BOUNDARY REASSESSMENT PASSIVE SOIL VAPOR SAMPLING REPORT

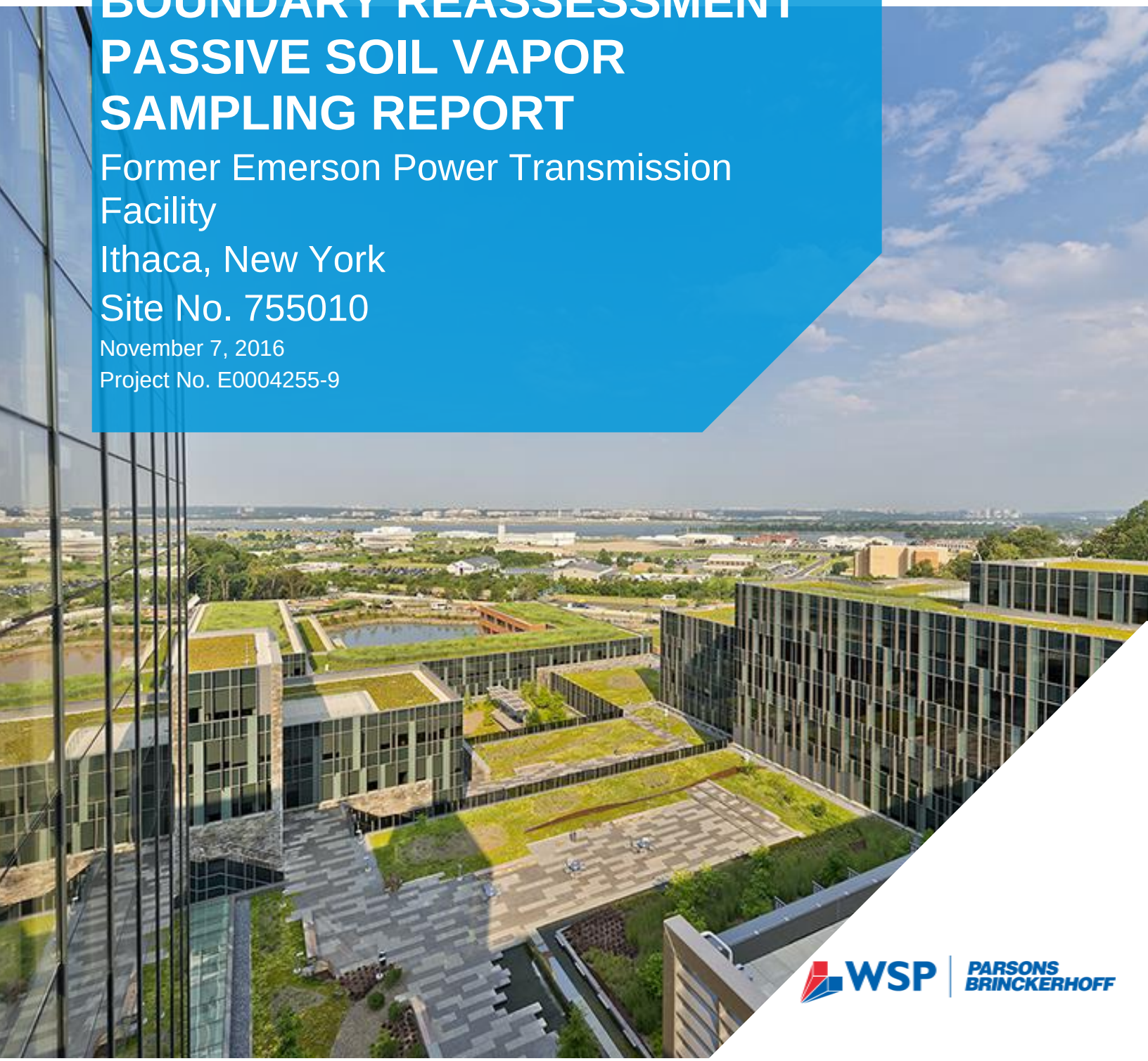
Former Emerson Power Transmission Facility

Ithaca, New York

Site No. 755010

November 7, 2016

Project No. E0004255-9



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Emerson Power Transmission Facility
Ithaca, New York
Site No. 755010

November 7, 2016

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1 Introduction

On behalf of Emerson, WSP USA Corp. (WSP) has prepared this Boundary Reassessment Passive Soil Vapor Sampling Report for the EMERSUB 15, LLC (formerly Emerson Power Transmission, or "EPT") property (Site #755010) in Ithaca, New York (Site; Figure 1). The report presents the results of soil vapor sampling conducted to support the removal of approximately 34 acres of undeveloped land on the south portion of the property, from the Site definition as: (1) set forth in the Order on Consent (Index #A7-0125-87-09) entered into by EPT and the New York State Department of Environmental Conservation (NYSDEC) on July 13, 1988, and Order on Consent Amendment executed on January 14, 2015, to name Emerson Electric Co ("Emerson") as the respondent responsible for remediation of the Site and implementation of the Order: (2) as applied under the Record of Decision (ROD) dated December 12, 1994, as Amended June 2009 ("Amended ROD"); and (3) as used for the Inactive Hazardous Waste Site Registry. This report includes the results of the soil vapor sampling conducted in 2005, 2007, 2015, and passive soil vapor sampling conducted in August 2016.

The sections below describe the background of soil vapor sampling conducted on the south portion of the Site, the sampling procedures, and a summary of the most recent results.

1.1 Background

A sanitary sewer extends approximately 2,700 feet from the southeast property boundary to the north-northeast and connects to the sewer line on South Aurora Street (Figure 2). The sewer was installed to serve the former National Cash Register (NCR) facility located to the south of the Site and is located within two easements granted to NCR. The easements extend 10 feet from the center line for a total width of 20 feet. There is also a sewer lateral that runs east from Ithaca College to the west onto the Site and connecting with the NCR sewer on the southern portion of the Site as shown on Figure 2. An easement for this lateral to the NCR sewer line benefits Ithaca College and extends 10 feet from the center line for a total width of 20 feet. All of the easements prevent structures from being placed over the easement areas.

1.1.1 2005 and 2007 Investigations

An investigation was conducted in 2005 to determine if volatile organic compounds (VOCs) were present in soil vapor directly above the northern portion of the NCR sewer line on the Site. While four samples (VP-18 to VP-21) were collected along the sewer line, only VP-21 is located within the boundary reassessment area (Figure 3). The sample from VP-21 contained three site-related VOCs (1,1,1-trichloroethane [1,1,1-TCA], trichloroethene [TCE], and methylene chloride) at concentrations of 5.21 micrograms per cubic meter (µg/m^3), 133 µg/m^3, and 6 µg/m^3, respectively, as shown in Figure 3.

A subsequent investigation was conducted in 2007 which focused on the southern portion of the NCR sewer in an effort to determine the source of the VOCs previously detected in soil vapor samples collected in 2005. Soil vapor samples were collected at three locations (SV-49, SV-50, and SV-51; Figure 3). The following VOCs were detected in one or more of the soil vapor samples: 1,1,1-TCA, tetrachloroethene (PCE), TCE, and cis-1,2-dichloroethene (cis-DCE) as shown on Figure 3. The highest concentrations of 1,1,1-TCA (291 µg/m^3), PCE (66.9 µg/m^3), and TCE (2,010 µg/m^3) were detected in the soil vapor sample collected at SV-51; this location was installed just north of the intersection of a sewer lateral which extends from South Aurora Street (east) to the NCR sewer (Figure 3). Lower concentrations of VOCs were detected in the samples from SV-49 and SV-50 with TCA ranging from 17.2 µg/$m^3$to 49.9 µg/m^3; PCE from 3.93 µg/m^3 to 23.4 µg/m^3, and TCE from 214 µg/m^3 to 232 µg/m^3. A trace level of cis-DCE was also detected in the sample at SV-50 (0.645 µg/m^3; Figure 3).

Results of these investigations were presented in a letter to the NYSDEC dated January 27, 2006 (Environmental Strategies Consulting 2006) and in the *Soil Vapor Testing Report* submitted to the NYSDEC on August 17, 2007 (WSP Environmental Strategies 2007). Of the seven soil vapor samples collected during both investigations, four locations within the boundary reassessment area contained site-related VOCs (VP-21 in 2005 and SV-49, SV-50, and SV-51 in 2007).

1.1.2 2015 Investigations

Additional soil vapor investigations were conducted in April and November 2015; the results were reported in the *Boundary Reassessment Soil Vapor Sampling Report* submitted to the NYSDEC on March 1, 2016 (WSP 2016).

In April 2015, a total of 30 soil vapor points were installed along the NCR sewer in a grid pattern adjacent to historical sampling points VP-21, SV-49, and SV-51. The SV-51 and SV-49 probes each consisted of two groups of six points, located to the east and west of the NCR Sewer, respectively. Six soil vapor probes were installed to the east of former point VP-21; however, none were installed to the west as it is outside the boundary reassessment area. Because numerous sample locations were saturated in April 2015, only five soil vapor samples (SV-51-2, SV-51-3, SV-51-4, SV-51-9, and SV-51-11) and two duplicate samples were collected and analyzed for VOCs. A repeat sampling event was conducted in November 2015, where a total of 25 soil vapor samples and 2 duplicate samples were collected and analyzed for VOCs. The results are presented on Figure 4.

1.1.2.1 April 2015 Results

In April 2015, the soil vapor samples collected near SV-51 contained 1,1,1-TCA at concentrations ranging from 1.4 µg/m^3 to 200 µg/m^3, PCE at concentrations ranging from non-detect to 3.3 µg/m^3, and TCE at concentrations ranging from non-detect to 33 µg/m^3 (Figure 4). As noted above, no samples were collected near the SV-49 or SV-21 areas due to saturated conditions.

1.1.2.2 November 2015 Results

In November 2015, site-related VOCs were not detected above method detection limits in 3 of the 11 soil vapor samples collected in the vicinity of former location SV-49 (SV2-49-2, SV2-49-6, and SV2-49-9). Several VOCs (1,1,1-TCA, PCE, TCE, and vinyl chloride) were detected in the samples collected from one or more of the remaining eight sampling points. No distinct spatial trends are evident in the sampling results from the SV-49 area (Figure 4).

Each of the 11 samples surrounding the SV-51 location contained one or more site-related VOCs (1,1,1-TCA, PCE, TCE, cis-DCE, and vinyl chloride) at concentrations above the method detection limits (Figure 4). In general, VOC concentrations decreased with distance from the sewer; however, the highest total site-related VOC concentrations were detected in the furthest southeast sample (SV2-51-12; Figure 4).

Three soil vapor samples were collected near VP-21 in November 2015. Methylene chloride was detected in sample VP2-21-3 at a concentration of 0.9 µg/m^3. No other site-related VOCs were detected in the remaining two soil vapor samples (Figure 4). No samples were collected along the west side of the NCR Sewer easement near VP-21 as this area abuts the edge of the boundary reassessment area.

The sampling results showed that VOC concentrations declined with distance from the NCR sewer, with the exception of location SV2-51-12. The location of SV2-51-12 is near the juncture with the sewer lateral which extends east from Ithaca College (Figure 4). The NYSDEC and the New York Department of Health (NYSDOH) reviewed the 2015 sampling results and requested additional delineation to the east and south of soil vapor point SV2-51-12 (Figure 3).

2 Soil Vapor Sampling Activities

In August 2016, 17 Amplified Geochemical Imaging (AGI) Universal Passive Samplers (formerly known as GORE-SORBER™) and 2 traditional soil vapor probes were installed near former sample location SV2-51-12; one passive soil vapor sample (SV3-51-12) was collected near the original sample location to confirm previous results. The samples were laid out in a grid pattern moving outward at 20 foot intervals from the original sample location SV2-51-12, toward the sewer lateral as shown on Figure 5.

