		3rd 6.44	3rd 4.92	6.46	6.7	3.3	-490	
4th		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
021517	6.44	4.92	6.46	6.7	3.3	-490	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 910

2/15/17 John Reinert R D. Reinert Terracon

Date Name Signature Company

FIELD INFORMATION FORM

Terracon

Site Name: ERP/ Walter Coke

Site No.: | Sample Point: MW78 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021517	710		56	58	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
57876 (ft/msl)	1177 (ft)	56699 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
4600 (ft)	(ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 7:12		6.58	746	6.60	72	27	-360	
2nd 7:25		6.56	672	6.71	65	18	-793	
3rd 7:30		6.54	675	6.74	66	15	-831	
4th								

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021517	6.54	675	6.74	66	15	-831	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 735

MSD 740

Date	Name	Signature	Company
2/15/17	John Remert	J. Remert	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP Walter Coke

Site No.:

Sample Point: MW50 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021517	757		46	48	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) | 0.45 µ | or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 580.93 (ft/msl)

Depth to Water (DTW) (from TOC): 7.58 (ft)

Groundwater Elevation (site datum, from TOC): 573.35 (ft/msl)

Total Well Depth (from TOC): 35.50 (ft)

Stick Up (from ground elevation): (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st	8:00		6.18	1661	64.7	8.8	0.9	-60.0	
2nd	8:15		6.21	1664	65.3	8.7	4.0	-62.5	
3rd	8:20		6.19	1667	65.2	8.5	5.3	-59.2	
4th									

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021517	619	1667	652	85	53	-592	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 825
Duplicate 830

Date	Name	Signature	Company
2/15/17	John Reinert	R.D. Reinert	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP / Walter Coke

Site No.:

Sample Point: MW52

Sample ID: 932

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	0000		28	30	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Type:

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 579.38 (ft/msl)

Depth to Water (DTW) (from TOC): 8.07 (ft)

Groundwater Elevation (site datum, from TOC): 571.31 (ft/msl)

Total Well Depth (from TOC): 25.00 (ft)

Stick Up (from ground elevation): -2.1 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
9:37		1st 6.20	1st 1217	7.20	20.3	1.98	-57.7	
9:42		2nd 6.22	2nd 1219	7.21	16.5	1.65	-52.2	
9:47		3rd 6.21	3rd 1232	7.24	9.8	1.14	-49.5	
		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021417	6.21	1232	7.24	9.8	1.14	-49.5	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 952

Duplicate 957

Date	Name	Signature	Company
2/14/17	John Reinert	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: ERP Walter Coke

Site No.: | Sample Point: MW511 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	1035		33	35	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5820.7 (ft/msl)	4.10 (ft)	5797 (ft/msl)	24.50 (ft)	2.56 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1038	1st	6.86	1747	6.74	90	1.7	+392	
1043	2nd	6.27	16911	6.70	84	1.9	-494	
1048	3rd	6.28	17012	6.69	71	1.5	-507	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
021417	6.28	t703	6.69	70	1.5	-507	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled 1054

2, 14, 17 — John Reinert — J. Reinert — Terracon

Date — Name — Signature — Company

FIELD INFORMATION FORM

Terracon

Site Name: ERP/Walter Coke

Site No.:

Sample Point: MW56

Sample ID

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	1105		31	32	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) | 0.45 μ | or | μ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 581.70 (ft/msl)

Depth to Water (DTW) (from TOC): 1.45 (ft)

Groundwater Elevation (site datum, from TOC): 580.25 (ft/msl)

Total Well Depth (from TOC): 20.50 (ft)

Stick Up (from ground elevation): -3.1 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
11:10		1st 6.09	1st 636.0	7.11	33.1	4.2	-97.1	
11:17		2nd 6.51	2nd 1245	7.06	25.4	3.7	-103.1	
11:22		3rd 6.47	3rd 1195	7.05	21.9	3.2	-105.9	
		4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
021417	6.47	1195	7.05	21.9	3.2	-105.9	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 1127

Date	Name	Signature	Company
2/14/17	John Remert	[signature]	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP/Walter Coke

Site No.:

Sample Point: MW55 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	1150		36	38	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ___ µ (circle or fill in)

Purging Device: C

Sampling Device: C

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Type: ___ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 58349 (ft/msl)

Depth to Water (DTW) (from TOC): 042 (ft)

Groundwater Elevation (site datum, from TOC): 58307 (ft/msl)

Total Well Depth (from TOC): 2258 (ft)

Stick Up (from ground elevation): -07 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1153		1st	607	1st	912	689	97	15	-861	
1200		2nd	607	2nd	910	692	81	09	-967	
1205		3rd	607	3rd	903	693	73	07	-1012	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ___ Units ___
021417							

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ___ Outlook: ___ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 1210

Date	Name	Signature	Company
02/14/17	John Remit	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: ERP / Walter Coke

Site No.: | | | | | Sample Point: MW54 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
02/14/17	1240		54	58	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
582.62 (ft/msl)	08.8 (ft)	581.74 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
34.00 (ft)	-0.8 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1243	1st	6.52	4560	6.95	12.8	1.0	+100.2	
1305	2nd	6.57	516	7.04	9.1	1.0	+106.1	
1310	3rd	6.57	519	7.04	8.2	0.7	-108.2	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
02/14/17	6.57	519	7.04	8.2	0.7	-108.2	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled 1315

MSD 1320

2/14/17 John Remert ZD. Remert Terracon

Date Name Signature Company

FIELD INFORMATION FORM

Terracon

Site Name: ERP / Walter Coke

Site No.: | Sample Point: MW53 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
021417	1400		34	36	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5823.3 (ft/msl)	4.02 (ft)	578.31 (ft/msl)	25.00 (ft)	-1.2 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1403	1st	6.05	1103	6.87	1.12	2.0	-184	
1415	2nd	6.07	935	6.84	7.9	1.6	-410	
1420	3rd	6.10	896	6.83	7.7	1.4	-484	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: / Units
021417	6.10	896	6.83	7.7	1.4	-484	

Sample Appearance: Clear — Odor: None — Color: Clear — Other: ____

Weather Conditions (required daily, or as conditions change): — Direction/Speed: ____ — Outlook: ____ — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled 1425

2/14/17 — John Rement — J. D. Rement — Terracon

Date — Name — Signature — Company

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: _____ Project #: _____

Location: _____

Date: _____ Weather: _____ Temp. (F): _____

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	MW-55	MW-56	MW-78	MW-90	CW-1	CW-2	CW-3
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well					~~8.51~~	~~4.74~~	
5. Depth to Water	0.42	1.45	11.77	7.63	8.51	4.74	0.58
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes: CW-1 Leak at hose clamp

MW-90 - No lock on standup Cover & Replaced

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

Terracon

TERRACON CONSULTANTS, INC.

MONITORING WELL FIELD REPORT

Client: _____ Project #: _____

Location: _____

Date: _____ Weather: _____ Temp. (F): _____

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	CW-4	CW-5	CW-6	MW-80	MW-81	MW-77	MW-89
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	11.04	2.17	7.19	1.92	2.50	5.51	151.65
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes: _____

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: _____ Project #: _____

Location: _____

Date: _____ Weather: _____ Temp. (F): _____

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	MW-49S	MW-49D	MW-50	MW-51	MW-52	MW-53	MW-54
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	7.23	15.87	7.58	4.10	8.07	4.02	0.88
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

Terracon

TERRACON CONSULTANTS, INC.

MONITORING WELL FIELD REPORT

Client: _____ Project #: _____

Location: _____

Date: _____ Weather: _____ Temp. (F): _____

Development ☐ Purging ☐ Sampling ☐ Free Product Recovery ☐

Well I.D.	MW-72	MW-70	MW-71				
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	6.32	6.35	4.39				
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes: _____

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

FIELD INFORMATION FORM

Terracon

Site Name: ER Walter Coke

Site No.:

Sample Point: mw495 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
08 12 17	830		21	20	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): 581.41 (ft/msl)

Depth to Water (DTW) (from TOC): 13.66 (ft)

Groundwater Elevation (site datum, from TOC): 567.75 (ft/msl)

Total Well Depth (from TOC): 26.50 (ft)

Stick Up (from ground elevation): 2.93 (ft)

Casing ID: 2 (in)

Casing Material: PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
832		1st	6.63	1st	1402	24.2	36	2.73	-90.8	
840		2nd	6.55	2nd	1460	23.6	1.0	11.3	-129.7	
845		3rd	6.55	3rd	1484	23.6	2.0	9.5	-131.3	
		4th		4th						

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
05 17 17	6.55	1484	23.6	2.0	9.5	-131.5	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 850

MSD @ 855

Date	Name	Signature	Company
5.17.17	Steve Akins	[signature]	Terracon
5.17.17	Larry Fleet	[signature]	Terracon

FIELD INFORMATION FORM

Site Name: ERP / Walter Coke

Site No.: 1

Sample Point: MW4D (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05/17/17	925		24	25	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5813.7 (ft/msl)	15.50 (ft)	425.87 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
170.0 (ft)	2.84 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 9:27		6.35	1042	22.6	2.1	2.69	-130.4	
2nd 9:51		6.47	1008	21.3	1.9	7.1	-270.7	
3rd 10:10		6.45	1006	21.2	1.0	12.2	-288.1	
4th								

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
05/17/17	6.45	1006	21.2	1.0	12.2	-288.1	

Sample Appearance: Clear Odor: None Color: Clear Other:

Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 10:05

Date	Name	Signature	Company
5/17/17	Steve Akins	S. Akins	Terracon
/ /			

FIELD INFORMATION FORM

Site Name: ERP/Wilker Coke
Site No.: | Sample Point: MW-50 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
05/18/17	0850		38	40	10

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N
Filter Device: Y or (N) 0.45 µ or _____ µ (circle or fill in)
Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle
Sampling Device: C
X-Other:
Filter Type: _____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other
Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5809.3 (ft/msl)	12.27 (ft)	568.66 (ft/msl)	35.50 (ft)	2.93 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
0853	1"	6.37	1677	22.1	3.1	4.84	-59.5	
0910	2nd	6.29	1664	19.4	0.6	1.94	-82.9	
0925	3rd	6.29	1671	19.5	0.5	1.59	-85.4	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
05/18/17	6.29	1671	19.5	0.5	1.59	+85.4	

Sample Appearance: Clear Odor: NONE Color: Clear Other:
Weather Conditions (required daily, or as conditions change): Direction/Speed: Outlook: Cloudy Precipitation: Y or (N)
Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sample @ 0930
Duplicate @ 0935

Date	Name	Signature	Company
05/18/17	Larry Fleet		Terracon
05/18/17	Steve Akins		Terracon

FIELD INFORMATION FORM

Site Name: ERP/Walter Coke

Site No.: | Sample Point: MW5I (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05 17 17	8:00		28	30	

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

X-Other:

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5807 (ft/msl)	732 (ft)	574.75 (ft/m

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
24.50 (ft)	2.56 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st 8:10	1st	1st 6.25	1st 1984	20.9	10.1	2.00	- 649	
2nd 8:15	2nd	2nd 6.25	2nd 1916	20.3	3.0	1.6	- 1173	
3rd 8:20	3rd	3rd 6.25	3rd 1920	20.3	2.7	1.2	- 1243	
4th	4th	4th	4th					

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
05 17 17	6.25	1920	20.3	2.7	1.2	- 1243	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 8:25

Date	Name	Signature	Company
5,17,17	Steve Akins		Terracon
5,17,17	Larry Fleet		Terracon