The soil vapor survey activities were completed in general accordance with the procedures provided in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, and with the Revised Boundary Reassessment Work Plan (Work Plan; WSP 2015), which was approved by the NYSDEC on January 29, 2015. All sampling activities were conducted in accordance with WSP's standard operating procedures (SOPs). All field activities were conducted using cleaned equipment; decontamination of non-disposable equipment was conducted in accordance with WSP's SOPs and manufacturer's specifications. Underground lines were located and marked by utility locators prior to beginning any intrusive work. The elevations of the soil vapor sampling locations were surveyed by a New York-licensed surveyor to the nearest ± 0.01-foot, and the horizontal locations were measured to the nearest ± 0.1-foot.

2.1 Passive Soil Vapor Sampling Procedures

The passive soil vapor samplers were installed on August 1, 2016. The samplers consisted of separate passive sorbent collection units ("sorbers"). The sorbers are sheathed in a vapor permeable retrieval cord looped at the top. The loop is used as a means of tying the sampler to a string for installation and retrieval. The retrieval cord and the sorbers are constructed of an inert, hydrophobic, microporous expanded polytetrafluoroethene membrane. The microporous structure of the membrane allows vapors to move freely across the membrane and onto the sorbent material while protecting it from physical contact with soil particulates and water.

At each passive soil vapor sample point, the vegetation was cleared, as needed, and, a pilot hole was advanced up to 29 inches below ground surface (bgs; Table 1) using a narrow steel rod and a mallet. After the pilot hole was completed, a sorber was tied to a section of cord and inserted into the hole using a steel insertion rod. The cord was secured at the ground surface by collapsing the hole around the sorber and string. The sorber's location, time and date of emplacement, and other relevant information was recorded in the field book. Quality assurance/quality control (QA/QC) samples including one duplicate sample (PSG-99) collected at location SV3-51-12 and a trip blank (TB080916), were collected in accordance with WSP's SOPs.

On August 9, 2016, the sorbers were removed from the boreholes. The sorbers were placed in the appropriate laboratory-provided containers, labeled, and handled under strict chain-of-custody procedures. The passive soil vapor samples, including the associated QA/QC samples, were shipped to AGI laboratory in Newark, Delaware, under ambient conditions, and were analyzed for VOCs using thermal desorption-gas chromatography/mass spectrometry instrumentation to target PCE, TCE, vinyl chloride, and 1,1,1-TCA, following U.S. Environmental Protection Agency Test Method 8260C.

2.2 Traditional Soil Vapor Sampling Procedures

Two soil vapor samples (SV3-51-1 and SV3-51-2; Figure 5) were collected on August 9, 2016, using traditional soil vapor probe installation and collection methods described in WSP's March 1, 2016, *Boundary Reassessment Report* (WSP 2016). The probes were installed using a hammer drill to bedrock refusal which occurred at depths of approximately 18 inches bgs (SV3-51-1) and 26 inches (SV3-51-2; Table 2). Following installation, the tubing was clamped to avoid discharging vapor to the air.

Initially, the sample probe and sample train (tubing, connectors, valves, etc.) were purged to remove ambient air from each of the probes. Purging was accomplished by connecting a hand-powered air pump to the soil vapor discharge tubing. A "low-flow" purge rate (a maximum of 200 milliliters per minute) was maintained to avoid potential short-circuiting or desorbing volatile compounds from soil particles. A minimum of 3 tubing/probe volumes

was purged from the sampling assembly prior to sample collection. Purged vapor from the probe was contained in Tedlar® bags to prevent the release of soil vapor into the air. Soil vapor samples were collected over a 1-hour period using laboratory supplied 1-liter Entech-style stainless steel canisters. QA/QC samples, including one duplicate sample (SV3-99-2) collected at location SV3-51-2 and one trip blank (TB-080916), were collected in accordance with WSP's SOPs.

After 1 hour, the canister valves were closed and the regulator was disconnected. The final ambient conditions at the sample location were recorded. The canisters were couriered to Centek Laboratory in Syracuse, New York, under strict chain-of-custody procedures for analysis of VOCs using U.S. Environmental Protection Agency Method TO-15. Following completion of sampling activities, the sampling probe materials were removed and the boreholes were backfilled with soil.

3 Sampling Results

The analytical results for the passive and traditional soil vapor samples are presented in Tables 1 and 2 and on Figure 5. The laboratory data, including quality assurance/quality control data, are provided in Appendix A.

There are no direct comparative criteria for soil vapor (NYSDOH 2006). Results for the following site-related VOCs are discussed below:

- 1,1,1-TCA
- 1,2-dichloroethane
- cis-DCE
- Methylene chloride
- PCE
- trans-1,2-dichloroethene
- TCE
- Vinyl chloride

3.1.1 Passive Soil Vapor Sampling Results

The passive soil vapor samples produce qualitative results reported in micrograms (µg). The results are summarized in Table 1 and distribution maps of three site-related VOCs (1,1,1-TCA, PCE, and TCE), prepared by AGI, are presented in Appendix B.

Three site-related VOCs (1,1,1-TCA, PCE, and TCE) were detected in the passive soil vapor samplers. 1,1,1-TCA was detected in 8 of the 17 passive samplers at masses ranging from 0.02 µg (SV3-51-12) to 0.23 µg (PSG-16). PCE was detected in the samplers collected at PSG-13 (0.04 µg) and PSG-16 (0.05 µg). The sample collected at PSG-16 also contained TCE at 0.66 µg (Table 1).

3.1.2 Traditional Soil Vapor Sampling Results

In August 2016, site-related VOCs were detected above method detection limits in both of the traditional soil vapor samples. Soil vapor sample SV3-51-1 contained 1,1,1-TCA (1.1 µg/m^3), PCE (1.9 µg/m^3), TCE (8.1 µg/m^3), methylene chloride (66 µg/m^3), and cis-DCE (1.5 µg/m^3) (Table 1). The soil vapor sample collected at SV3-51-2 contained 1,1,1-TCA (41 µg/m^3), PCE (3.3 µg/m^3), TCE (8.5 µg/m^3), cis-DCE (1.1 µg/m^3), and methylene chloride (40 µg/m^3) (Table 1).

3.2 Summary

The passive soil vapor samples were installed to further delineate VOCs in soil vapor in the subsurface near previous traditional soil vapor sample location SV2-51-12. Seventeen passive samplers and two traditional soil vapor points were installed in a grid pattern moving outward from the SV2-51-2 location and toward the sewer lateral. 1,1,1-TCA (0.02 µg) was measured in passive sampler SV3-51-12 collected at the same location as the previous traditional soil vapor sample SV2-51-12 (November 2015; Figure 3); however, 1,1,1-TCA was not present in the duplicate passive sampler (PSG-99). PCE and vinyl chloride, which were detected in the traditional soil vapor sample SV2-51-12 in November 2015 (Figure 3), were not detected in the recent passive soil vapor sample SV3-51-12 (Table 1).

The highest VOC mass (shown on maps in Appendix B) was detected in the passive soil vapor sample collected near the juncture of the sewer lateral location (PSG-16; Appendix B). TCE, PCE, and 1,1,1-TCA were detected in the passive samplers. TCE was only detected at one location (PSG-16) adjacent to the sewer lateral (within 20 feet of the centerline), PCE was only detected at two locations (PSG-13 and PSG-16) near the sewer lateral (both within 20 feet of the centerline), and 1,1,1-TCA was detected along the sewer lateral and at three other locations. The 1,1,1-TCA mass measured in the passive samplers increased slightly at a distance approximately 90 feet from

the sewer; however the traditional soil vapor sample concentrations decreased with distance from the sewer. The passive soil vapor samplers provided delineation of the site-related VOCs moving away from the sewer near location SV2-51-12.

The highest concentrations of VOCs detected in the traditional samples have consistently been from the sampling locations located directly above the sewer line in the middle of the easement with only exception to this (SV-51-12) for TCA and PCE. Specifically, soil gas concentrations from various sampling areas identified the following for TCE:

- SV-21 Area - The sample above the sewer in 2005 identified TCE at 133 µg/m^3 and samples on the edge of and outside the sewer easement area in 2015 were non-detect for TCE.
- SV-49 Area - The sample from above the sewer in 2007 identified TCE at 232 µg/m^3 and samples on the edge of the easement area identified an order of magnitude or higher decrease (concentrations of non-detect to 7.4 µg/m^3) and a further decrease was noted for samples outside the easement area (non-detect to 1.5 µg/m^3).
- SV-51 Area - The sample above the sewer in 2007 identified TCE at 2,010 µg/m^3 and samples on the edge of the easement area were an order of magnitude lower outside the easement area (non-detect to 260 µg/m^3).

As noted above, one exception to this trend was TCA and PCE around the SV-51 area. These compounds noted higher concentrations in the 2015/2016 traditional soil gas sampling in 2 of the 11 samples for TCA and 1 of 11 samples for PCE in samples collected outside the easement area compared to on top of the sewer in 2007. However, the passive soil gas sampling provided delineation of this area for these compounds and as shown in the contaminant contouring in Appendix B, the concentrations reduce significantly with distance from the sewer.

While there are no standards for soil vapor, the NYSDOH Guidance for Evaluation of Soil Vapor Intrusion in the State of New York (October, 2006) suggests results can be compared to the NYSDOH indoor air guidelines. USEPA guidance (EPA's Vapor Intrusion Database: Evaluation and Characterization of Attenuation Factors for Chlorinated Volatile Organic Compounds and Residential Buildings, EPA 530-R-10-002, March 2012) indicates that applying an attenuation factor of 0.001 to predict potential indoor air concentrations for shallow soil gas concentrations is a conservative (biased towards being protective) approach when evaluating soil vapor. Applying a factor of 0.001 to the concentrations detected in each soil gas sample collected from outside the easement area yields potential indoor air concentrations at least an order of magnitude lower than the NYSDOH indoor air guidelines for PCE, TCE and methylene chloride (30, 2, and 60 µg/m3, respectively).

Based on the investigation results described herein and described in the Boundary Reassessment Reports dated July 21, 2015, and March 1, 2016, EMERSUB 15, LLC and Emerson Electric Co. will be requesting that the Site boundary be modified to remove 34 acres of undeveloped land on the south portion of the property from the Site definition, as provided in the Order on Consent, the Administrative Record of Decision, and the Registry of Inactive Hazardous Waste Sites, except those portions of land within that area subject to the two NCR sewer easements and the Ithaca College sewer easement. These three sewer easement areas would remain as part of the Site definition. The request will be made consistent with the provisions of Order on Consent Index #A7-0125-8-09.

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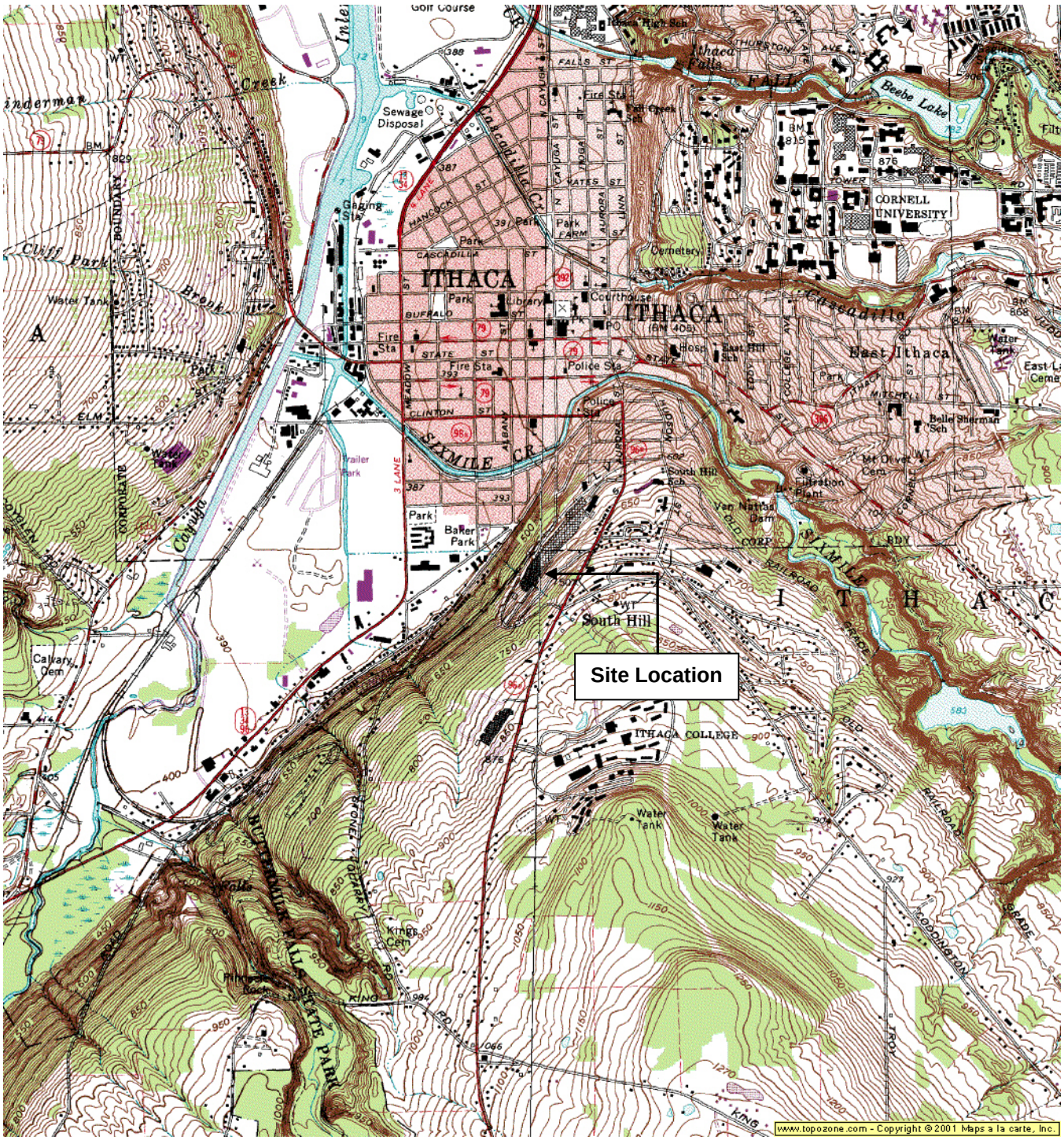
5 Acronyms

bgs	below the ground surface
cis-DCE	cis-1,2-dichloroethene
EPT	Emerson Power Transmission
µg	micrograms
µg/m^3	micrograms per cubic meter
NCR	National Cash Register
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	tetrachloroethene
SOPs	standard operating procedures
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethene
VOCs	volatile organic compounds

Figures



Reference
7.5 Minute Series Topographic Quadrangle
Ithaca East, New York
Photorevised 1976 Scale 1:25,000 Metric

N

Quadrangle Location

Scale in Meters
0 500 1000
0 1000 2000
Scale in Feet

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Figure 1
Site Location
Former Emerson Power Transmission
Ithaca, New York

R:\ACAD\CADD\00004255-Ithaca\CAD\00004255-076.dwg 10/31/2016 1:56 PM User01012

LEGEND

- 34 BUILDING NUMBER
- PROPOSED EASEMENT FOR NGR SEWER SANITARY SEWER
- PROPOSED NEW BOUNDARY FOR SITE NO. 755010 (OPERABLE UNIT 2)
- AREA PROPOSED FOR REMOVAL FROM SITE NO. 755010 (34.02 ACRES)
- PROPOSED BOUNDARY FOR OU-1
- SLOPES GREATER THAN 20%

00004255-076	Drawing Number	FIGURE 2	

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SITE LAYOUT

FORMER EMERSON POWER TRANSMISSION
ITHACA, NEW YORK
PREPARED FOR
EMERSON

DRAWN BY	EGC	
CHECKED	CBM	9/30/2016
APPROVED		

SEAL

DATE

REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

NOTES:

1. ONLY SOIL GAS SAMPLING RESULTS IN THE PROPOSED BOUNDARY REASSESSMENT AREAS ARE PRESENTED.
2. HISTORICAL SAMPLING DEPTHS OF 3–4 FEET BELOW THE GROUND SURFACE.
3. ONLY SITE–RELATED VOC RESULTS ARE PRESENTED (TCE, 1,2–DCA, PCE, TCE, cis–DCE, trans–DCE, VINYL CHLORIDE, AND METHYLENE CHLORIDE).

LEGEND FOR SAMPLING DATA

TCA	1,1,1–TRICHLOROETHANE
cis–DCE	cis–1,2–DICHLOROETHENE
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHENE
ug/m^3	MICROGRAMS PER CUBIC METER
J	ESTIMATED
U	NOT DETECTED

LEGEND

- SANITARY SEWER
- PROPOSED NEW BOUNDARY FOR SITE NO. 755010
- AREA PROPOSED FOR REMOVAL FROM SITE NO. 755010 (34.02 ACRES)
- PROPOSED EASEMENT FOR NCR SEWER
- PROPERTY BOUNDARY
- SV-49 HISTORICAL SOIL GAS SAMPLE

50 0 50 100
SCALE, FEET

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK & WHITE REPRODUCTION MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

D

REVISIONS
REV | DESCRIPTION | Revised: | Chkd: | Appr:

SEAL | DATE

DRAWN BY
CHECKED
APPROVED

SOIL VAPOR SAMPLE RESULTS 2005 AND 2007

EMERSON POWER TRANSMISSION
ITHACA, NEW YORK

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

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Herndon, Virginia 20171
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FIGURE 3

Drawing Number
00004255–073

NOTES:

1. ONLY SOIL GAS SAMPLING RESULTS IN THE PROPOSED BOUNDARY REASSESSMENT AREAS ARE PRESENTED.
2. HISTORICAL SAMPLING DEPTHS OF 3–4 FEET BELOW THE GROUND SURFACE.
3. ONLY SITE-RELATED VOC RESULTS ARE PRESENTED (TCE, 1,2-DCA, PCE, TCE, cis-DCE, trans-DCE, VINYL CHLORIDE, AND METHYLENE CHLORIDE).

LEGEND FOR SAMPLING DATA

TCA	1,1,1-TRICHLOROETHANE
cis-DCE	cis-1,2-DICHLOROETHENE
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHENE
VC	VINYL CHLORIDE
ug/m³	MICROGRAMS PER CUBIC METER
J	ESTIMATED
ND	SITE-RELATED VOCs WERE NOT DETECTED

LEGEND

- SANITARY SEWER
- PROPOSED NEW BOUNDARY FOR SITE NO. 755010
- AREA PROPOSED FOR REMOVAL FROM SITE NO. 755010 (34.02 ACRES)
- PROPOSED EASEMENT FOR NCR SEWER
- PROPERTY BOUNDARY
- SV-49 HISTORICAL SOIL GAS SAMPLE
- SV2-49-12 SOIL GAS POINT
- SV2-49-10 SOIL GAS POINT NOT COLLECTED DUE TO WET CONDITIONS

N

D

50 0 50 100
SCALE, FEET

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REVISIONS
REV | DESCRIPTION

SEAL | DATE

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CHECKED
APPROVED

APRIL AND NOVEMBER 2015 BOUNDARY REASSESSMENT SOIL VAPOR SAMPLE RESULTS

EMERSON POWER TRANSMISSION
ITHACA, NEW YORK

PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

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FIGURE 4

Drawing Number
00004255-074

LEGEND

SANITARY SEWER

PROPOSED NEW BOUNDARY FOR SITE NO. 755010

AREA PROPOSED FOR REMOVAL FROM SITE NO. 755010 (34.02 ACRES)

PROPOSED EASEMENT FOR NCR SEWER

PROPERTY BOUNDARY

SV-49 HISTORICAL SOIL GAS SAMPLE

SV2-49-12 SOIL GAS POINT

SV2-49-10 SOIL GAS POINT NOT COLLECTED DUE TO WET CONDITIONS

PASSIVE SOIL GAS SAMPLE

LEGEND FOR SAMPLING DATA

TCA	1,1,1–TRICHLOROETHANE
cis–DCE	cis–1,2–DICHLOROETHENE
MC	METHYLENE CHLORIDE
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHENE
VC	VINYL CHLORIDE
ug/m^3	MICROGRAMS PER CUBIC METER

NOTE:

ONLY SITE–RELATED VOC RESULTS ARE PRESENTED (TCE, 1,2–DCA, PCE, TCE, cis–DCE, trans–DCE, VINYL CHLORIDE, AND METHYLENE CHLORIDE).

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A PROFESSIONAL. DO NOT ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF WSP USA CORP.

0 60 120
SCALE IN FEET

B

Drawn By: EGC
Checked: CBM 11/2/2016
Approved:
DWG Name: 00004255–075

EMERSON POWER TRANSMISSION
ITHACA, NEW YORK
PREPARED FOR
EMERSON
ST. LOUIS, MISSOURI

Figure 5
SOIL GAS SAMPLING LOCATIONS
AUGUST 2016

PARSONS BRINCKERHOFF
WSP USA Corp.
13530 Dulles Technology Drive, Suite 300
Herndon, Virginia 20171
(703) 709-6500
www.wspgroup.com/usa

R:\ACAD\CADD\00004255-IthacaCAD\00004255-075.dwg 11/2/2016 12:40 PM Usec01012

Tables

Table 1

Passive Soil Vapor Sampling Results - August 2016
Former EPT Facility
Ithaca, New York (a)

Sample Identification:	SV3-51-12 (b)	PSG-99 (b)	PSG-1	PSG-2	PSG-3	PSG-4	PSG-5	PSG-6
Sample Depth (inches bgs):	22	22	22	18	18	24	16.5	17
Sample Date:	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16
Site-Related VOCs (ug)								
1,1,1-Trichloroethane	0.02	0.02 U	0.07	0.02 U	0.02 U	0.05	0.02 U	0.02 U
1,1-Dichloroethane	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cis-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Tetrachloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
trans-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Trichlorothene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Vinyl Chloride	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
VOCs (ug)								
1,2,4-Trimethylbenzene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
m,p-Xylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Octane	0.02 U	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
o-Xylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Tridecane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Undecane	0.05 U	0.13	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.38
Total Petroleum Hydrocarbons	1.09	2.26	2.10	0.50 U	0.50 U	6.66	0.56	0.72

Table 1

Passive Soil Vapor Sampling Results - August 2016
Former EPT Facility
Ithaca, New York (a)

Sample Identification:	PSG-7	PSG-8	PSG-9	PSG-10	PSG-11	PSG-12	PSG-13	PSG-14
Sample Depth (inches bgs):	15	19	19	16	21	29	26	17
Sample Date:	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16
Site-Related VOCs (ug)								
1,1,1-Trichloroethane	0.02 U	0.05	0.04	0.02 U	0.02 U	0.03	0.19	0.02 U
1,1-Dichloroethane	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cis-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Tetrachloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.04	0.02 U
trans-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Trichlorothene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Vinyl Chloride	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
VOCs (ug)								
1,2,4-Trimethylbenzene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
m,p-Xylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Octane	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
o-Xylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Tridecane	0.10	0.05 U	0.05 U	0.05 U	0.16	0.05 U	0.05 U	0.05 U
Undecane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Total Petroleum Hydrocarbons	0.50 U	0.50 U	0.50 U	0.50 U	0.85	0.50 U	0.50 U	0.59

Table 1

Passive Soil Vapor Sampling Results - August 2016
Former EPT Facility
Ithaca, New York (a)

Sample Identification:	PSG-15	PSG-16	TB080916 (c)
Sample Depth (inches bgs):	16.5	21	NA
Sample Date:	08/09/16	08/09/16	08/09/16
Site-Related VOCs (ug)			
1,1,1-Trichloroethane	0.02 U	0.23	0.02 U
1,1-Dichloroethane	0.02 U	0.02 U	0.02 U
cis-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U
Tetrachloroethene	0.02 U	0.05	0.02 U
trans-1,2-Dichloroethene	0.02 U	0.02 U	0.02 U
Trichlorothene	0.02 U	0.66	0.02 U
Vinyl Chloride	0.20 U	0.20 U	0.20 U
VOCs (ug)			
1,2,4-Trimethylbenzene	0.02 U	0.03	0.02 U
m,p-Xylene	0.02 U	0.10	0.02 U
Octane	0.02 U	0.02 U	0.02 U
o-Xylene	0.02 U	0.03	0.02 U
Tridecane	0.05 U	0.05 U	0.05 U
Undecane	0.05 U	0.05 U	0.05 U
Total Petroleum Hydrocarbons	0.50 U	0.64	0.50 U

a/ bgs = below the ground surface, ug = micrograms, VOCs = volatile organic compounds; NA = not applicable; U = not detected.
b/ Sample and duplicate.
c/ Trip Blank.