FIELD INFORMATION FORM

Site Name: ERP / Walter Coke

Site No.: | Sample Point: MW52 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05 17 17	1015		27	3	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5793.8 (ft/msl)	85.1 (ft)	5708.7 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
250.0 (ft)	-2.1 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1017	1"	6.35	1227	23.2	56	6.0	-188.6	
1035	2"	6.32	1249	23.2	126	4.1	-200.3	
1045	3"	6.31	1247	23.2	20	3.8	-203.7	
	4"							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units
05 17 17	6.31	1247	23.2	20	3.8	-203.7	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1050

Date	Name	Signature	Company
5/17/17	Steve Akins		Terracon
5/17/17	Larry Fleet		Terracon

FIELD INFORMATION FORM

Site Name: ERP / Walter Coke

Site No.: ____ Sample Point: MW53 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
05/17/17	715		3.2	3.5	1.0

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other: ____

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
582.33 (ft/msl)	5.13 (ft)	577.20 (ft/msl)	25.00 (ft)	-1.2 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
717	1st	6.50	1021	20.7	3.8	3.70	274	
736	2nd	6.27	900	20.3	1.5	1.9	209	
745	3rd	6.27	865	20.3	1.4	1.7	835	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
05/17/17	6.27	865	20.3	1.4	1.7	835	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sampled @ 750

Duplicate @ 755

Date	Name	Signature	Company
5/17/17	Steve Akins		Terracon
5/17/17	Larry Fleet		Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP / Walter Coke

Site No.: | | | | | Sample Point: MW54 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05/17/17	1215		51	5	1

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5826.2 (ft/msl)	25.0 (ft)	-10.12 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
34.00 (ft)	-0.08 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1217	1st	6.64	1563	21.0	15.6	2.83	-149.4	
1235	2nd	6.62	1547	21.6	10.8	6.1	-163.9	
1255	3rd	6.64	1541	21.5	1.4	5.6	-167.4	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
05/17/17	6.64	1541	21.5	1.4	5.6	-167.4	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 1305

Date	Name	Signature	Company
5/17/17	Steve Atkins	Steve Atkins	Terracon
5/17/17	Larry Fleet	Larry Fleet	Terracon

FIELD INFORMATION FORM

Terracon

Site Name: ERP / Walter Coke

Site No.: | Sample Point: MW55 (Sample ID)

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05/17/17	1115		34	65	91

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5839 (ft/msl)	62 (ft)	5817 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
2258 (ft)	-007 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1117	1st	6.05	1036	21.2	52	8.0	-158.4	
1130	2nd	6.05	1021	21.2	23	4.5	-169.7	
1145	3rd	6.04	1010	21.2	27	3.6	-170.6	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
05/17/17	6.04	1010	21.2	27	3.6	-170.6	

Sample Appearance: Clear — Odor: None — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sampled @ 150

Date	Name	Signature	Company
5/17/17	Steve Akins		Terracon
5/17/17	Larry Fleet		Terracon

FIELD INFORMATION FORM

Site Name: CRP/Walter Coke

Site No.: | Sample Point: MW56 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05 17 17	1155		24	25	(

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: ____ — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
5818.70 (ft/msl)	1155 (ft)	5801.5 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
2050 (ft)	-3.1 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1817	1st	6.55	1278	23.2	25.3	1.28	654	
1915	2nd	6.48	1178	23.6	5.5	5.7 -	1890	
1425	3rd	6.48	1198	23.7	4.5	4.9 -	1908	
	4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: ____ Units ____
05 17 17	6.48	1198	23.7	4.5	4.9 -	1908	

Sample Appearance: Clear Odor: None Color: Clear Other: ____

Weather Conditions (required daily, or as conditions change): Direction/Speed: ____ Outlook: ____ Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sample @ 1430

Date	Name	Signature	Company
5,17,17	Steve Akins	Steve Akins	Terracon
5,17,17	Larry Fleet	Larry Fleet	Terracon

FIELD INFORMATION FORM

Site Name: ERP/Walker Coke

Site No.: | Sample Point: MW78 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05/18/17	0715		52	50	10

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or (N) — 0.45 µ or ____ µ (circle or fill in)

Filter Type: — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)
97876 (ft/msl)	1400 (ft)	56476 (ft/msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
4600 (ft)	- 025 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
0717		1st	698	758	20.9	16	30.7	- 34	
0730		2nd	659	787	20.6	1510	13.9	- 1778	
0755		3rd	658	766	20.8	283	5.7	- 1850	
		4th							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
051817	658	766	208	283	5.7	- 1850	

Sample Appearance: Clear — Odor: none — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): — Direction/Speed: — Outlook: Cloudy — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Sample @ 0800

MSD @ 0805

Date	Name	Signature	Company
05,18,17	Larry Fleet		Terracon
05,18,17	Steve Akins		Terracon

FIELD INFORMATION FORM

Site Name: ERP/Walter Coke

Site No.: ____ Sample Point: MW-90 (Sample ID)

Terracon

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOL PURGED
05 18 17	0815		20	9	1.0

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: Y or (N) 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — Sampling Device: C — X-Other: ____

A- Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: ____ (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other ____)

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (site datum, from TOC)	Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
5813.1 (ft/msl)	12.30 (ft)	569.01 (ft/msl)	24.5 (ft)	2.83 (ft)	2 (in)	PVC

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25 °C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
0817	1"	6.83	519	19.0	17.3	4.00	152	
0828	2"	6.39	532	18.7	3.2	10.1	168	
0835	3"	6.42	533	18.7	0.6	6.8	87	
	4"							

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (umhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L-ppm)	eH/ORP (mV)	Other: Units
05 18 17	6.42	533	18.7	0.6	6.8	87	

Sample Appearance: Clear — Odor: None — Color: Clear — Other: ____

Weather Conditions (required daily, or as conditions change): — Direction/Speed: ____ — Outlook: Cloudy — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

Sample @ 0840

Date	Name	Signature	Company
05,18,17	Larry Fleet		Terracon
05,18,17	Steve Akins		Terracon

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP / Walter Coke Project #: E1167304

Location: Alabama

Date: 5-16-17 Weather: Sunny Temp. (F): 88°

Development ☐ Purging ☐ Sampling ☑ Free Product Recovery ☐

Well I.D.	MW 70	MW 71	MW 72	MW 77	MW 80	MW 81	MW 89
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well							
5. Depth to Water	9.02	6.58	8.37	7.39	2.69	2.30	Dry
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

Terracon

TERRACON CONSULTANTS, INC.
MONITORING WELL FIELD REPORT

Client: ERP/Walter Coke Project #: E1167304

Location: Birmingham, Alabama

Date: 5-16-17 Weather: Sunny Temp. (F): 88°

Development ☐ Purging ☑ Sampling ☑ Free Product Recovery ☐

Well I.D.	CW-1	CW-2	CW-3	CW-4	CW-5	CW-6	
1. Elevation of Top of Casing							
2. Casing Diameter							
3. Depth to Product							
4. Total Depth of Well	15						
5. Depth to Water	15.65	Dry	17.20	12.72	2.82	18.24	
6. Volume of Well Water (#4-#5)(factor)							
7. Volume to Purge (3 to 5 well volumes)							
8. Volume Purged							
9. Pumped/Bailed Dry							
10. Odor Concentration							
11. Dissolved Oxygen							
12. Temperature (F)							
13. pH							
14. Conductivity							

Field Notes:

Well Volume Factors:
2 inch = 0.163
4-inch = 0.652

Signature: _____

Appendix B
Safety Meeting Logs

Page 1 of 1

METER CALIBRATION LOG

PROJECT NAME: Walker Cove/ERP DATE: 8-9-16

PROJECT NUMBER: E116 7304 SAMPLER: S. Akins

MODEL: YSI 556 SERIAL NO.:

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
7:10	10.01			17.21
7:15		7.00		17.20
7:20			4.00	17.20

Buffer Lot Numbers: pH 4: pH 7: pH 10:

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:

Calibration Range for Solution

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:

Calibration Range for Solution

MODEL: Hach 2100 **SERIAL NO.:**

Turbidity Meter

Gel Value (NTU)		Reading (NTU)	Time
0 – 10 range	<0.1	0.0	7:30
0 – 100 range	20	20	
0 – 1,000 range	100	100	
0 – 10 range	800	800	
0 – 100 range			
0 – 1,000 range			

Problems/Corrective Actions:

Signature: Steve Akins Date: 8-9-16

QC'd By: Date:

METER CALIBRATION LOG

PROJECT NAME: Water Coke / ERP DATE: 8-10-16

PROJECT NUMBER: E116309 SAMPLER: S. Atkins

MODEL: YSI 556 SERIAL NO.:

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
700	10.01			16.98
705		7.00		16.98
710			4.0	16.97

Buffer Lot Numbers: pH 4:_____ pH 7:_____ pH 10:_____

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:_____

Calibration Range for Solution _____

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:_____

Calibration Range for Solution _____

MODEL: Hach 2100 **SERIAL NO.:**_____

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range 10.1	0.0	7:15
0 – 100 range 20	20	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions:_____

Signature: S. Atkins Date: 8-10-16

QC'd By:_____ Date:_____

METER CALIBRATION LOG

PROJECT NAME: Walter Coke / BRP DATE: 8-11-16

PROJECT NUMBER: E1167304 SAMPLER: S. Akins

MODEL: YSI 556 SERIAL NO.:

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
7:00	10.00			17.21
7:05		7.01		17.18
7:10			4.00	17.18

Buffer Lot Numbers: pH 4: pH 7: pH 10:

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:

Calibration Range for Solution

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:

Calibration Range for Solution

MODEL: Hach 2100 **SERIAL NO.:**

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range <0.1	0.0	7:15
0 – 100 range 20	20	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions:

Signature: [signature] Date: 8-11-16

QC'd By: Date:

Walter Coke / ERP

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 8/8-11/16

Safety Meeting Conducted By: Steve Akins

Identified Job Hazards

Traffic

Rail Cars / engines

Weather - Possible Lightning

C.O.C. -

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature	
Steve Akins	Steve Akins	8-8-16
Steve Akins	Steve Akins	8-9-16
Steve Akins	Steve Akins	8-10-16
Steve Akins	Steve Akins	8-11-16

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

Photography log

Photo ID#	Date	Time	Location	Weather conditions	Photo taken by:	Subject of Photo:
1	8-9-16		WaterCoke/ERP	Rain/D-122k	S.A.K.M.	MW-77
2	↓					MW54
3						MW-53 & Duplicate
4						MW-51
5						MW49S - MSD
6						MW 49D -
7	8-10-16					MW-81
8						MW52S MSD
9						MW-55
10						MW-56
11						MW-78
12						MW-90
13						MW-50
14						MW-80 & Duplicate
15	8-11-16					MW-72
16						MW-70
17						MW-89
18						MW-71

E-1100
E-1120
E-1130

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 11/15-/16

Safety Meeting Conducted By: S. Akins

Identified Job Hazards

Traffic

Dry Weather

Chemicals of Concern

Rail Cars

Extreme Fog in morning

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature	
Steve Akins	Steve Akins	11-15-16
Steve Akins	Steve Akins	11-16-16

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

Page 1 of 1

METER CALIBRATION LOG

PROJECT NAME: ERB/Walter Coke DATE: 10-15-16

PROJECT NUMBER: E116304 SAMPLER: _____

MODEL: YSI 556 SERIAL NO.: _____

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
1200	10.01			17.21
1205		7.00		17.18
1210			4.02	17.19