Table 2

Traditional Soil Vapor Sampling Results - August 2016
Former EPT Facility
Ithaca, New York (a)

Sample Identification:	SV3-51-1	SV3-51-2 (b)	SV3-99-2 (b)	TB080916 (c)
Sample Depth (inches bgs):	18	26	26	NA
Sample Date:	08/09/16	08/09/16	08/09/16	08/09/16
Site-Related VOCs (ug/m^3)				
1,1,1-Trichloroethane	1.1	41	43	0.82 U
1,2-Dichloroethane	0.61 U	0.61 U	0.61 U	0.61 U
cis-1,2-Dichloroethene	1.5	1.1	1.2	0.59 U
Methylene chloride	66	40	42	0.52 U
Tetrachloroethylene	1.9	3.3	3.8	1 U
trans-1,2-Dichloroethene	0.59 U	0.59 U	0.59 U	0.59 U
Trichloroethene	8.1	8.5	8.8	0.81 U
Vinyl chloride	0.38 U	0.38 U	0.38 U	0.38 U
VOCs (ug/m^3)				
1,2,4-Trimethylbenzene	15	18	18	0.74 U
1,3,5-Trimethylbenzene	6.8	8.4	9	0.74 U
4-ethyltoluene	5.6	6.7	6.5	0.74 U
Acetone	58	84	120	0.71 U
Benzene	4.7	4.8	4.5	0.48 U
Cyclohexane	12	4.5	4.3	0.52 U
Ethyl acetate	0.9 U	0.9 U	1.2	0.9 U
Ethylbenzene	16	12	13	0.65 U
Freon 11	0.96	1.3	1.1	0.84 U
Freon 113	1.1 U	2.5	2.5	1.1 U
Freon 12	1.5	1.6	0.74 U	0.74 U
Heptane	59	29	31	0.61 U
Hexane	48	0.53 U	18	0.53 U
Isopropyl alcohol	0.37 U	0.37 U	12	0.37 U
m&p-Xylene	88	68	73	1.3 U
Methyl Ethyl Ketone	0.88 U	14	18	0.88 U
o-Xylene	40	36	39	0.65 U
Styrene	10	10	11	0.64 U
Toluene	15	14	16	0.57 U

a\ bgs = below the ground surface, ug/m3 = micrograms per cubic meter, VOCs = volatile organic compounds; NA = not applicable; U = not detected.
b\ Sample and duplicate.
c\ Trip blank.

Appendix A – Laboratory Reports

AMPLIFIED GEOCHEMICAL IMAGING, LLC

Laboratory Report

Site: 4255-9

Prepared for:

WSP / Parsons Brinckerhoff
750 Holiday Drive
Suite 410
Pittsburgh, PA

Prepared on:
August 24, 2016

Project Summary and Objective

Amplified Geochemical Imaging, LLC. (AGI) provided the AGI Environmental Survey used at:

4255-9

The service provided by AGI included delivery of the required quantity of AGI Universal Samplers, analysis by the method described below for the requested organic compounds, reporting of the data, and contour mapping (as needed).

This report includes results for only the samples noted under the Laboratory Sample Report section. If contour maps are part of the project deliverable, the maps will be prepared and issued under a separate report cover, upon receipt of a usable sitemap (electronic) and compound choices for contouring.

Written/submitted by:

Kelly J Stringham

Project Manager

Reviewed/approved by:

Ian McMullen

Chemist

Analytical data approved by:

Ian McMullen

Chemist

Quality Assurance Statement

The AGI Laboratory, at Amplified Geochemical Imaging's facility in Newark, DE USA, operates under the guidelines of its ISO Standard 17025 DoD ELAP accreditation, and its Quality Assurance Manual, Operating Procedures, and Methods (SOP-QA-0462).

For this project, the analytical method, results, and observations reported do [ ] do not [√] fall within the scope of AGI's ISO 17025 accreditation.

Screening/Concentration Method

The AGI Universal Samplers are analyzed at AGI's fixed laboratory using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following modified U.S. EPA Method 8260 (SPG-WI-0292) which includes the following:

- **BFB Tuning Frequency:** A BFB tune is analyzed at the start of each analytical run and after every 30 samples.
- **Initial Calibration:** A minimum of a five point calibration curve is analyzed prior to the analysis of samples.
- **Initial Calibration Verification (ICV):** Following the calibration a second-source reference standard is analyzed to verify the accuracy of the calibration. Acceptance criteria for the ICV is +/- 30%.
- **Linearity of Target Compounds:** If the RSD of any target analyte is less than or equal to 25% then average response factor can be used for quantitation. If the RSD exceeds 25% for a target compound a regression equation can be used for quantitation.
- **Continuing Calibration Verification:** After every 10 samples, and at the end of each analytical batch, a mid-level second-source Reference Standard is analyzed. The acceptance criteria for all target analytes in the reference standards are +/- 50% of the true value.
- **Method Blank:** Analyzed prior to the analysis of field samples and every 30 samples.

Note: Analyte levels reported for the field-deployed AGI Universal Samplers that exceed trip and method blank levels, and/or the reporting limit, are more likely to have originated from on-site sources.

Media Sampled:	SOIL GAS
Chemist - sample analysis:	Fatima Niazi
Chemist - data processor:	Fatima Niazi
Chemist - data review:	Ian McMullen

Method deviations: None

Please note that data file names ending with R are rerun samples using the second pair of sorbers, in which the original results were not reported. Data file names ending in D are duplicate analysis results for the second set of sorbers from the same sampler, and are reported.

Additional Report Information

- Comments
- Laboratory Sample Report
- Chain of Custody
- Installation and Retrieval Log
- Data Table(s) and Key
- Total Ion Chromatograms

Project Specific Comments

Samplers 00777592 and 00777613 were analyzed as trip blanks. Samplers 00777593 and 00777594 were returned unused.

Survey period [1]	Samplers were installed on August 1, 2016 and retrieved on August 9, 2016 for an exposure period of eight (8) days.	
Tamper seal intact:	Yes	
Date received:	8/11/16 10:20 am	By: Darlene Yellowdy
COC returned:	Yes	
Comments:	None	

1 - Installation start to end of retrieval, as reported. See installation and retrieval log for individual deployment and retrieval dates and times (i.e., sampler exposure time).

General Comments

Analytical QA/QC

Laboratory instrumentation consists of gas chromatographs equipped with mass selective detectors, coupled with automated thermal desorption units. Sample preparation involves cutting the tip off the bottom of the AGI Universal Sampler, and transferring one or more "sorbers" to a thermal desorption tube for analysis. The insertion/retrieval cord prevents soil, water and other interferences from coming in contact with the adsorbent. No further sample preparation is required. Any replicate sorbers not consumed in the initial analysis will be discarded fifteen (15) days from the date of the laboratory report.

Data are archived and stored in a secure manner as per AGI's Quality Assurance program (SOP-QA-0462).

Total petroleum hydrocarbons (TPH), gasoline-range petroleum hydrocarbons (GRPH), and/or diesel range petroleum hydrocarbons (DRPH), when reported, are calculated using the area under the peaks observed in m/z 55 and 57 selected ion chromatograms. Quantitation of the mass values was performed using the response factor for a specific alkane (present in the calibration standards). TPH values include the entire chromatogram and provide estimates for aliphatic hydrocarbon ranges of C4 to C20. GRPH and DRPH include only the relevant regions of the chromatograms and provide estimates for C4 to C10 and C10 to C20 aliphatic hydrocarbons, respectively.

Trip blanks were provided to document potential exposures that were not part of the signal of interest (e.g., impact during sampler shipment, installation and/or retrieval, and storage). The trip blanks are identically manufactured and packaged AGI Universal Samplers to those samplers deployed in the field . The trip blanks remain unopened during all phases of the project. Levels reported on the trip blanks may indicate potential impact to the samplers other than the contaminant source of interest.

Unresolved peak envelopes (UPEs) are represented as a series of compound peaks clustered together around a central gas chromatograph elution time in the total ion chromatogram. UPEs may be indicative of complex fluid mixtures. UPEs observed early in the chromatograms are considered to indicate presence of more volatile fluids, while UPEs observed later in the chromatogram may indicate the presence of less volatile fluids. Multiple UPEs may indicate the presence of multiple complex fluids.

Total ion chromatograms (TICs) are included in the Attachments. The eight-digit serial number of each sampler is incorporated in the TIC identification (e.g., 12345678.D represents AGI Universal Sampler 12345678).

General Comments

Soil Gas Sampling

For soil gas sampling, the AGI Environmental Survey reports mass levels migrating through the open pore spaces of the soil and diffusing through the sampler membrane for sorption by the engineered, hydrophobic adsorbents, housed within the membrane tube. During the migration of the soil gas away from the source to the AGI Universal Sampler, the vapors are subject to a variety of attenuation factors. The soil gas masses reported on the samplers compare favorably with the concentrations reported in the soil or groundwater (e.g., where soil gas levels are reported at greater levels to other sampled locations on the site, the matrix data should reveal the same pattern, and vice versa). However, due to a variety of factors, a perfect comparison between matrix data and soil gas levels can rarely be achieved.

Soil gas concentrations (µg/m3) are calculated following the method described in the Additional Report Information section.

Soil gas signals reported by this method cannot be correlated specifically to soil adsorbed, groundwater, and /or free-phase contamination. The soil gas signal reported from each AGI Universal Sampler can evolve from all of these sources. Differentiation between soil and groundwater contamination can only be achieved with prior knowledge of the site history (i.e., the site is known to have groundwater contamination only).

Air Sampling

For indoor, outdoor, and crawlspace air sampling, the AGI Environmental Survey reports mass levels present in the air and diffusing through the sampler membrane for sorption by the engineered adsorbents housed within the membrane tube.

Air concentrations (µg/m3) are calculated following the method described in the Additional Report Information section.

Groundwater and Sediment Porewater Sampling

For groundwater and sediment porewater sampling, the AGI Environmental Survey reports the mass levels of compounds present in the water which, when coming in contact with the sampler membrane, partitions out of solution, and diffuses through the sampler membrane for sorption by the engineered adsorbents.

Water concentrations (µg/L) are calculated using the quantified mass, exposure period and the compound specific uptake rate. The rates were measured under controlled experimental conditions. The uptake rates are corrected for water pressure (depth of the AGI Universal Sampler below the water table), water temperature and the aquifer flow rate. For sediment porewater, the uptake rate is corrected for the reduced volume of water in the sediment, by multiplying the uptake rate by the pore water fraction.

Laboratory Sample Report

AGI Sample ID	Field ID	Sample Type
00777592	TB080916	TRIP BLANK
00777593		UNUSED
00777594		UNUSED
00777595	PSG-16	FIELD SAMPLE
00777596	PSG-15	FIELD SAMPLE
00777597	PSG-14	FIELD SAMPLE
00777598	SV3-51-12	FIELD SAMPLE
00777599	PSG-99	FIELD SAMPLE
00777600	PSG-9	FIELD SAMPLE
00777601	PSG-10	FIELD SAMPLE
00777602	PSG-11	FIELD SAMPLE
00777603	PSG-12	FIELD SAMPLE
00777604	PSG-13	FIELD SAMPLE
00777605	PSG-8	FIELD SAMPLE
00777606	PSG-7	FIELD SAMPLE
00777607	PSG-6	FIELD SAMPLE
00777608	PSG-5	FIELD SAMPLE
00777609	PSG-4	FIELD SAMPLE
00777610	PSG-1	FIELD SAMPLE
00777611	PSG-2	FIELD SAMPLE
00777612	PSG-3	FIELD SAMPLE
00777613		TRIP BLANK

Total # Field Samples: 18
Total # Trip Blanks: 2
Total # Unused: 2

AMPLIFIED GEOCHEMICAL IMAGING LLC

210 Executive Drive
Newark, Delaware 19702 USA
ph: +1-302-266-2428
www.agisurveys.net

AGI Universal Passive Sampler Chain of Custody
Soil gas and/or Air Sampling

Production Order #: 01683

Customer Name: WSP / Parsons Brinckerhoff

Site Name: 4255-9

Address: 13530 Dulles Technology Drive
Suite 300

Herndon, VA 20171
USA

Site Address:

Project Manager: Colleen Myers

Serial # of Samplers Shipped
00777592 - 00777613

# of Samplers for Installation 20.00
Total Samplers Shipped 22.00
Total Samplers Received 22 Pieces
Total Samplers Installed ~~22~~ 2018 Pieces

# of Trip Blanks 2 Pieces

Serial # of Trip Blanks (Client Decides)

no seal
~~00777593~~
00777592

Insertion Rods

Tips Shipped: 1

Rod Bodies Shipped 4

Prepared By:

Verified By:

Installation Method: (Circle those that apply)
Slide Hammer Hammer Drill Auger
Other - hand-driven steel rod

Installation Performed By:
Name: Nate Winston
Company: WSP

Retrieval Performed By:
Name: Erik Reinert
Company: WSP

Installation Start Date / Time: 8/1/16 ~~1718~~ 1150

Installation Complete Date / Time: ~~1718 8/9/16~~ 8/1/16 1718

Retrieval Start Date / Time: 8/9/16 1415

Retrieval Complete Date / Time: 8/9/16 1922

Total Samplers Retrieved: 19 ~~21~~ including TB

Insertion Rod Sections Returned: 4

Total Samplers Lost In Field: 0

Total Unused Samplers Returned: 3 ~~X~~ + 1 empty, unlabeled vial

Relinquished By Date/Time 7/28/16 2:45pm
Company: AGI

Received By: Nate Winston 8/1/16 Date/Time 0900
Company: WSP

Relinquished By Date/Time 8/10/16 11:00
Company: WSP

Received By: Marlene Gallardo Date/Time 8/11/16 10:20 AM
Company: AGI

AMPLIFIED GEOCHEMICAL IMAGING, LLC

210 Executive Drive, Suite 1
Newark, DE USA 19702-3335
ph: 302-266-2428

AGI Project No. ENV 01683
Site Name: 4255-9
Site Location:

AGI Soil Gas Sampling
Installation & Retrieval Log

Company Name: WSP / Parsons Brinckerhoff
Location: Former EPT, Ithaca, New York
Samples collected by: Nate Winston & Erik Reinert

*** Optional or as needed**

SAMPLER SERIAL NO.	FIELD ID* (e.g., arbitrary, US EPA)	SAMPLE TYPE (Field Sample, Trip Blank, Field Blank, etc.)	INSTALLATION DATE & TIME MM/DD/YYYY HH:MM (24 Hour) ex. 12/27/2000 13:00	RETRIEVAL DATE & TIME MM/DD/YYYY HH:MM (24 Hour) ex. 12/30/2000 13:00	OBSERVATIONS/COMMENTS* (e.g., sample depth, location description, missing, pulled from hole, etc. - as needed)
00777592	TB080916	TRIP_BLANK			
00777593		UNUSED			
00777594		UNUSED			
00777595	PSG-16	FIELD_SAMPLE	8/1/16 17:30	8/9/16 18:27	21"
00777596	PSG-15	FIELD_SAMPLE	8/1/16 17:06	8/9/16 18:23	16.5"
00777597	PSG-14	FIELD_SAMPLE	8/1/16 16:38	8/9/16 18:20	17"
00777598	SV3-51-12	FIELD_SAMPLE	8/1/16 15:59	8/9/16 18:12	22"
00777599	PSG-99	FIELD_SAMPLE	8/1/16 16:08	8/9/16 0:00	
00777600	PSG-9	FIELD_SAMPLE	8/1/16 15:36	8/9/16 19:00	19"
00777601	PSG-10	FIELD_SAMPLE	8/1/16 15:15	8/9/16 18:40	16"
00777602	PSG-11	FIELD_SAMPLE	8/1/16 14:49	8/9/16 18:35	21"
00777603	PSG-12	FIELD_SAMPLE	8/1/16 14:33	8/9/16 18:31	29"
00777604	PSG-13	FIELD_SAMPLE	8/1/16 14:08	8/9/16 14:15	26"
00777605	PSG-8	FIELD_SAMPLE	8/1/16 13:48	8/9/16 19:22	19"
00777606	PSG-7	FIELD_SAMPLE	8/1/16 13:35	8/9/16 19:15	15"
00777607	PSG-6	FIELD_SAMPLE	8/1/16 13:11	8/9/16 19:10	17"
00777608	PSG-5	FIELD_SAMPLE	8/1/16 12:53	8/9/16 19:06	16.5"
00777609	PSG-4	FIELD_SAMPLE	8/1/16 12:38	8/9/16 19:03	24"
00777610	PSG-1	FIELD_SAMPLE	8/1/16 12:26	8/9/16 15:50	22"
00777611	PSG-2	FIELD_SAMPLE	8/1/16 12:15	8/9/16 15:47	18"
00777612	PSG-3	FIELD_SAMPLE	8/1/16 12:00	8/9/16 16:00	18"
00777613		UNUSED			

AGI Soil Gas Sampling
Installation & Retrieval Log

*** Optional or as needed**

SAMPLER SERIAL NO.	SAMPLE ENVIRONMENT* (e.g., grass, bare soil, through slab)	YES / NO			AT MINIMUM PROVIDE SOIL TYPE			
		EVIDENCE OF LIQUID PETROLEUM HYDROCARBONS?	ODOR ?	WATER IN INSTALLATION HOLE?	SOIL TYPE AT MODULE DEPTH (clay, loamy sand etc.)	TOTAL SOIL POROSITY AT MODULE DEPTH* (total volume of pores/total volume)	WATER FILLED SOIL POROSITY AT MODULE DEPTH* (volume of water/volume of pores)	PROJECTED COORDINATES X (EASTING)
00777592								-
00777593								
00777594								
00777595	Grass	No	No	No	SILTY_CLAY_LOAM			842381.1982
00777596	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842386.3819
00777597	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842391.5176
00777598	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842396.9654
00777599	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			-
00777600	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842421.2503
00777601	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842416.3609
00777602	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842410.9906
00777603	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842405.5411
00777604	Grass	No	No	No	SILTY_CLAY_LOAM			842398.3744
00777605	Grass	No	No	No	SILTY_CLAY_LOAM			842418.877
00777606	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842424.8587
00777607	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842430.2342
00777608	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842435.6551
00777609	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842440.9262
00777610	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842459.8495
00777611	Wooded terrain	No	No	No	SILTY_CLAY_LOAM			842447.088
00777612	Grass	No	No	No	SILTY_CLAY_LOAM			842439.0029
00777613								

AGI Soil Gas Sampling
Installation & Retrieval Log

*** Optional or as needed**

SAMPLER SERIAL NO.	PROJECTED COORDINATES Y (NORTHING)	COORDINATE SYSTEM* (e.g., UTM Zone, Stateplane, etc.)	COORDINATE DATUM* (e.g., WGS 84)
00777592	-	-	-
00777593			
00777594			
00777595	884006.2249	Stateplane	755.59
00777596	884025.5679	Stateplane	752.42
00777597	884044.9287	Stateplane	749.82
00777598	884063.9556	Stateplane	747.23
00777599	-	-	-
00777600	884078.2126	Stateplane	746.48
00777601	884058.8267	Stateplane	749.17
00777602	884039.5307	Stateplane	752.24
00777603	884020.2965	Stateplane	755.06
00777604	883998.73	Stateplane	758.11
00777605	883995.4243	Stateplane	760.04
00777606	884014.5376	Stateplane	757.88
00777607	884034.54	Stateplane	754.97
00777608	884054.0302	Stateplane	752.28
00777609	884072.6957	Stateplane	749.31
00777610	884067.4156	Stateplane	751.47
00777611	884026.6103	Stateplane	757.77
00777612	883992.0824	Stateplane	763.04
00777613			

AMPLIFIED GEOCHEMICAL IMAGING, LLC
210 EXECUTIVE DRIVE, SUITE 1, NEWARK, DE 19702
WSP PARSONS BRINCKERHOFF, HERNDON, VA
STANDARD TARGET VOCs/SVOCs
4255-9
ORDER # 01683

DATAFILE	FIELD	DATE/ TIME													
NAME	ID	ANALYZED	DF	TPH, ug	VC, ug	MTBE, ug	11DCE, ug	t12DCE, ug	11DCA, ug	c12DCE, ug	CHCl3, ug	111TCA, ug	12DCA, ug	BENZ, ug	CCl4, ug
RL =				0.50	0.20	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
777592	TB080916	8/16/16 18:24	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777595	PSG-16	8/17/16 2:27	1	0.64	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.23	<0.02	<0.02	<0.02
777596	PSG-15	8/16/16 20:25	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777597	PSG-14	8/16/16 20:55	1	0.59	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777598	SV3-51-12	8/16/16 23:56	1	1.09	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
777599	PSG-99	8/16/16 19:55	1	2.26	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777600	PSG-9	8/17/16 2:57	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02
777601	PSG-10	8/16/16 19:24	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777602	PSG-11	8/17/16 1:57	1	0.85	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777603	PSG-12	8/17/16 4:28	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
777604	PSG-13	8/16/16 22:26	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.19	<0.02	<0.02	<0.02
777605	PSG-8	8/17/16 12:57	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02
777606	PSG-7	8/17/16 3:58	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777607	PSG-6	8/16/16 18:54	1	0.72	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777608	PSG-5	8/17/16 12:27	1	0.56	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777609	PSG-4	8/16/16 21:25	1	6.66	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02
777610	PSG-1	8/16/16 17:54	1	2.10	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	<0.02
777611	PSG-2	8/17/16 3:28	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777612	PSG-3	8/16/16 21:56	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777613	Trip Blank	8/17/16 6:28	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK_ENV-1	Method Blank	8/16/16 17:24	1	<0.50	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

AMPLIFIED GEOCHEMICAL IMAGING, LLC
210 EXECUTIVE DRIVE, SUITE 1, NEWARK, DE 19702
WSP PARSONS BRINCKERHOFF, HERNDON, VA
STANDARD TARGET VOCs/SVOCs
4255-9
ORDER # 01683

DATAFILE														
NAME	TCE, ug	112TCA, ug	TOL, ug	OCT, ug	PCE, ug	ClBENZ, ug	1112TetCA, ug	ETBENZ, ug	mpXYL, ug	oXYL, ug	1122TetCA, ug	135TMB, ug	124TMB, ug	13DCB, ug
RL =	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
777592	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777595	0.66	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	0.10	0.03	<0.02	<0.02	0.03	<0.02
777596	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777597	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777598	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777599	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777600	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777601	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777602	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777603	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777604	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777605	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777606	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777607	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777608	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777609	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777610	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777611	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777612	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
777613	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BLK_ENV-1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

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STANDARD TARGET VOCs/SVOCs
4255-9
ORDER # 01683

DATAFILE										
NAME	14DCB, ug	12DCB, ug	UNDEC, ug	NAPH, ug	TRIDEC, ug	2MeNAPH, ug	Acenaphthylene, ug	PENTADEC, ug	Acenaphthene, ug	Fluorene, ug
RL =	0.02	0.02	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
777592	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777595	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777596	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777597	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777598	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777599	<0.02	<0.02	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777600	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777601	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777602	<0.02	<0.02	<0.05	<0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05
777603	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777604	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777605	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777606	<0.02	<0.02	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	<0.05	<0.05
777607	<0.02	<0.02	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777608	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777609	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777610	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777611	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777612	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
777613	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BLK_ENV-1	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