Buffer Lot Numbers: pH 4: _____ pH 7: _____ pH 10: _____

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number: _____

Calibration Range for Solution _____

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number: _____

Calibration Range for Solution _____

MODEL: Hach 2100 **SERIAL NO.:** _____

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range <0.1	0.0	1215
0 – 100 range 20	20.	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions: _____

Signature: S. Ahn Date: 10-15-16

QC'd By: _____ Date: _____

Page ____ of ____

METER CALIBRATION LOG

PROJECT NAME: ERP/Walters Coke DATE: 11-16-16

PROJECT NUMBER: E1167304 SAMPLER: SA

MODEL: YSI 556 SERIAL NO.: _____

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
6:30	10.01			17.63
6:35		7.00		17.58
6:40			4.00	17.52

Buffer Lot Numbers: pH 4: _____ pH 7: _____ pH 10: _____

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number: _____

Calibration Range for Solution _____

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number: _____

Calibration Range for Solution _____

MODEL: Hach 2100 **SERIAL NO.:** _____

Turbidity Meter

Gel Value (NTU)		Reading (NTU)	Time
0 – 10 range	20.1	0.0	6:45
0 – 100 range	20	20.0	
0 – 1,000 range	100	100	
0 – 10 range	800	800	
0 – 100 range			
0 – 1,000 range			

Problems/Corrective Actions: _____

Signature: _____ Date: 11-16-16

QC'd By: _____ Date: _____

Photography log

Photo ID#	Date	Time	Location	Weather conditions	Photo taken by:	Subject of Photo:
1	11-15-16		ERP/Walter Coke	Sunny	S. Akins	MW-53 & MSD
2	↓					MW-51
3						MW-95
4						MW-49D
5						MW-52 & Duplicate
6	↓					Eq. Blank & Field Blank
7	11-16-16					MW-54 & MSD
8						MW-55
9						MW-56
10						MW-78
11						MW-90
12						MW-50 & Duplicate
13						Effluent
14						Field, Equipment & Trip Blanks

Eff. - 1030
Eq. - 1045

Eff - 1315
Field - 1335
Equip. 1345

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 02/13 - 14 - 15/17

Safety Meeting Conducted By: J. Remert

Identified Job Hazards

Traffic

Warm weather

Chemicals of Concern

Trains

Security when offsite

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature	
John Remert	J. Remert	2/13/17
John Remert	J. Remert	2/14/17
John Remert	J. Remert	2/15/17

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

Page ____ of ____

METER CALIBRATION LOG

PROJECT NAME: ERP / Walter Coke DATE: 2/15/17

PROJECT NUMBER: ____ SAMPLER: ____

MODEL: YSI Professional Plus SERIAL NO.: ____

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
642	9.97			47.3
647		7.0		47.1
652			4.0	47.5

Buffer Lot Numbers: pH 4: ____ pH 7: ____ pH 10: ____

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number: ____

Calibration Range for Solution ____

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number: ____

Calibration Range for Solution ____

MODEL: ____ **SERIAL NO.:** ____

Turbidity Meter

Gel Value (NTU)		Reading (NTU)	Time
0 – 10 range	20.1	0.0	656
0 – 100 range	20	20.0	
0 – 1,000 range	100	100	
0 – 10 range	800	800	
0 – 100 range			
0 – 1,000 range			

Problems/Corrective Actions: ____

Signature: R.D. Bennett Date: 2/15/17

QC'd By: ____ Date: ____

Page ____ of ____

METER CALIBRATION LOG

PROJECT NAME: ERP / Walter Coke DATE: 2/14/17

PROJECT NUMBER: SAMPLER:

MODEL: YSI Professional Plus SERIAL NO.:

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
645	9.97			52.5
650		7.01		52.6
655			4.0	52.6

Buffer Lot Numbers: pH 4: pH 7: pH 10:

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:

Calibration Range for Solution

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:

Calibration Range for Solution

MODEL: **SERIAL NO.:**

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range <0.1	0.0	700
0 – 100 range 20	20.0	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions:

Signature: A D. Rivett Date: 2/14/17

QC'd By: Date:

Photography log

Photo ID#	Date	Time	Location	Weather conditions	Photo taken by:	Subject of Photo:
1	2/14/17		ERP / Walters Lake	Sunny	J. Rennert	MW495
2						MW49D
3						MW52 & Duplicate
4						MW-51
5						MW-56
6						MW-55
7						MW54 & MSD
8	↓					MW53
9	2/15/17					MW78 & MSD
10						MW50 & Duplicate
11						MW90
12						Effluent
13						Field & Equip. Blanks & Trip Blanks

Page 1 of 1

METER CALIBRATION LOG

PROJECT NAME: ERP / Walter Coke DATE: 5/17-17

PROJECT NUMBER: E116804 SAMPLER: S. Akins

MODEL: YSI Professional SERIAL NO.:

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
6:20	10.04			17.28
6:35		7.01		17.23
6:40			4.00	17.22

Buffer Lot Numbers: pH 4: pH 7: pH 10:

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:

Calibration Range for Solution

MODEL: Hach 2100

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:

Calibration Range for Solution

SERIAL NO.:

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range <0.1	0.0	6:50
0 – 100 range 20	20	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions:

Signature: Date: 5-17-17

QC'd By: Date:

Page ____ of ____

METER CALIBRATION LOG

PROJECT NAME: ERP / Walter Coke DATE: 5-18-17

PROJECT NUMBER:____ SAMPLER:____

MODEL: YSI SERIAL NO.:____

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Soln (°C)
630	10.03			17.11
635		7.01		17.08
840			4.00	17.08

Buffer Lot Numbers: pH 4:____ pH 7:____ pH 10:____

CONDUCTIVITY METER

Temp. of Calibration Soln	Corrected Cond. @ 25°C	Time

Calibration Solution Lot Number:____

Calibration Range for Solution ____

REDOX METER

Temp (°C)	E_H Reading (mV)	Time

Calibration Solution Lot Number:____

Calibration Range for Solution ____

MODEL: Hach 210D **SERIAL NO.:**____

Turbidity Meter

Gel Value (NTU)	Reading (NTU)	Time
0 – 10 range 20.1	0.0	8:45
0 – 100 range 20	20	
0 – 1,000 range 100	100	
0 – 10 range 800	800	
0 – 100 range		
0 – 1,000 range		

Problems/Corrective Actions:____

Signature: [signature] Date: 5-18-17

QC'd By:____ Date:____

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 5-17-17

Safety Meeting Conducted By: S. Akins

Identified Job Hazards

COC's

Traffic

Weed

Bees/wasps

Slip trip Falls

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature
Steve Akins	
Larry Fleet	

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 05-16-17

Safety Meeting Conducted By: S. Akins

Identified Job Hazards

C o C – Splash Hazards

Heat – Hydrate

Traffic – Trucks & Rail

Tripping Hazards

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature
Steve Akins	
Larry Fleet	

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

DAILY SAFETY MEETING AND JOB HAZARD LOG

Date: 5-18-17

Safety Meeting Conducted By: S. Akins

Identified Job Hazards

COC

Weather / possible rain

Traffic

Heat

Slips / trips

Signature of Acknowledgement

I have received instructions for safe work practices, personal protective equipment, and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

Name	Signature
S. Akins	Steve Akins

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

Photography log

Photo ID#	Date	Time	Location	Weather conditions	Photo taken by:	Subject of Photo:
1	5-17-17	7:15	ERC/Walter Cobb	Sunny	S. Akins	MW53-051717 & Duplicate-051717
2						MW51-051717
3						MW49D-051717
4						MW49S-051717 & MW3D-051717
5						MW52-051717
6						MW54-051717
7						MW55-051717
8						MW56-051717
9						Field Blank-051717 & Equipment Blank-051717
10	5-18-17			Cloudy		MW78-051817
11				Mostly Cloudy -		MW90-051817
12						MW50-051817 & Duplicate-051817
13						EPH Inlet-051817
14						Field Blank-051817 & Equip Blank-051817

Appendix C
VOC Trend Graphs

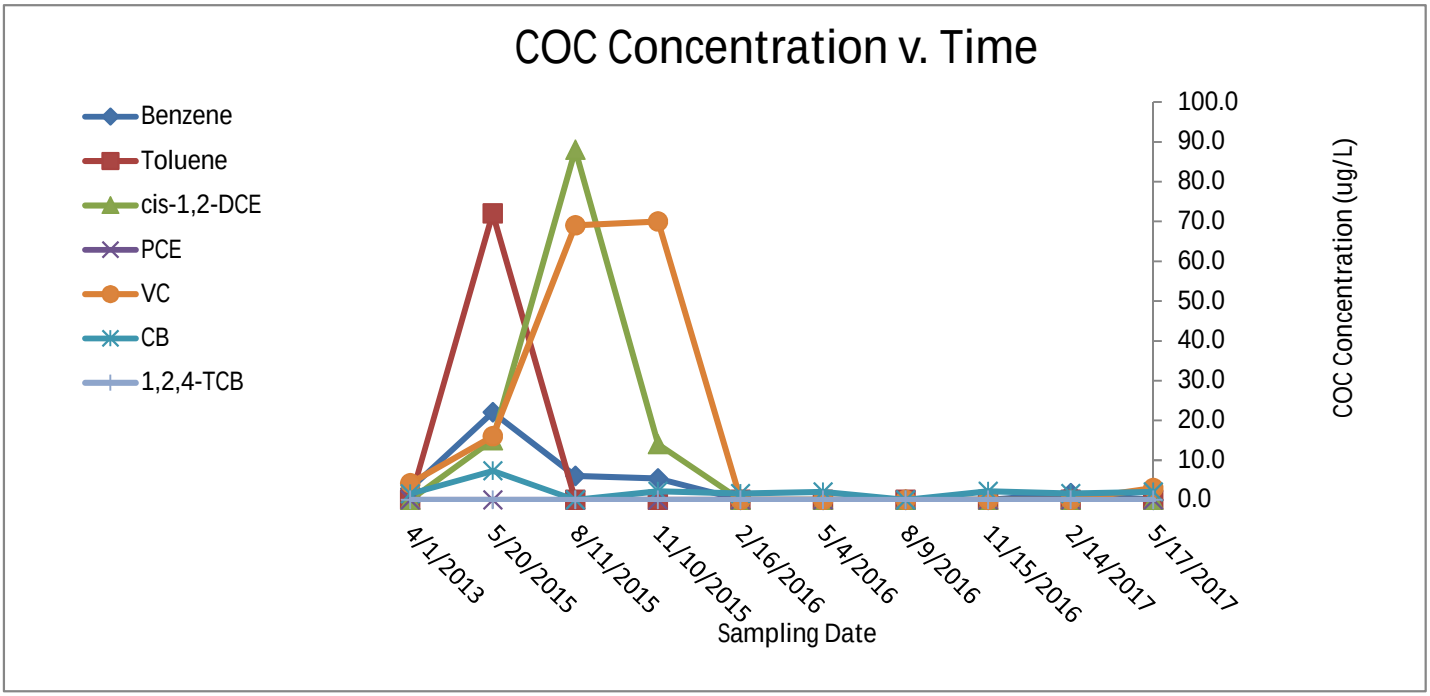
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-49S										
Chemicals of Concern Data										
DATE	4/1/2013	5/20/2015	8/11/2015	11/10/2015	2/16/2016	5/4/2016	8/9/2016	11/15/2016	2/14/2017	5/17/2017
Benzene	2.8	22	6	5.4	ND	ND	ND	ND	1.7	ND
Toluene	ND	72	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	15	88	14	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	4.2	16	69	70	ND	ND	ND	ND	ND	3
CB	1.5	7.3	ND	2.2	1.6	2	ND	2.2	1.6	2
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