KEY TO DATA TABLE

UNITS

µg	micrograms, relative mass value
µg/mˆ3	micrograms per cubic meter; estimated soil gas concentration
µg/L	micrograms per Liter; calculated water concentration

DATA QUALIFIERS

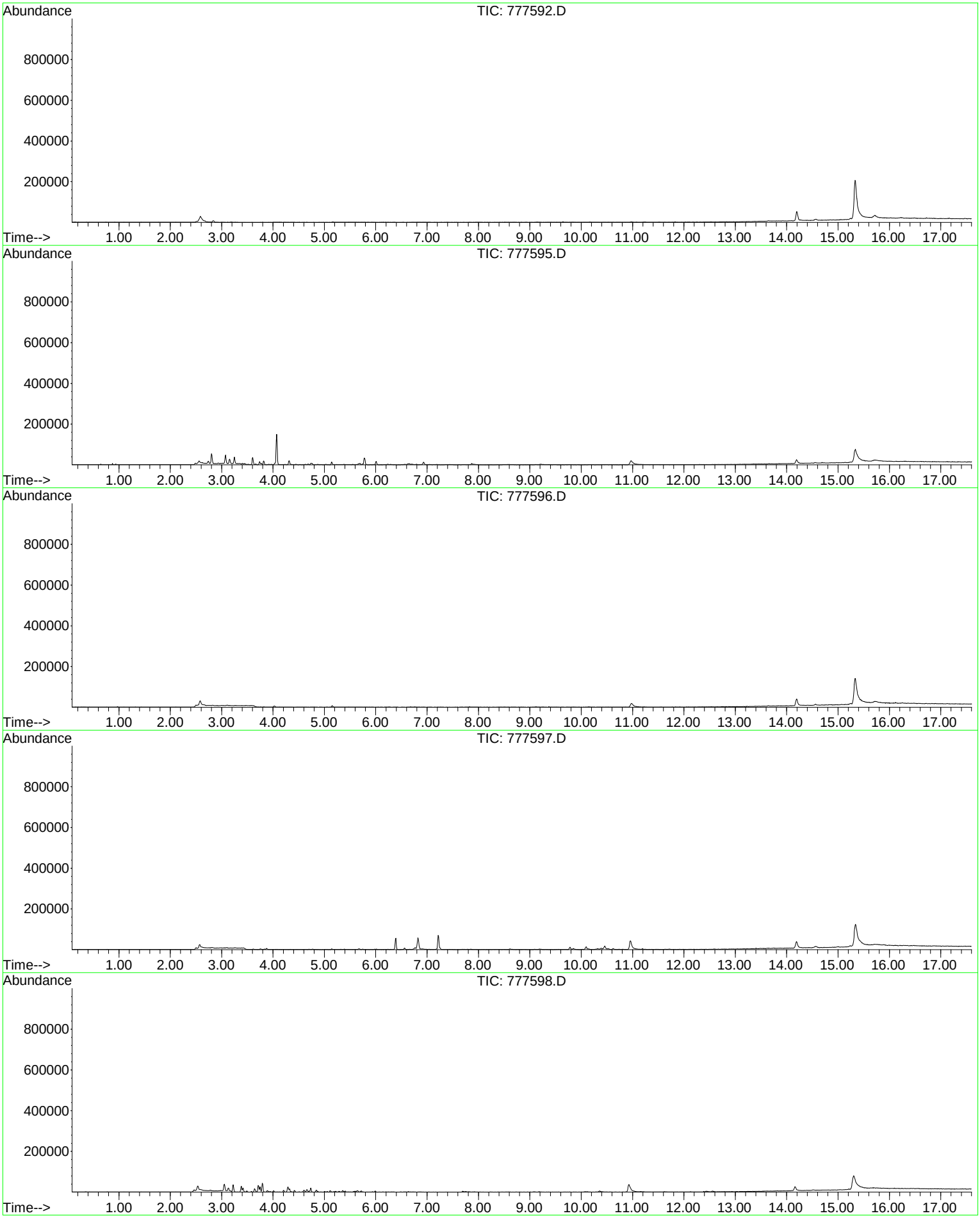
>	greater than; value exceeds calibration range, estimated value
<	less than; compound value is below the LOD and RL
J	mass value below LOQ or RL, but above LOD, estimated mass value
E	mass value exceeds upper calibration level, estimated mass value
Q	one or more quality control parameters failed for the compound

ABBREVIATIONS

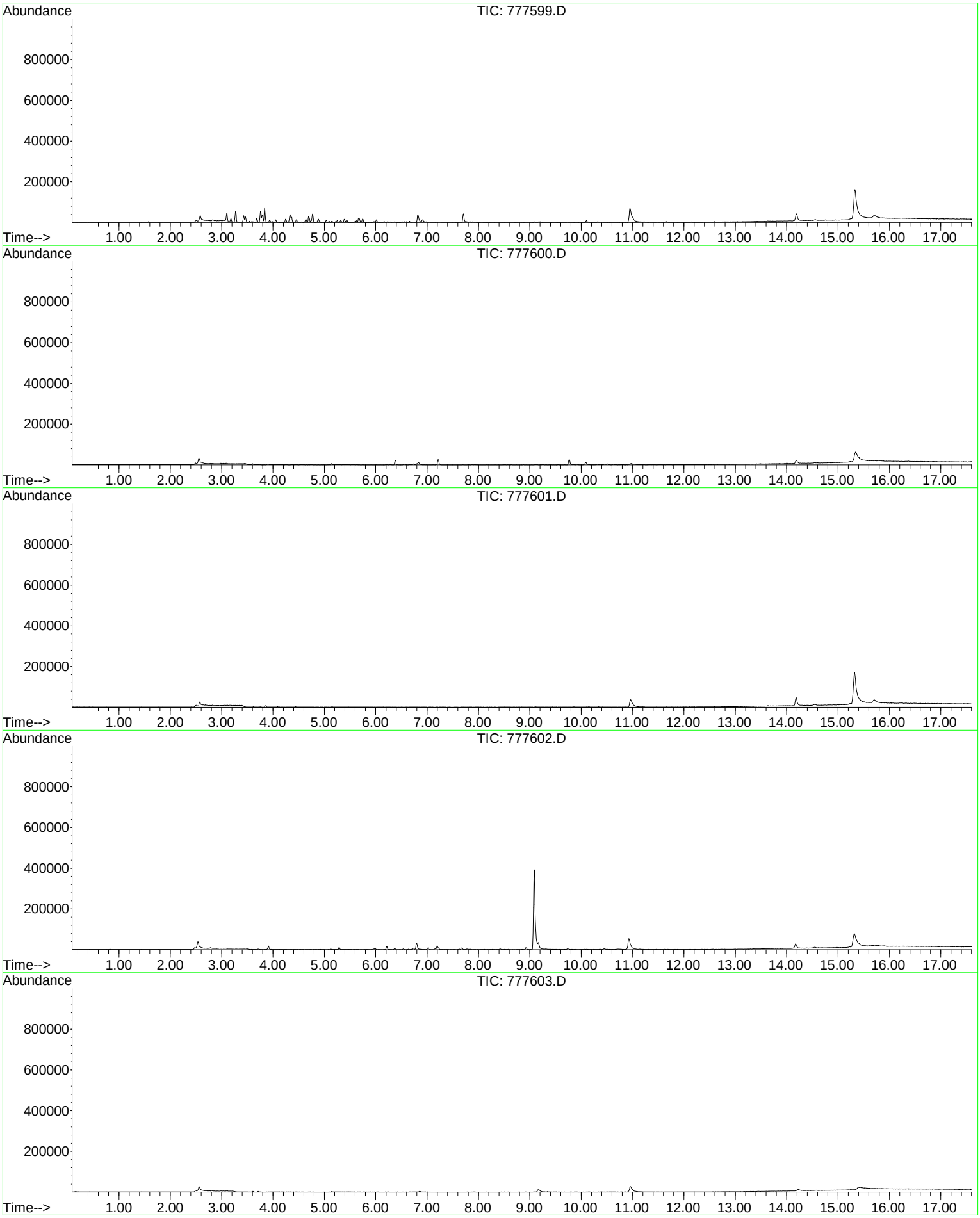
AVG RL	average reporting limit; calculated based on individual field sample RLs
LOD	limit of detection
LOQ	limit of quantification
MDL	method detection limit
RL	reporting limit

1112TetCA	1,1,1,2-tetrachloroethane
111TCA	1,1,1-trichloroethane
1122TetCA	1,1,2,2-tetrachloroethane
112TCA	1,1,2-trichloroethane
11DCA	1,1-dichloroethane
11DCE	1,1-dichloroethene
124TMB	1,2,4-trimethylbenzene
12DCA	1,2-dichloroethane
12DCB	1,2-dichlorobenzene
135TMB	1,3,5-trimethylbenzene
13DCB	1,3-dichlorobenzene
14DCB	1,4-dichlorobenzene
2MeNAPH	2-methyl naphthalene
BENZ	benzene
BTEX	combined masses of benzene, toluene, ethylbenzene, and total xylenes (Gasoline Range Aromatics)
C11,C13&C15	combined masses of undecane, tridecane, and pentadecane (C11+C13+C15) (Diesel Range Alkanes)
c12DCE	cis-1,2-dichloroethene
CCl4	carbon tetrachloride
CHC13	chloroform
ClBENZ	chlorobenzene
ct12DCE	cis- & trans-1,2-dichloroethene
EtBENZ	ethylbenzene
mpXYL	m-, p-xylene
MTBE	methyl t-butyl ether
NAPH	naphthalene
OCT	octane
oXYL	o-xylene
PCE	tetrachloroethene
PENTADEC	pentadecane
PHEN	phenanthrene
t12DCE	trans-1,2-dichloroethene
TCE	trichloroethene
TMBs	combined masses of 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene
TOL	toluene
TPH	total petroleum hydrocarbons
TRIDEC	tridecane
UNDEC	undecane
VC	vinyl chloride