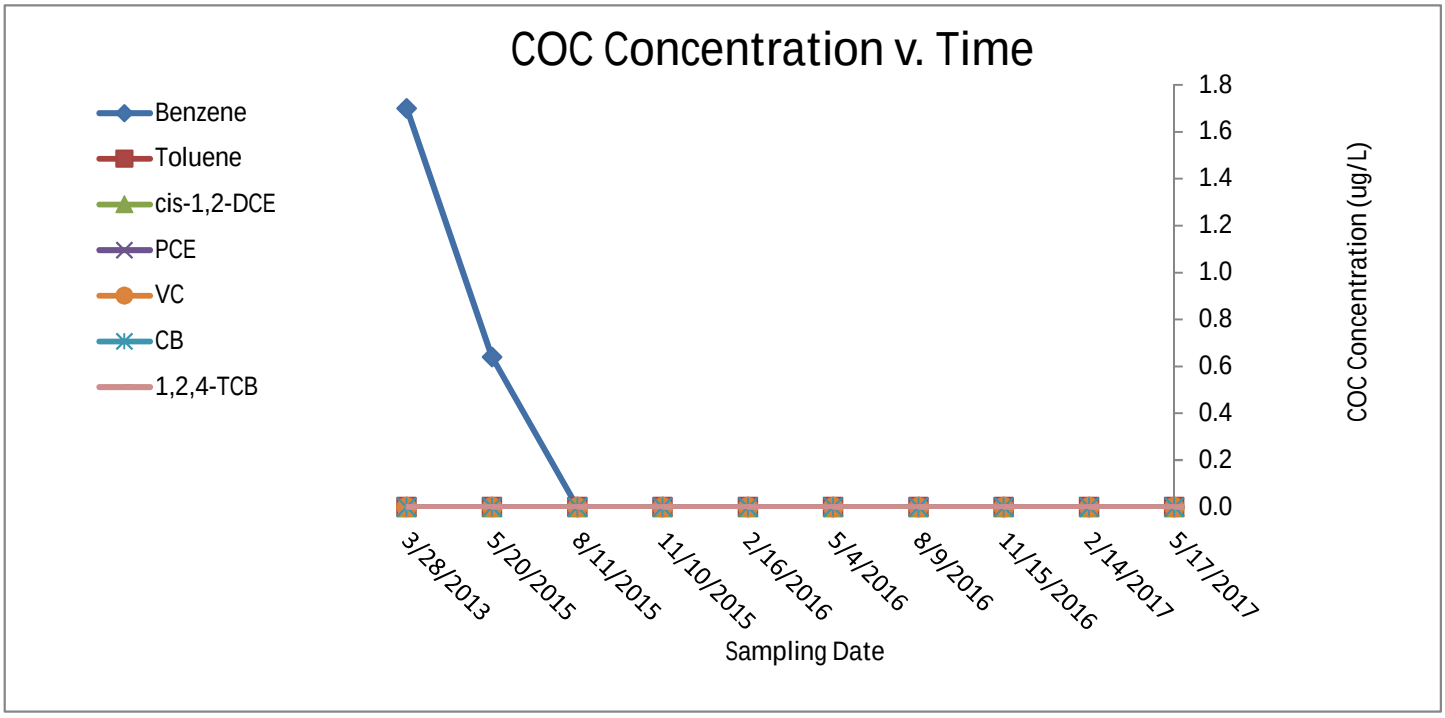
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-49D										
Chemicals of Concern Data										
DATE	3/28/2013	5/20/2015	8/11/2015	11/10/2015	2/16/2016	5/4/2016	8/9/2016	11/15/2016	2/14/2017	5/17/2017
Benzene	1.7	0.64	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



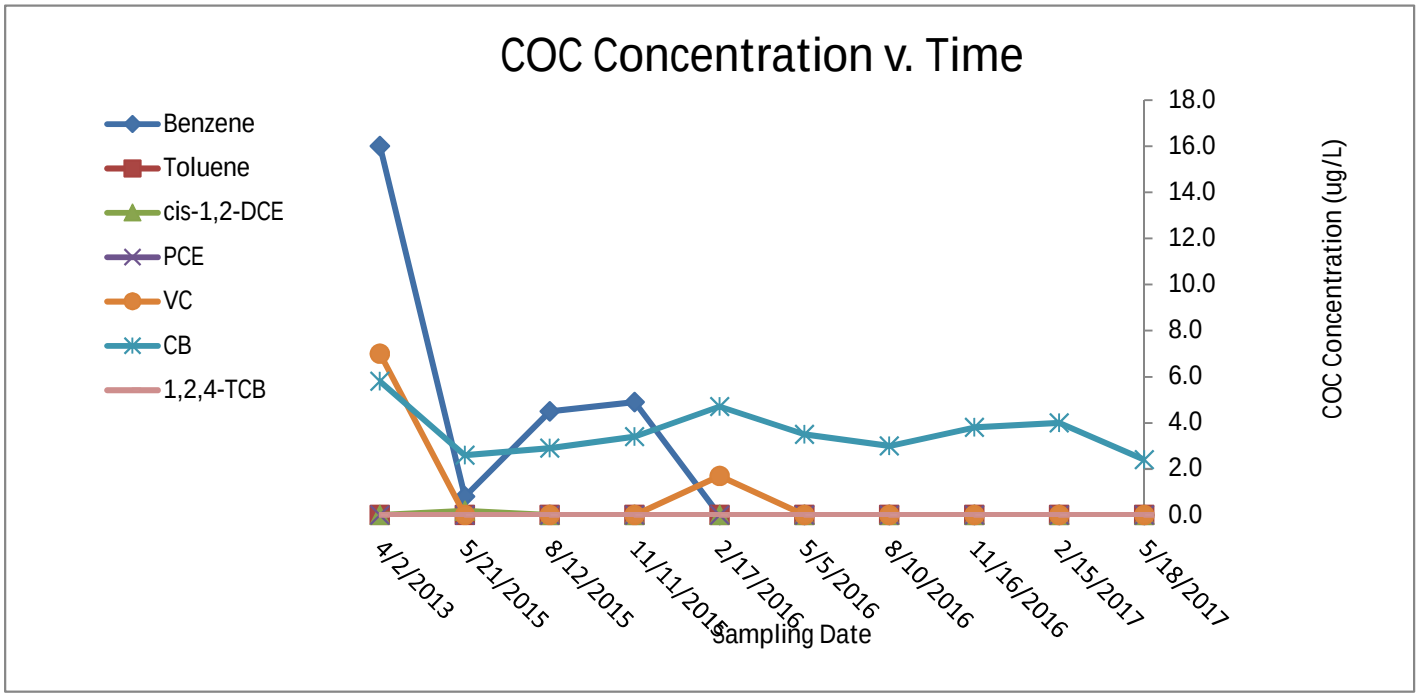
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-50										
Chemicals of Concern Data										
DATE	4/2/2013	5/21/2015	8/12/2015	11/11/2015	2/17/2016	5/5/2016	8/10/2016	11/16/2016	2/15/2017	5/18/2017
Benzene	16	0.8	4.5	4.9	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	0.18	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	7.0	ND	ND	ND	1.7	ND	ND	ND	ND	ND
CB	5.8	2.6	2.9	3.4	4.7	3.5	3	3.8	4	2.4
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



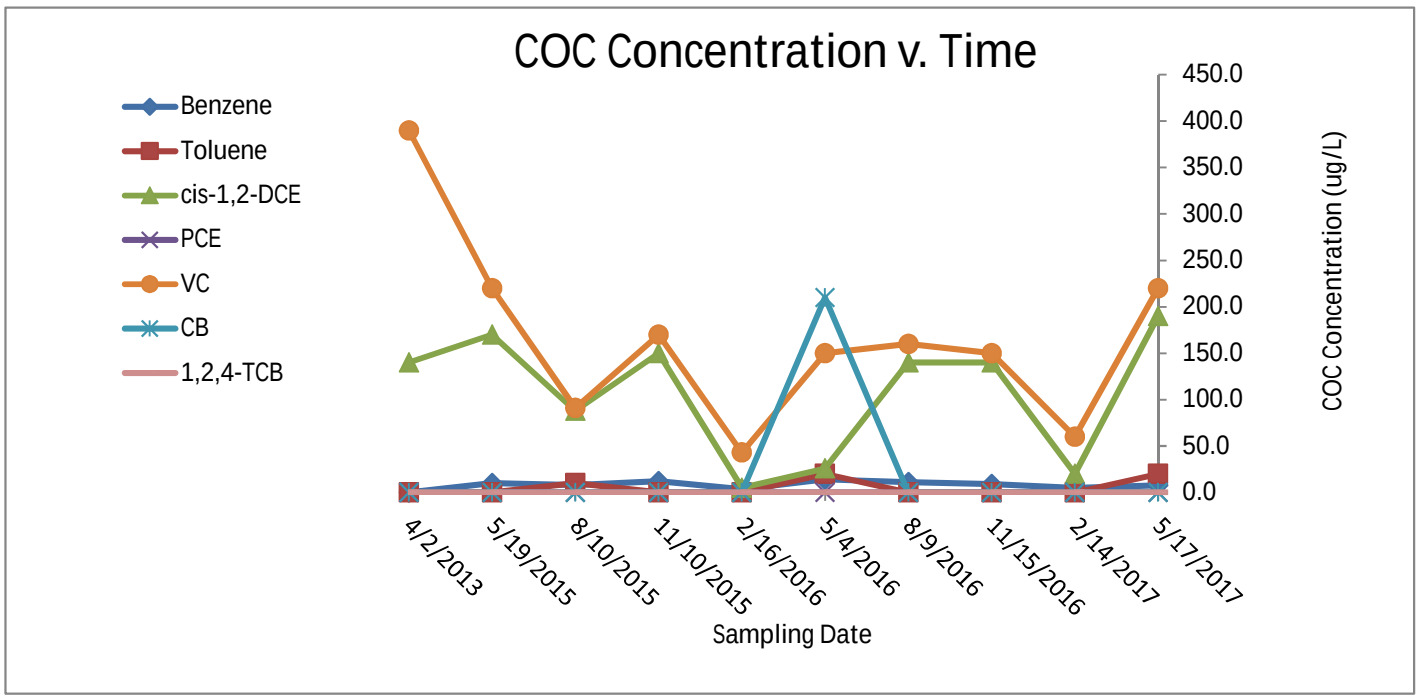
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-51										
Chemicals of Concern Data										
DATE	4/2/2013	5/19/2015	8/10/2015	11/10/2015	2/16/2016	5/4/2016	8/9/2016	11/15/2016	2/14/2017	5/17/2017
Benzene	ND	10	8	12	3.6	14	11	9.1	5	7.6
Toluene	ND	ND	10	ND	ND	20	ND	ND	ND	20
cis-1,2-DCE	140	170	88	150	5	26	140	140	20	190
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	390	220	91	170	43	150	160	150	60	220
CB	ND	ND	ND	ND	ND	210	ND	ND	ND	ND
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