TICS - 01683
IN NUMERICAL ORDER



TICS - 01683
IN NUMERICAL ORDER



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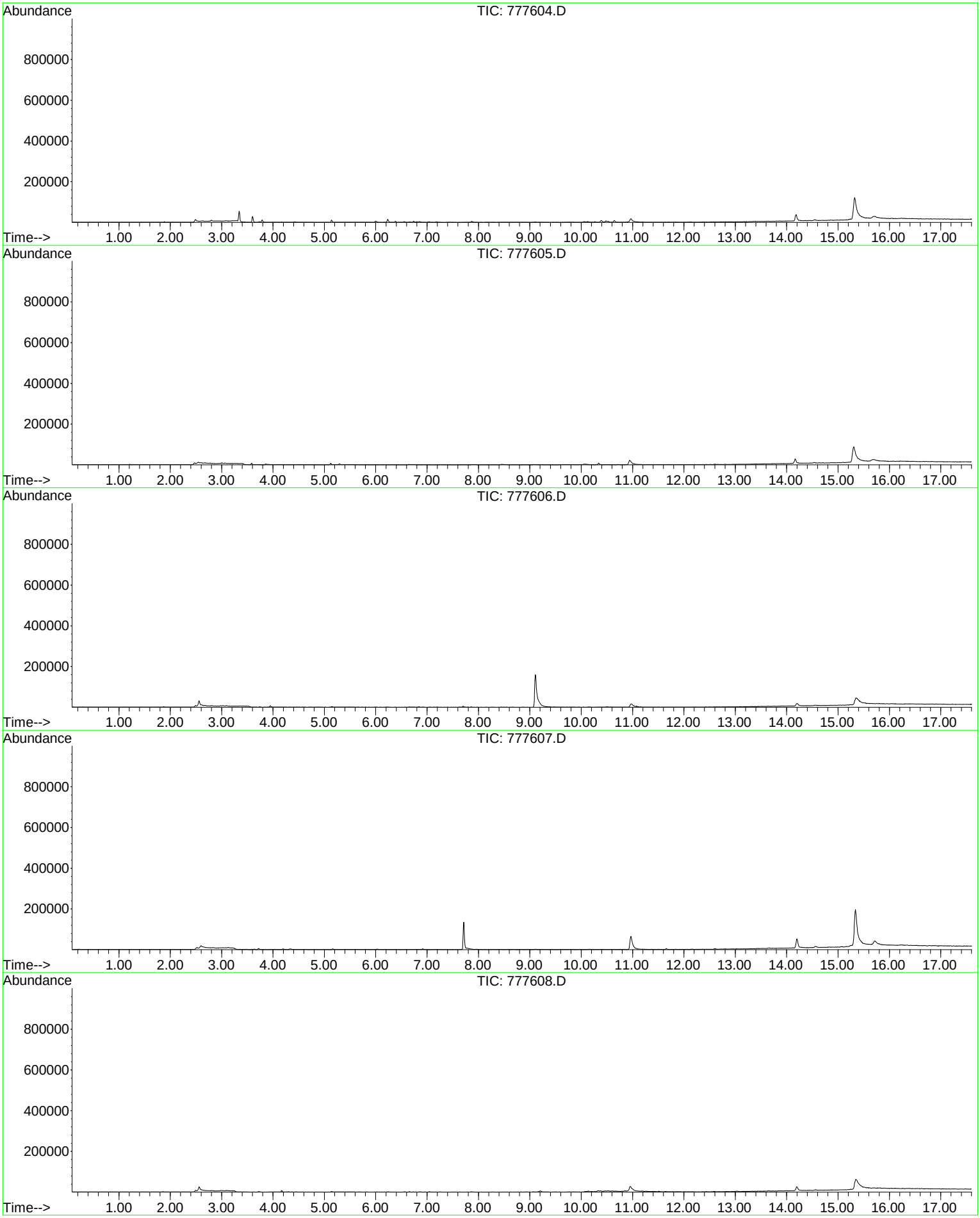
IN NUMERICAL ORDER



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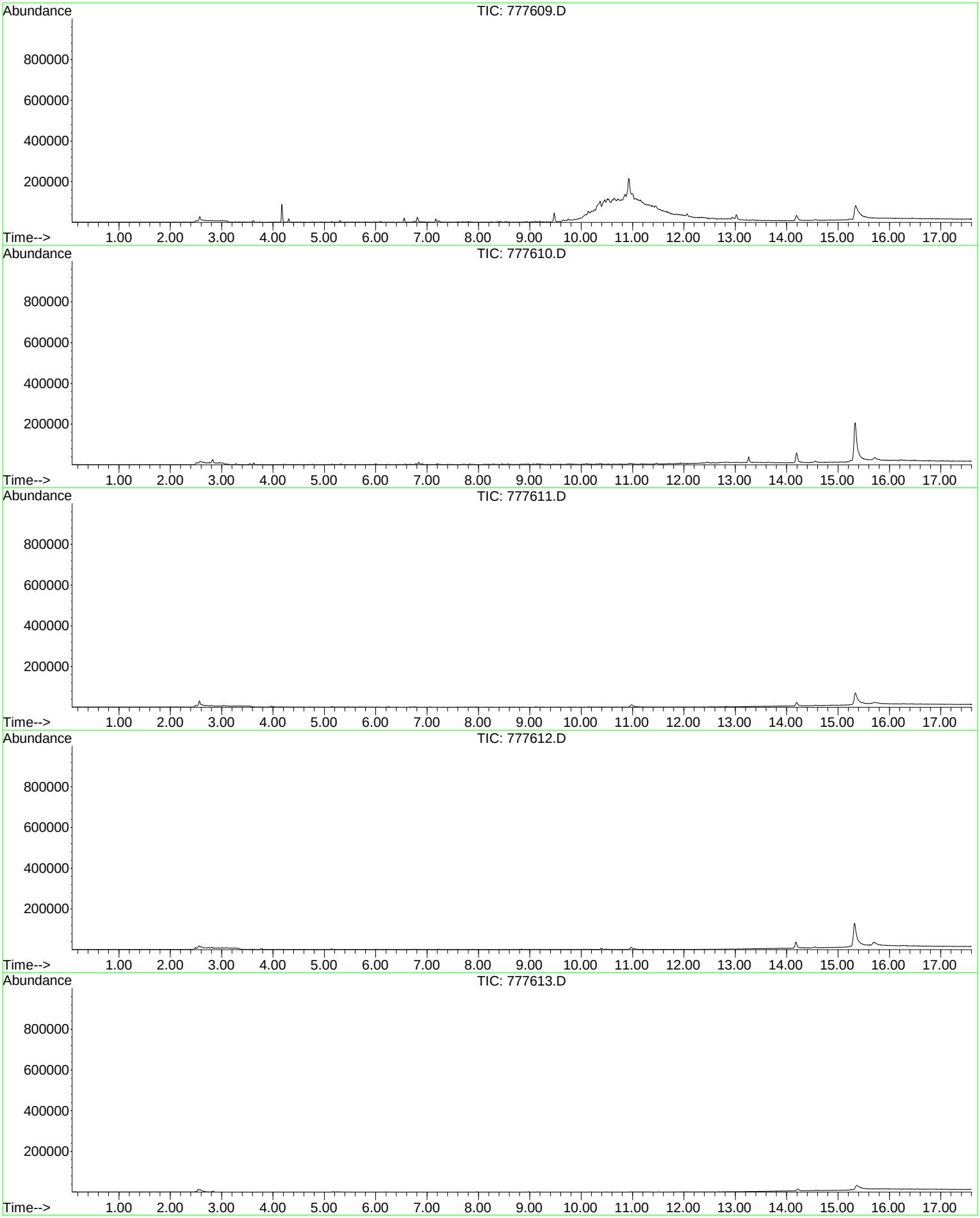
IN NUMERICAL ORDER