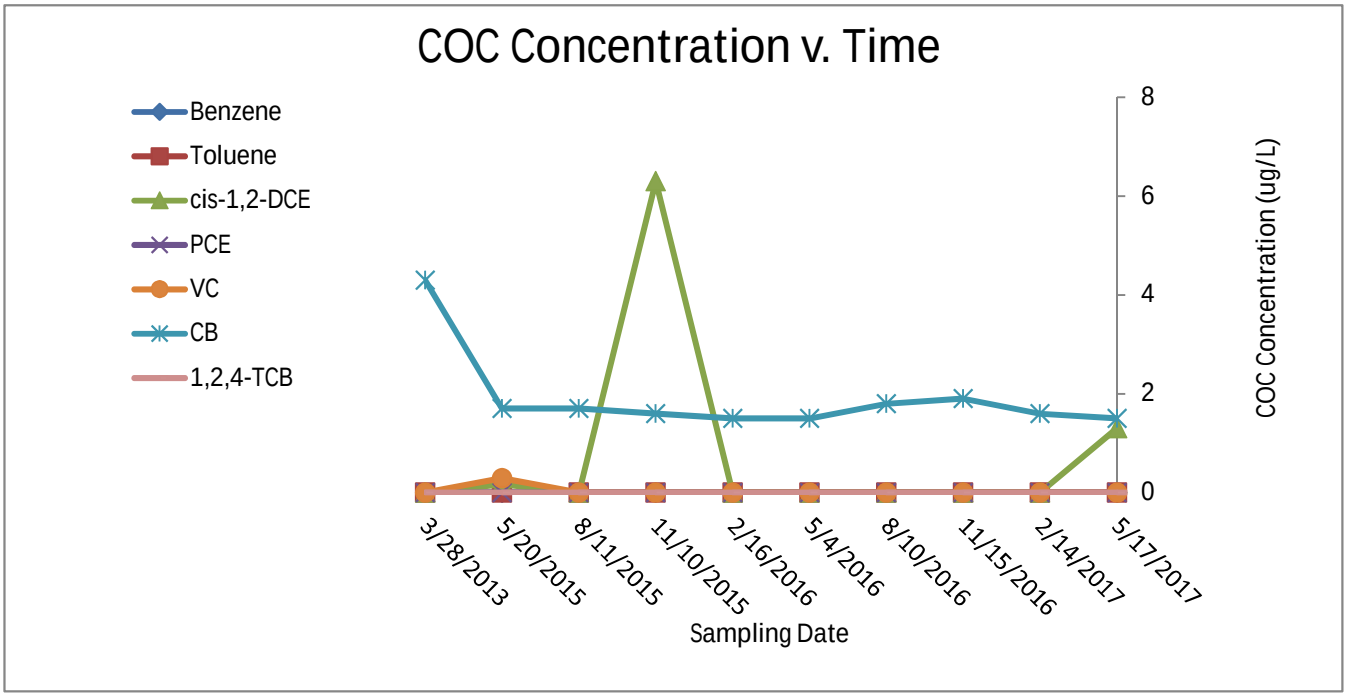
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-52										
Chemicals of Concern Data										
DATE	3/28/2013	5/20/2015	8/11/2015	11/10/2015	2/16/2016	5/4/2016	8/10/2016	11/15/2016	2/14/2017	5/17/2017
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	0.17	ND	6.3	ND	ND	ND	ND	ND	1.3
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND
CB	4.3	1.7	1.7	1.6	1.5	1.5	1.8	1.9	1.6	1.5
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



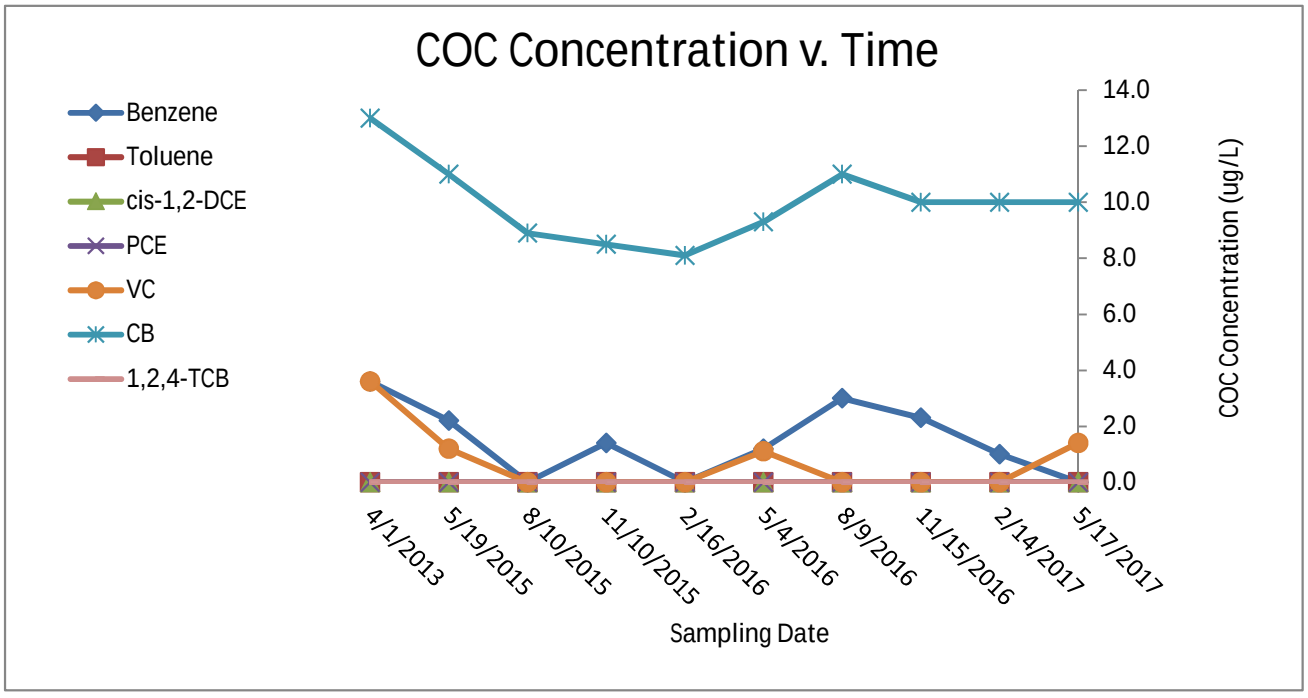
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-53										
Chemicals of Concern Data										
DATE	4/1/2013	5/19/2015	8/10/2015	11/10/2015	2/16/2016	5/4/2016	8/9/2016	11/15/2016	2/14/2017	5/17/2017
Benzene	3.6	2.2	ND	1.4	ND	1.2	3.0	2.3	1.0	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	3.6	1.2	ND	ND	ND	1.1	ND	ND	ND	1.4
CB	13	11	9	9	8.1	9.3	11	10	10	10
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



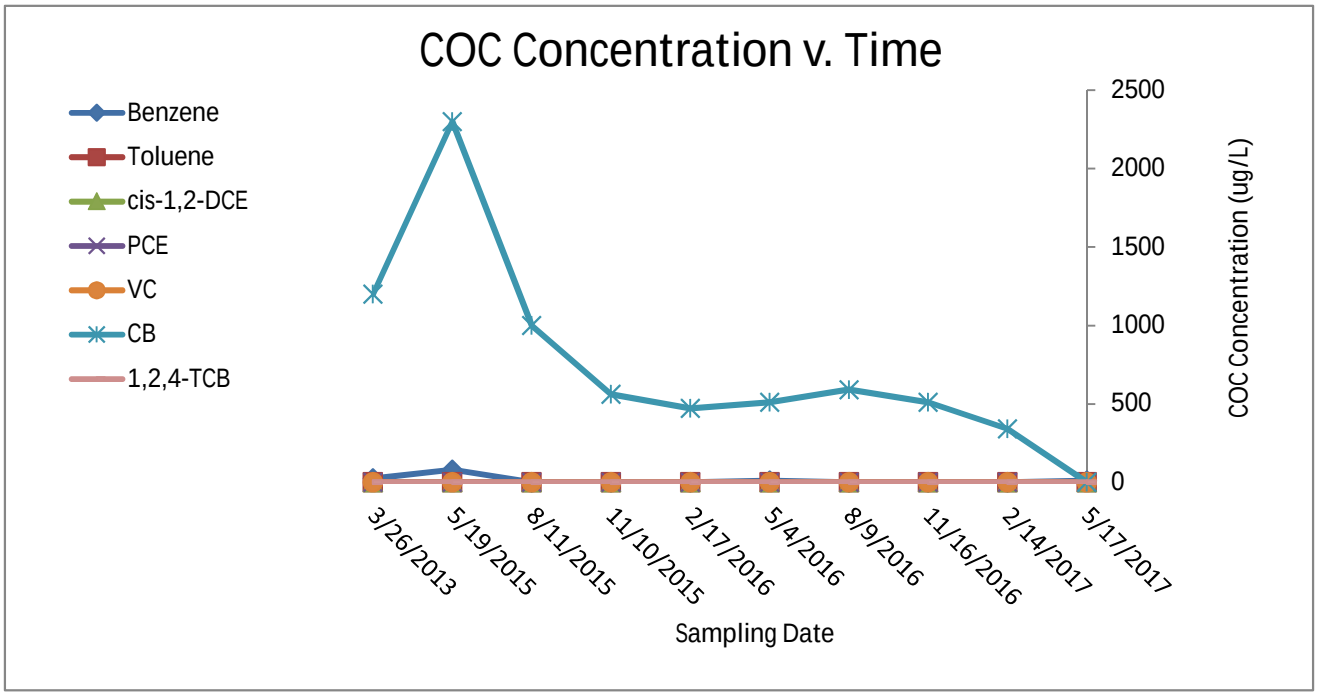
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-54										
Chemicals of Concern Data										
DATE	3/26/2013	5/19/2015	8/11/2015	11/10/2015	2/17/2016	5/4/2016	8/9/2016	11/16/2016	2/14/2017	5/17/2017
Benzene	24	80	ND	ND	ND	10	ND	ND	ND	10
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CB	1200	2300	1000	560	470	510	590	510	340	ND
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NA = Not Analyzed ND = Not Detected above the Reporting Limits



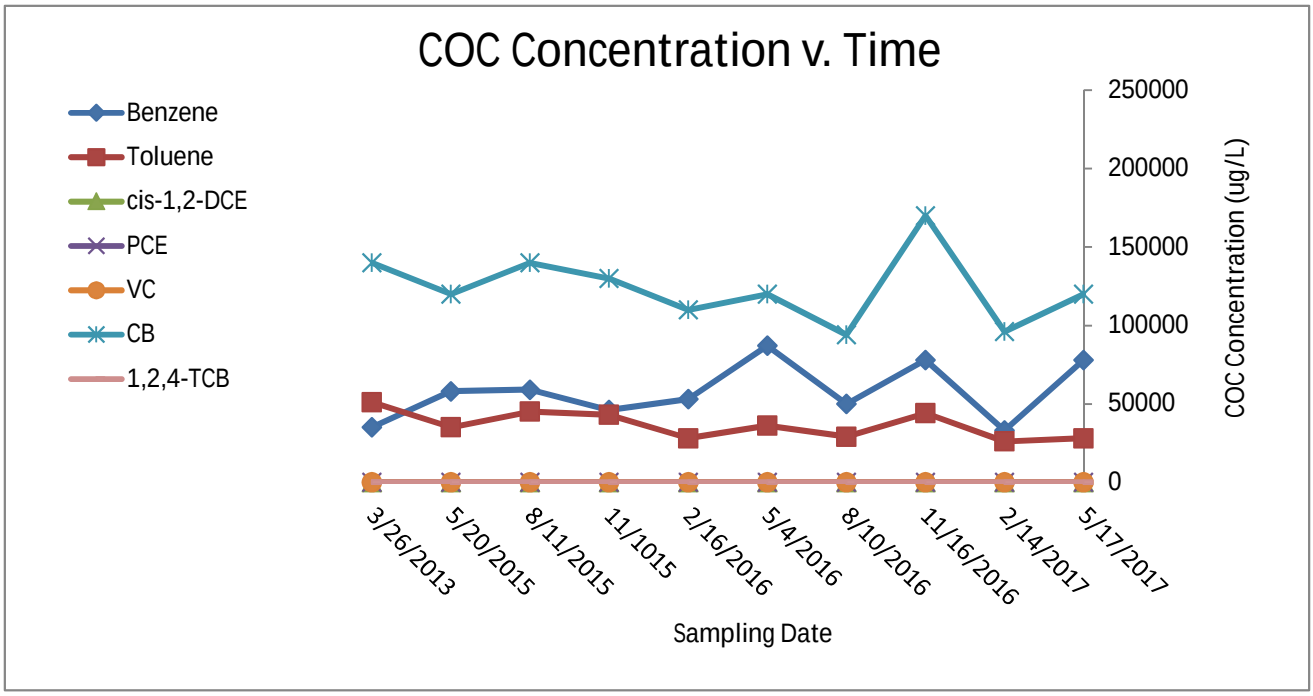
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-55										
Chemicals of Concern Data										
DATE	3/26/2013	5/20/2015	8/11/2015	11/1015	2/16/2016	5/4/2016	8/10/2016	11/16/2016	2/14/2017	5/17/2017
Benzene	35000	58000	59000	46000	53000	87000	50000	78000	33000	78000
Toluene	51000	35000	45000	43000	28000	36000	29000	44000	26000	28000
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CB	140000	120000	140000	130000	110000	120000	94000	170000	96000	120000
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



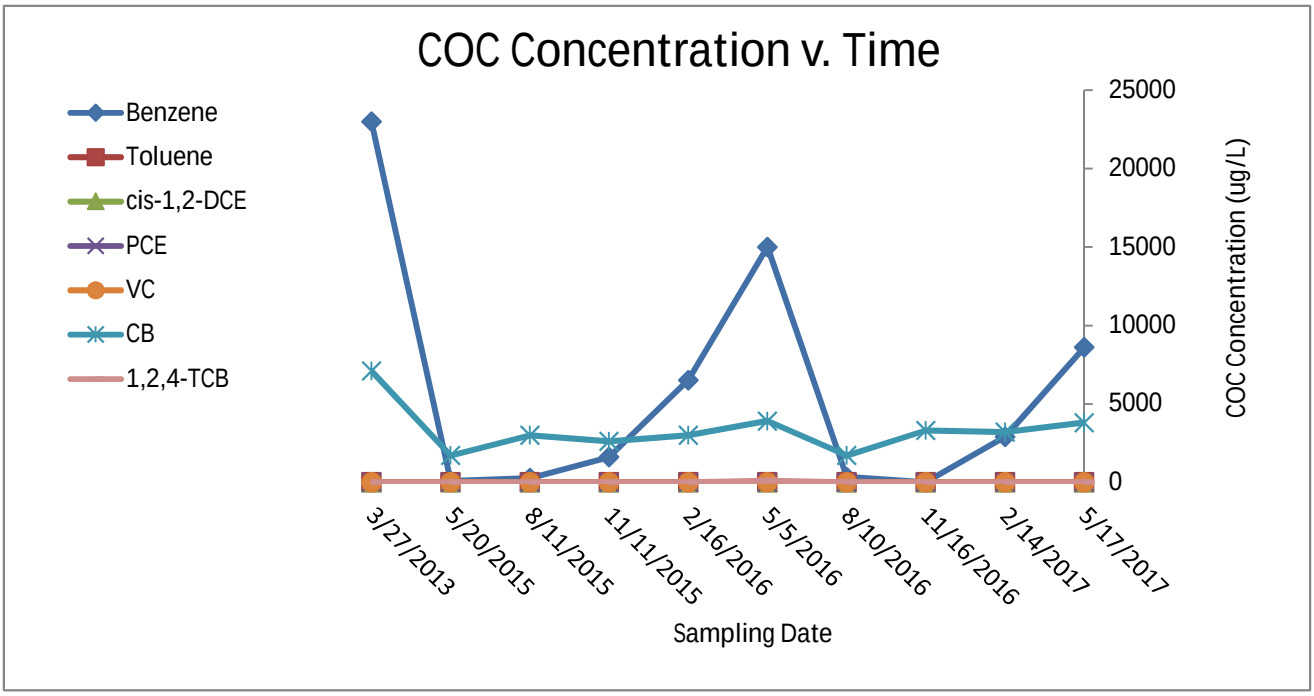
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-56										
Chemicals of Concern Data										
DATE	3/27/2013	5/20/2015	8/11/2015	11/11/2015	2/16/2016	5/5/2016	8/10/2016	11/16/2016	2/14/2017	5/17/2017
Benzene	23000	82	250	1600.0	6500	15000	330	ND	2900	8600
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CB	7100	1700	3000	2600	3000	3900	1700	3300	3200	3800
1,2,4-TCB	ND	ND	ND	ND	ND	91	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



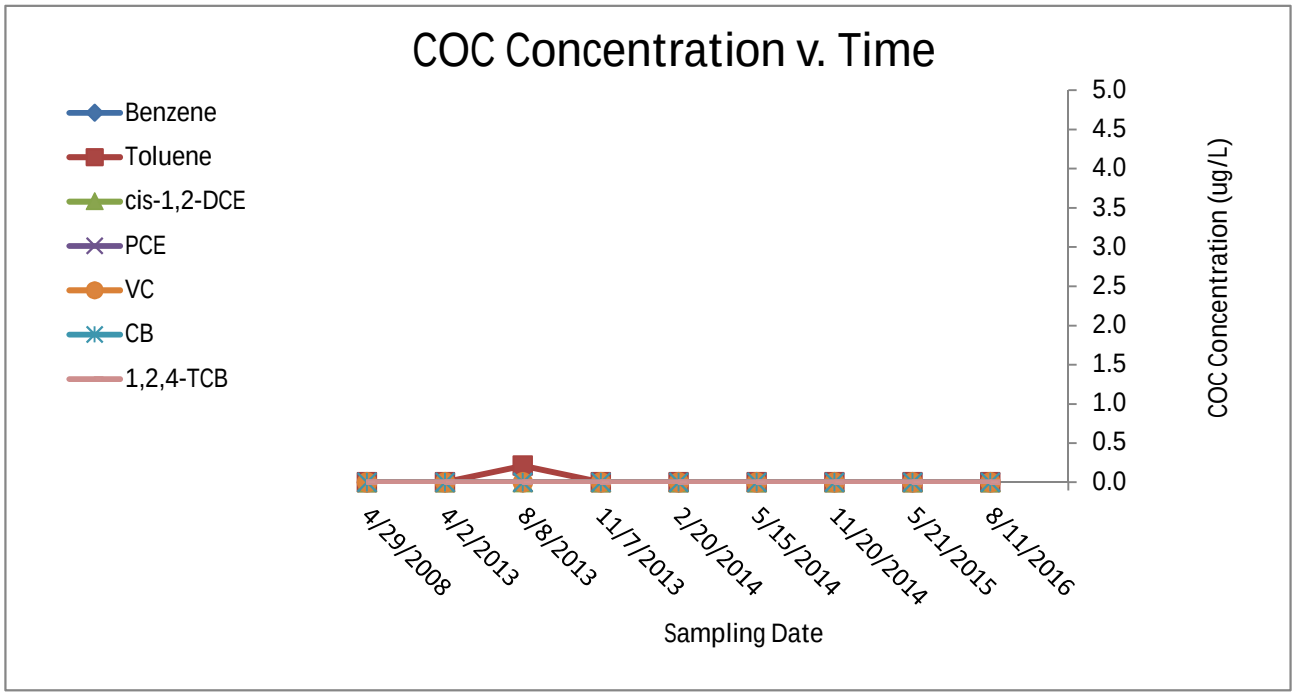
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-70										
Chemicals of Concern Data										
DATE	4/29/2008	4/2/2013	8/8/2013	11/7/2013	2/20/2014	5/15/2014	11/20/2014	5/21/2015	8/11/2016	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ND	ND	0.21	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CB	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



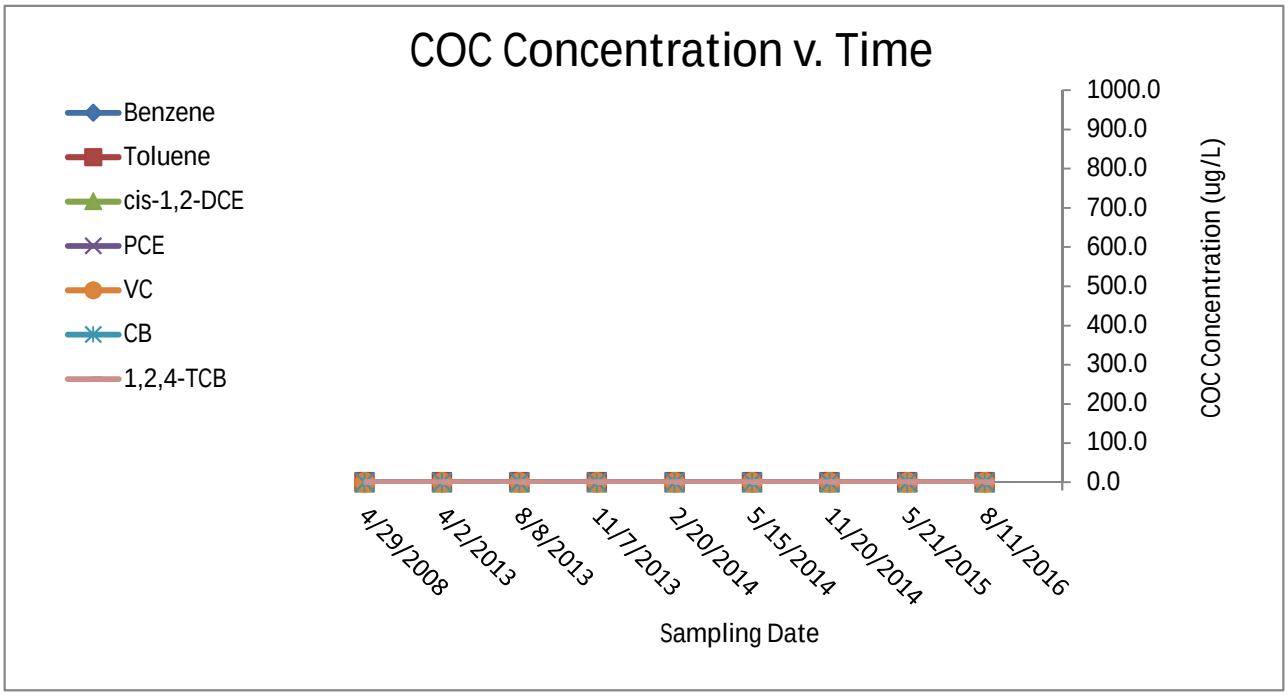
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-71										
Chemicals of Concern Data										
DATE	4/29/2008	4/2/2013	8/8/2013	11/7/2013	2/20/2014	5/15/2014	11/20/2014	5/21/2015	8/11/2016	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CB	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



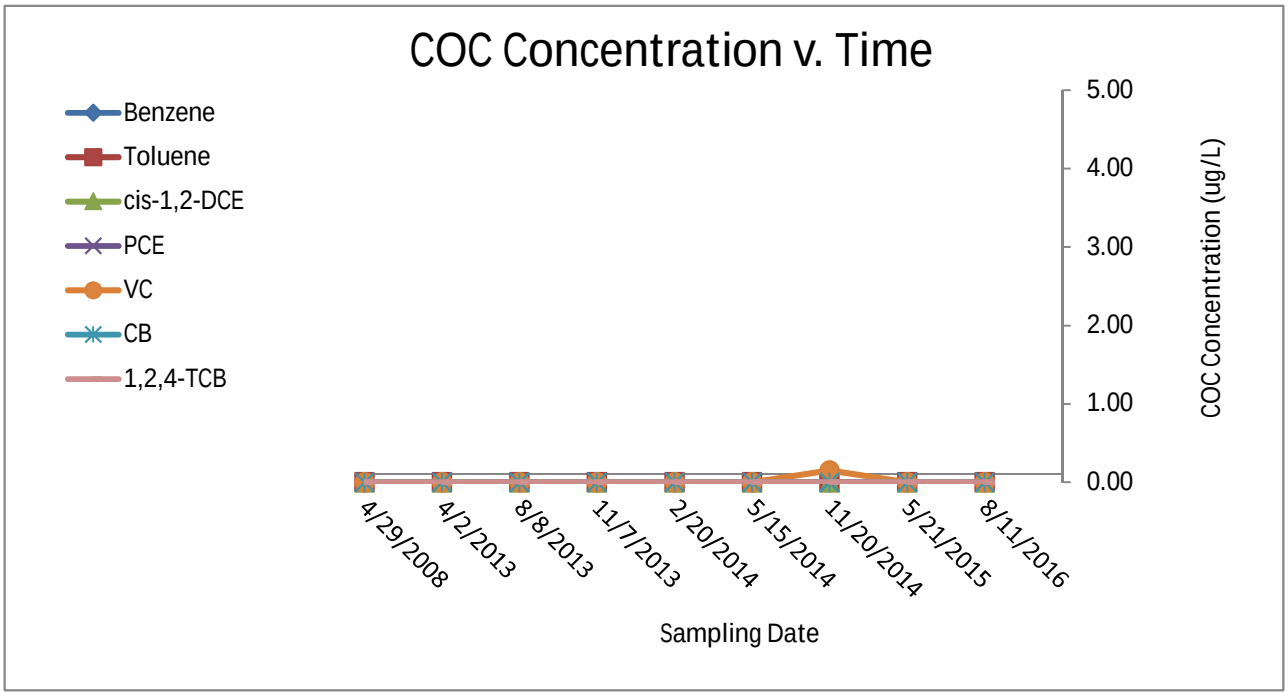
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-72										
Chemicals of Concern Data										
DATE	4/29/2008	4/2/2013	8/8/2013	11/7/2013	2/20/2014	5/15/2014	11/20/2014	5/21/2015	8/11/2016	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	0.15	ND	ND	
CB	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



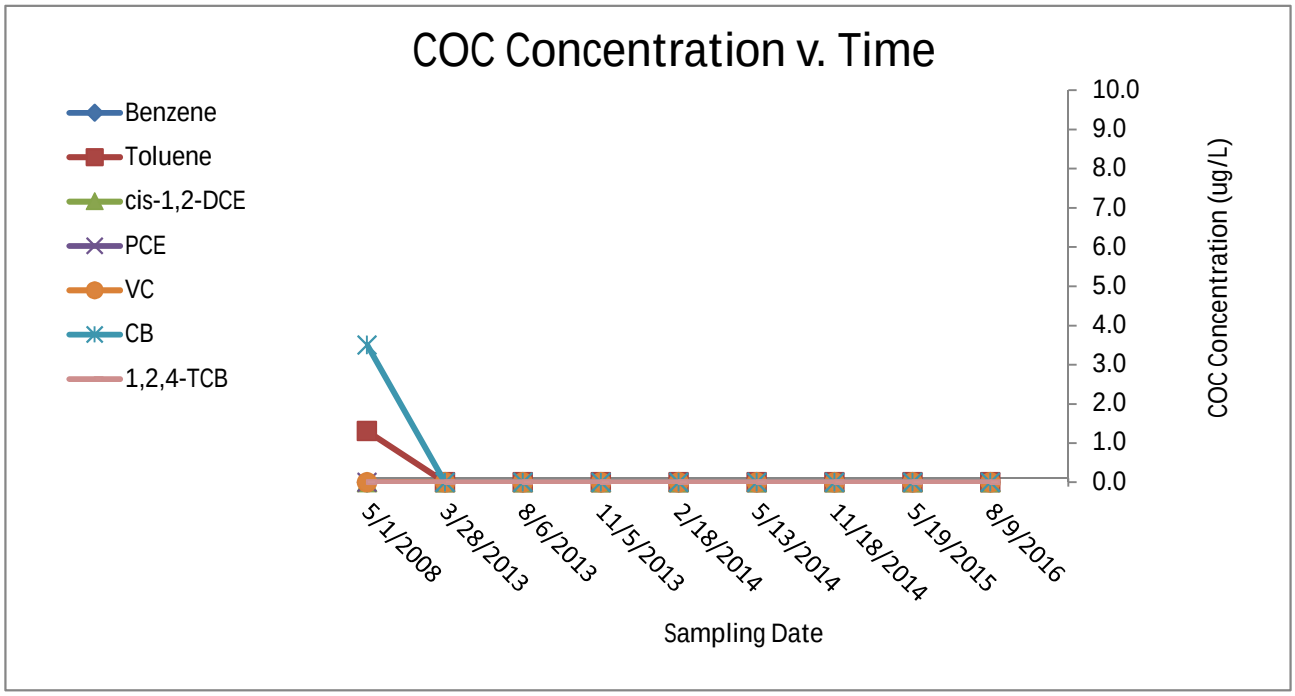
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-77										
Chemicals of Concern Data										
DATE	5/1/2008	3/28/2013	8/6/2013	11/5/2013	2/18/2014	5/13/2014	11/18/2014	5/19/2015	8/9/2016	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	1.3	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CB	3.5	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



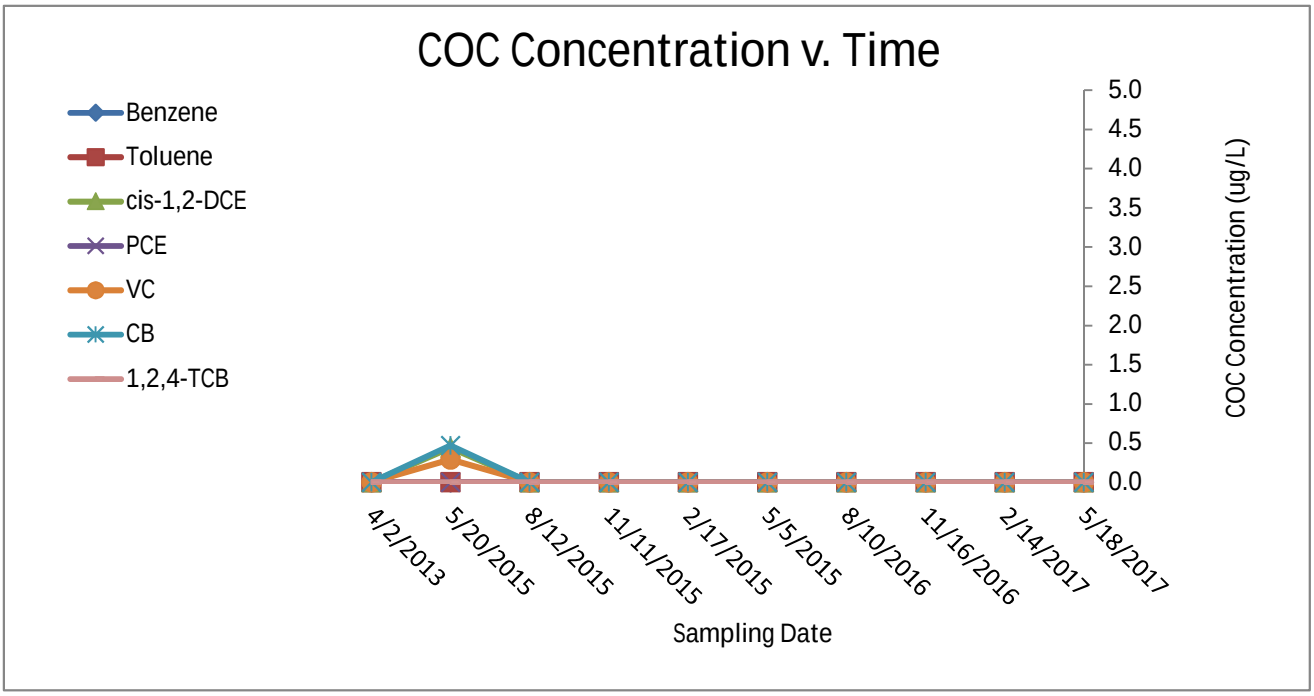
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-78										
Chemicals of Concern Data										
DATE	4/2/2013	5/20/2015	8/12/2015	11/11/2015	2/17/2015	5/5/2015	8/10/2016	11/16/2016	2/14/2017	5/18/2017
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	0.44	ND	ND	ND	ND	ND	ND	ND	ND
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND
CB	ND	0.47	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



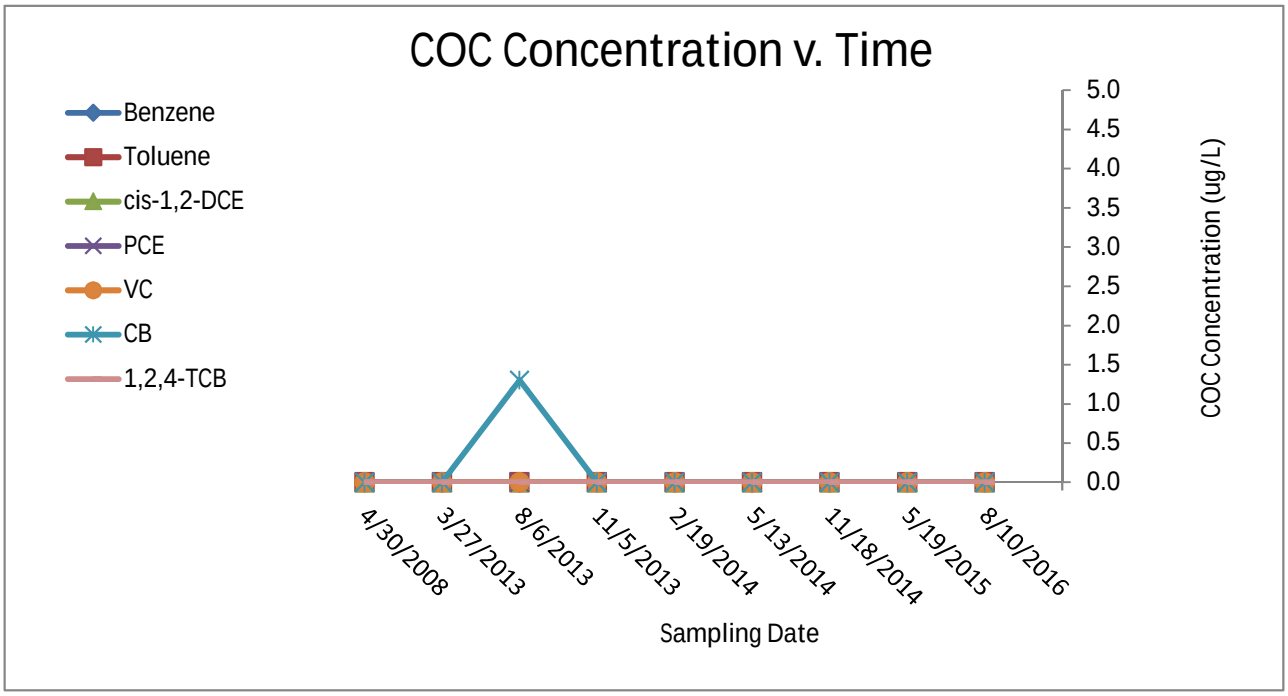
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-80										
Chemicals of Concern Data										
DATE	4/30/2008	3/27/2013	8/6/2013	11/5/2013	2/19/2014	5/13/2014	11/18/2014	5/19/2015	8/10/2016	
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CB	ND	ND	1.3	ND	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



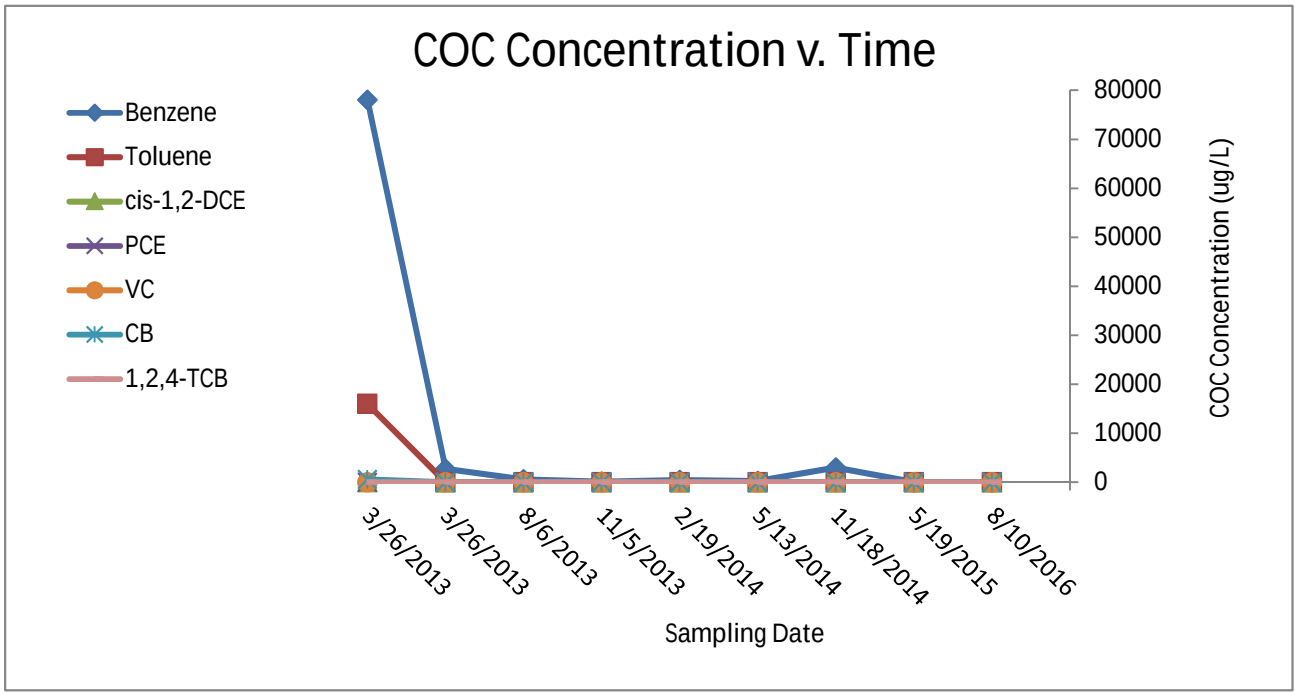
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-81										
Chemicals of Concern Data										
DATE	3/26/2013	3/26/2013	8/6/2013	11/5/2013	2/19/2014	5/13/2014	11/18/2014	5/19/2015	8/10/2016	
Benzene	78000	2700	550	99	460	240	3000	13.0	ND	
Toluene	16000	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-DCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	
VC	ND	ND	ND	ND	ND	ND	ND	ND	ND	
CB	590.0	ND	ND	6	ND	ND	ND	ND	ND	
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	

ND = Not Detected above the Reporting Limits



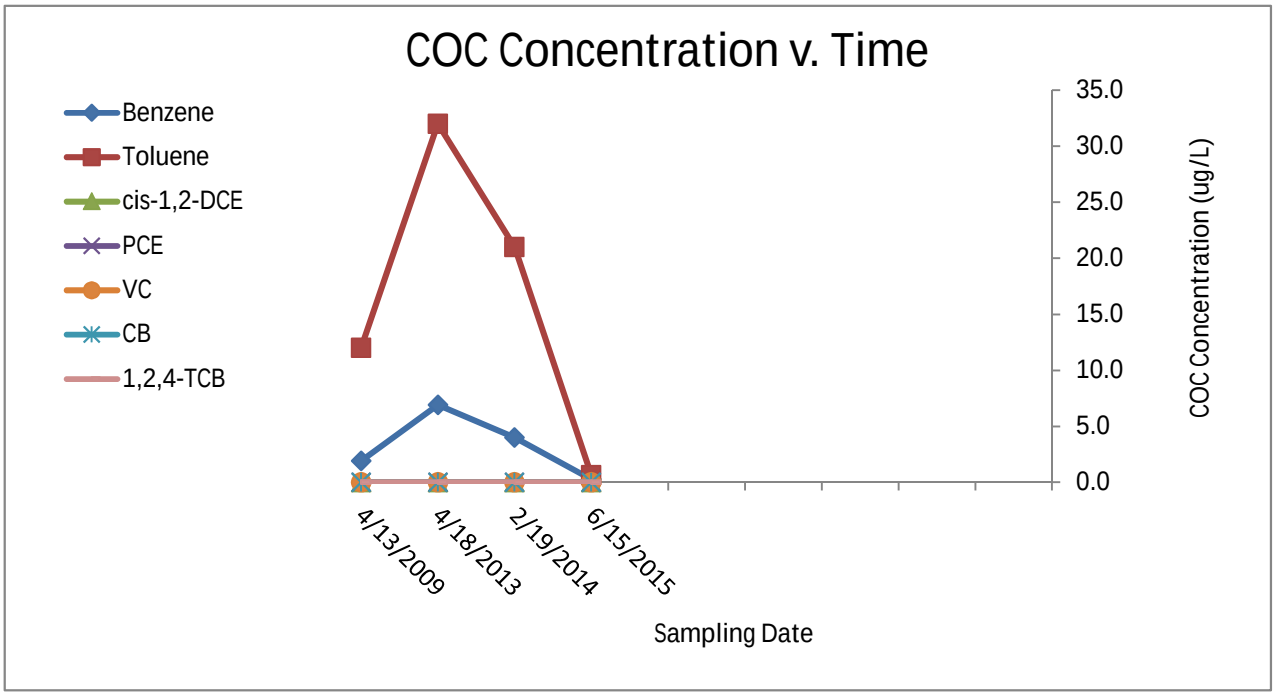
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-89										
Chemicals of Concern Data										
DATE	4/13/2009	4/18/2013	2/19/2014	6/15/2015						
Benzene	1.9	6.9	4.0	0.27						
Toluene	12	32	21	0.6						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						

ND = Not Detected above the Reporting Limits



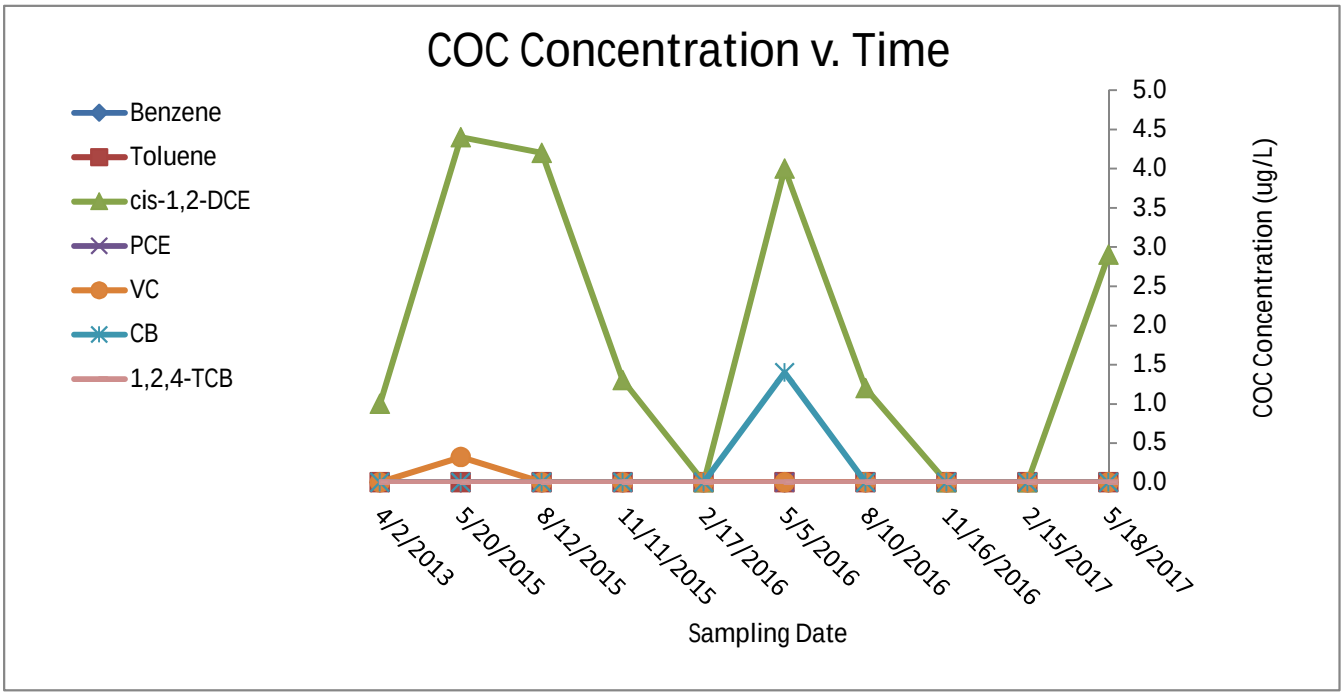
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Well ID MW-90										
Chemicals of Concern Data										
DATE	4/2/2013	5/20/2015	8/12/2015	11/11/2015	2/17/2016	5/5/2016	8/10/2016	11/16/2016	2/15/2017	5/18/2017
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	1.0	4.4	4.2	1.30	ND	4	1.2	ND	ND	2.9
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	0.32	ND	ND	ND	ND	ND	ND	ND	ND
CB	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND
1,2,4-TCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected above the Reporting Limits



CONCENTRATION VERSES TIME

Facility Name: Walter Coke
Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (ug/L)										
Effluent										
Chemicals of Concern Data										
DATE	8/12/2013	5/19/2015	8/11/2015	11/10/2015	2/17/2016	5/5/2016	8/11/2016	11/16/2016	2/15/2017	5/18/2017
Benzene	4000	8800	49	17.0	42	58	8.7	ND	2.4	22
Toluene	12000	50000	26	4.5	6.2	15	ND	ND	7.7	27
cis-1,2-DCE	ND	ND	10	12	ND	ND	1.3	ND	ND	1.5
PCE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VC	ND	ND	37	38	3.8	3.3	9	ND	3.1	7
CB	1400	4600	67	22	9.7	10	4	ND	7.4	19
1,2,4-TCB	ND	1.4	28	23	2.6	ND	ND	ND	ND	4.5