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Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-51-2
Lab Order:	C1608039	**Tag Number:**	561,68
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	41	8.2		ug/m3	10	8/13/2016 1:40:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	8/12/2016 5:33:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	8/12/2016 5:33:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 5:33:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 5:33:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	8/12/2016 5:33:00 PM
1,2,4-Trimethylbenzene	18	7.4		ug/m3	10	8/13/2016 1:40:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	8/12/2016 5:33:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 5:33:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 5:33:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	8/12/2016 5:33:00 PM
1,3,5-Trimethylbenzene	8.4	0.74		ug/m3	1	8/12/2016 5:33:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	8/12/2016 5:33:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 5:33:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 5:33:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	8/12/2016 5:33:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	8/12/2016 5:33:00 PM
4-ethyltoluene	6.7	0.74		ug/m3	1	8/12/2016 5:33:00 PM
Acetone	84	14		ug/m3	20	8/13/2016 2:15:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	8/12/2016 5:33:00 PM
Benzene	4.8	0.48		ug/m3	1	8/12/2016 5:33:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	8/12/2016 5:33:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	8/12/2016 5:33:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	8/12/2016 5:33:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	8/12/2016 5:33:00 PM
Carbon disulfide	0.62	0.47		ug/m3	1	8/12/2016 5:33:00 PM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	8/12/2016 5:33:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	8/12/2016 5:33:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	8/12/2016 5:33:00 PM
Chloroform	0.88	0.73		ug/m3	1	8/12/2016 5:33:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	8/12/2016 5:33:00 PM
cis-1,2-Dichloroethene	1.1	0.59		ug/m3	1	8/12/2016 5:33:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 5:33:00 PM
Cyclohexane	4.5	0.52		ug/m3	1	8/12/2016 5:33:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	8/12/2016 5:33:00 PM
Ethyl acetate	< 0.90	0.90		ug/m3	1	8/12/2016 5:33:00 PM
Ethylbenzene	12	6.5		ug/m3	10	8/13/2016 1:40:00 AM
Freon 11	1.3	0.84		ug/m3	1	8/12/2016 5:33:00 PM
Freon 113	2.5	1.1		ug/m3	1	8/12/2016 5:33:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	8/12/2016 5:33:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-51-2
Lab Order:	C1608039	**Tag Number:**	561,68
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	1.6	0.74		ug/m3	1	8/12/2016 5:33:00 PM
Heptane	29	6.1		ug/m3	10	8/13/2016 1:40:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	8/12/2016 5:33:00 PM
Hexane	< 0.53	0.53		ug/m3	1	8/12/2016 5:33:00 PM
Isopropyl alcohol	< 0.37	0.37		ug/m3	1	8/12/2016 5:33:00 PM
m&p-Xylene	68	13		ug/m3	10	8/13/2016 1:40:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 5:33:00 PM
Methyl Ethyl Ketone	14	8.8		ug/m3	10	8/13/2016 1:40:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 5:33:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	8/12/2016 5:33:00 PM
Methylene chloride	40	5.2		ug/m3	10	8/13/2016 1:40:00 AM
o-Xylene	36	6.5		ug/m3	10	8/13/2016 1:40:00 AM
Propylene	< 0.26	0.26		ug/m3	1	8/12/2016 5:33:00 PM
Styrene	10	6.4		ug/m3	10	8/13/2016 1:40:00 AM
Tetrachloroethylene	3.3	1.0		ug/m3	1	8/12/2016 5:33:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	8/12/2016 5:33:00 PM
Toluene	14	5.7		ug/m3	10	8/13/2016 1:40:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 5:33:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 5:33:00 PM
Trichloroethene	8.5	0.81		ug/m3	1	8/12/2016 5:33:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	8/12/2016 5:33:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	8/12/2016 5:33:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	8/12/2016 5:33:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-99-2
Lab Order:	C1608039	**Tag Number:**	188,68
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	43	8.2		ug/m3	10	8/13/2016 2:52:00 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	8/12/2016 6:14:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	8/12/2016 6:14:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 6:14:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 6:14:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	8/12/2016 6:14:00 PM
1,2,4-Trimethylbenzene	18	7.4		ug/m3	10	8/13/2016 2:52:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	8/12/2016 6:14:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:14:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 6:14:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	8/12/2016 6:14:00 PM
1,3,5-Trimethylbenzene	9.0	0.74		ug/m3	1	8/12/2016 6:14:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	8/12/2016 6:14:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:14:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:14:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	8/12/2016 6:14:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	8/12/2016 6:14:00 PM
4-ethyltoluene	6.5	0.74		ug/m3	1	8/12/2016 6:14:00 PM
Acetone	120	14		ug/m3	20	8/13/2016 3:27:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	8/12/2016 6:14:00 PM
Benzene	4.5	0.48		ug/m3	1	8/12/2016 6:14:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	8/12/2016 6:14:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	8/12/2016 6:14:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	8/12/2016 6:14:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	8/12/2016 6:14:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	8/12/2016 6:14:00 PM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	8/12/2016 6:14:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	8/12/2016 6:14:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	8/12/2016 6:14:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	8/12/2016 6:14:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	8/12/2016 6:14:00 PM
cis-1,2-Dichloroethene	1.2	0.59		ug/m3	1	8/12/2016 6:14:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 6:14:00 PM
Cyclohexane	4.3	0.52		ug/m3	1	8/12/2016 6:14:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	8/12/2016 6:14:00 PM
Ethyl acetate	1.2	0.90		ug/m3	1	8/12/2016 6:14:00 PM
Ethylbenzene	13	6.5		ug/m3	10	8/13/2016 2:52:00 AM
Freon 11	1.1	0.84		ug/m3	1	8/12/2016 6:14:00 PM
Freon 113	2.5	1.1		ug/m3	1	8/12/2016 6:14:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	8/12/2016 6:14:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-99-2
Lab Order:	C1608039	**Tag Number:**	188,68
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	< 0.74	0.74		ug/m3	1	8/12/2016 6:14:00 PM
Heptane	31	6.1		ug/m3	10	8/13/2016 2:52:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	8/12/2016 6:14:00 PM
Hexane	18	5.3		ug/m3	10	8/13/2016 2:52:00 AM
Isopropyl alcohol	12	3.7		ug/m3	10	8/13/2016 2:52:00 AM
m&p-Xylene	73	13		ug/m3	10	8/13/2016 2:52:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 6:14:00 PM
Methyl Ethyl Ketone	18	8.8		ug/m3	10	8/13/2016 2:52:00 AM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 6:14:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	8/12/2016 6:14:00 PM
Methylene chloride	42	5.2		ug/m3	10	8/13/2016 2:52:00 AM
o-Xylene	39	6.5		ug/m3	10	8/13/2016 2:52:00 AM
Propylene	< 0.26	0.26		ug/m3	1	8/12/2016 6:14:00 PM
Styrene	11	6.4		ug/m3	10	8/13/2016 2:52:00 AM
Tetrachloroethylene	3.8	1.0		ug/m3	1	8/12/2016 6:14:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	8/12/2016 6:14:00 PM
Toluene	16	5.7		ug/m3	10	8/13/2016 2:52:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 6:14:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 6:14:00 PM
Trichloroethene	8.8	0.81		ug/m3	1	8/12/2016 6:14:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	8/12/2016 6:14:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	8/12/2016 6:14:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	8/12/2016 6:14:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-51-1
Lab Order:	C1608039	**Tag Number:**	288,177
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	1.1	0.82		ug/m3	1	8/12/2016 6:54:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	8/12/2016 6:54:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	8/12/2016 6:54:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 6:54:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 6:54:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	8/12/2016 6:54:00 PM
1,2,4-Trimethylbenzene	15	7.4		ug/m3	10	8/13/2016 4:03:00 AM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	8/12/2016 6:54:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:54:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 6:54:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	8/12/2016 6:54:00 PM
1,3,5-Trimethylbenzene	6.8	0.74		ug/m3	1	8/12/2016 6:54:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	8/12/2016 6:54:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:54:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 6:54:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	8/12/2016 6:54:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	8/12/2016 6:54:00 PM
4-ethyltoluene	5.6	0.74		ug/m3	1	8/12/2016 6:54:00 PM
Acetone	58	7.1		ug/m3	10	8/13/2016 4:03:00 AM
Allyl chloride	< 0.47	0.47		ug/m3	1	8/12/2016 6:54:00 PM
Benzene	4.7	0.48		ug/m3	1	8/12/2016 6:54:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	8/12/2016 6:54:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	8/12/2016 6:54:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	8/12/2016 6:54:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	8/12/2016 6:54:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	8/12/2016 6:54:00 PM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	8/12/2016 6:54:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	8/12/2016 6:54:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	8/12/2016 6:54:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	8/12/2016 6:54:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	8/12/2016 6:54:00 PM
cis-1,2-Dichloroethene	1.5	0.59		ug/m3	1	8/12/2016 6:54:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 6:54:00 PM
Cyclohexane	12	5.2		ug/m3	10	8/13/2016 4:03:00 AM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	8/12/2016 6:54:00 PM
Ethyl acetate	< 0.90	0.90		ug/m3	1	8/12/2016 6:54:00 PM
Ethylbenzene	16	6.5		ug/m3	10	8/13/2016 4:03:00 AM
Freon 11	0.96	0.84		ug/m3	1	8/12/2016 6:54:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	8/12/2016 6:54:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	8/12/2016 6:54:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	SV3-51-1
Lab Order:	C1608039	**Tag Number:**	288,177
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	1.5	0.74		ug/m3	1	8/12/2016 6:54:00 PM
Heptane	59	6.1		ug/m3	10	8/13/2016 4:03:00 AM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	8/12/2016 6:54:00 PM
Hexane	48	5.3		ug/m3	10	8/13/2016 4:03:00 AM
Isopropyl alcohol	< 0.37	0.37		ug/m3	1	8/12/2016 6:54:00 PM
m&p-Xylene	88	13		ug/m3	10	8/13/2016 4:03:00 AM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 6:54:00 PM
Methyl Ethyl Ketone	< 0.88	0.88		ug/m3	1	8/12/2016 6:54:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 6:54:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	8/12/2016 6:54:00 PM
Methylene chloride	66	5.2		ug/m3	10	8/13/2016 4:03:00 AM
o-Xylene	40	6.5		ug/m3	10	8/13/2016 4:03:00 AM
Propylene	< 0.26	0.26		ug/m3	1	8/12/2016 6:54:00 PM
Styrene	10	6.4		ug/m3	10	8/13/2016 4:03:00 AM
Tetrachloroethylene	1.9	1.0		ug/m3	1	8/12/2016 6:54:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	8/12/2016 6:54:00 PM
Toluene	15	5.7		ug/m3	10	8/13/2016 4:03:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 6:54:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 6:54:00 PM
Trichloroethene	8.1	0.81		ug/m3	1	8/12/2016 6:54:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	8/12/2016 6:54:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	8/12/2016 6:54:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	8/12/2016 6:54:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	TB080916
Lab Order:	C1608039	**Tag Number:**	157
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	8/12/2016 4:52:00 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		ug/m3	1	8/12/2016 4:52:00 PM
1,1,2-Trichloroethane	< 0.82	0.82		ug/m3	1	8/12/2016 4:52:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 4:52:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 4:52:00 PM
1,2,4-Trichlorobenzene	< 1.1	1.1		ug/m3	1	8/12/2016 4:52:00 PM
1,2,4-Trimethylbenzene	< 0.74	0.74		ug/m3	1	8/12/2016 4:52:00 PM
1,2-Dibromoethane	< 1.2	1.2		ug/m3	1	8/12/2016 4:52:00 PM
1,2-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 4:52:00 PM
1,2-Dichloroethane	< 0.61	0.61		ug/m3	1	8/12/2016 4:52:00 PM
1,2-Dichloropropane	< 0.69	0.69		ug/m3	1	8/12/2016 4:52:00 PM
1,3,5-Trimethylbenzene	< 0.74	0.74		ug/m3	1	8/12/2016 4:52:00 PM
1,3-butadiene	< 0.33	0.33		ug/m3	1	8/12/2016 4:52:00 PM
1,3-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 4:52:00 PM
1,4-Dichlorobenzene	< 0.90	0.90		ug/m3	1	8/12/2016 4:52:00 PM
1,4-Dioxane	< 1.1	1.1		ug/m3	1	8/12/2016 4:52:00 PM
2,2,4-trimethylpentane	< 0.70	0.70		ug/m3	1	8/12/2016 4:52:00 PM
4-ethyltoluene	< 0.74	0.74		ug/m3	1	8/12/2016 4:52:00 PM
Acetone	< 0.71	0.71		ug/m3	1	8/12/2016 4:52:00 PM
Allyl chloride	< 0.47	0.47		ug/m3	1	8/12/2016 4:52:00 PM
Benzene	< 0.48	0.48		ug/m3	1	8/12/2016 4:52:00 PM
Benzyl chloride	< 0.86	0.86		ug/m3	1	8/12/2016 4:52:00 PM
Bromodichloromethane	< 1.0	1.0		ug/m3	1	8/12/2016 4:52:00 PM
Bromoform	< 1.6	1.6		ug/m3	1	8/12/2016 4:52:00 PM
Bromomethane	< 0.58	0.58		ug/m3	1	8/12/2016 4:52:00 PM
Carbon disulfide	< 0.47	0.47		ug/m3	1	8/12/2016 4:52:00 PM
Carbon tetrachloride	< 0.94	0.94		ug/m3	1	8/12/2016 4:52:00 PM
Chlorobenzene	< 0.69	0.69		ug/m3	1	8/12/2016 4:52:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	8/12/2016 4:52:00 PM
Chloroform	< 0.73	0.73		ug/m3	1	8/12/2016 4:52:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	8/12/2016 4:52:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 4:52:00 PM
cis-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 4:52:00 PM
Cyclohexane	< 0.52	0.52		ug/m3	1	8/12/2016 4:52:00 PM
Dibromochloromethane	< 1.3	1.3		ug/m3	1	8/12/2016 4:52:00 PM
Ethyl acetate	< 0.90	0.90		ug/m3	1	8/12/2016 4:52:00 PM
Ethylbenzene	< 0.65	0.65		ug/m3	1	8/12/2016 4:52:00 PM
Freon 11	< 0.84	0.84		ug/m3	1	8/12/2016 4:52:00 PM
Freon 113	< 1.1	1.1		ug/m3	1	8/12/2016 4:52:00 PM
Freon 114	< 1.0	1.0		ug/m3	1	8/12/2016 4:52:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *17-Aug-16*

CLIENT:	WSP Environment and Energy	**Client Sample ID:**	TB080916
Lab Order:	C1608039	**Tag Number:**	157
Project:	Former EPT	**Collection Date:**	8/9/2016
Lab ID:	C1608039-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: **RJP**
Freon 12	< 0.74	0.74		ug/m3	1	8/12/2016 4:52:00 PM
Heptane	< 0.61	0.61		ug/m3	1	8/12/2016 4:52:00 PM
Hexachloro-1,3-butadiene	< 1.6	1.6		ug/m3	1	8/12/2016 4:52:00 PM
Hexane	< 0.53	0.53		ug/m3	1	8/12/2016 4:52:00 PM
Isopropyl alcohol	< 0.37	0.37		ug/m3	1	8/12/2016 4:52:00 PM
m&p-Xylene	< 1.3	1.3		ug/m3	1	8/12/2016 4:52:00 PM
Methyl Butyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 4:52:00 PM
Methyl Ethyl Ketone	< 0.88	0.88		ug/m3	1	8/12/2016 4:52:00 PM
Methyl Isobutyl Ketone	< 1.2	1.2		ug/m3	1	8/12/2016 4:52:00 PM
Methyl tert-butyl ether	< 0.54	0.54		ug/m3	1	8/12/2016 4:52:00 PM
Methylene chloride	< 0.52	0.52		ug/m3	1	8/12/2016 4:52:00 PM
o-Xylene	< 0.65	0.65		ug/m3	1	8/12/2016 4:52:00 PM
Propylene	< 0.26	0.26		ug/m3	1	8/12/2016 4:52:00 PM
Styrene	< 0.64	0.64		ug/m3	1	8/12/2016 4:52:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	8/12/2016 4:52:00 PM
Tetrahydrofuran	< 0.44	0.44		ug/m3	1	8/12/2016 4:52:00 PM
Toluene	< 0.57	0.57		ug/m3	1	8/12/2016 4:52:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	8/12/2016 4:52:00 PM
trans-1,3-Dichloropropene	< 0.68	0.68		ug/m3	1	8/12/2016 4:52:00 PM
Trichloroethene	< 0.81	0.81		ug/m3	1	8/12/2016 4:52:00 PM
Vinyl acetate	< 0.53	0.53		ug/m3	1	8/12/2016 4:52:00 PM
Vinyl Bromide	< 0.66	0.66		ug/m3	1	8/12/2016 4:52:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	8/12/2016 4:52:00 PM

Qualifiers:

**	Quantitation Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Estimated Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Limit of Detection
S	Spike Recovery outside accepted recovery limits		

Appendix B – VOC Distribution Maps (AGI)

AMPLIFIED GEOCHEMICAL IMAGING, LLC

Mapping Report

Site: 4255-9

Prepared for:

WSP Parsons Brinckerhoff
750 Holiday Drive
Suite 410
Pittsburgh, PA

Prepared on:

September 16, 2016

Project Summary

Amplified Geochemical Imaging, LLC. (AGI) provided the AGI Environmental Survey used at:

4255-9

The service provided by AGI included delivery of the required quantity of AGI Universal Samplers, analysis by the method described for the requested organic compounds, and reporting of the data. A Laboratory Report was issued previously which summarized the field sampling and analytical procedures, and contained the sample results.

Normally, when printed at scale, the maps are 11 x 17 inch in size. Other sizes are available upon request. General and project specific comments on the contouring and mapping can be found on the next page.

Maps prepared by:

Kelly J Stringham

Project Manager

Maps reviewed/approved by:

Dayna M Cobb

Project Manager

Digitally signed by: dcobb
DN: CN = dcobb
Date: 2016.09.19 11:36:15 -04'00'

General Comments

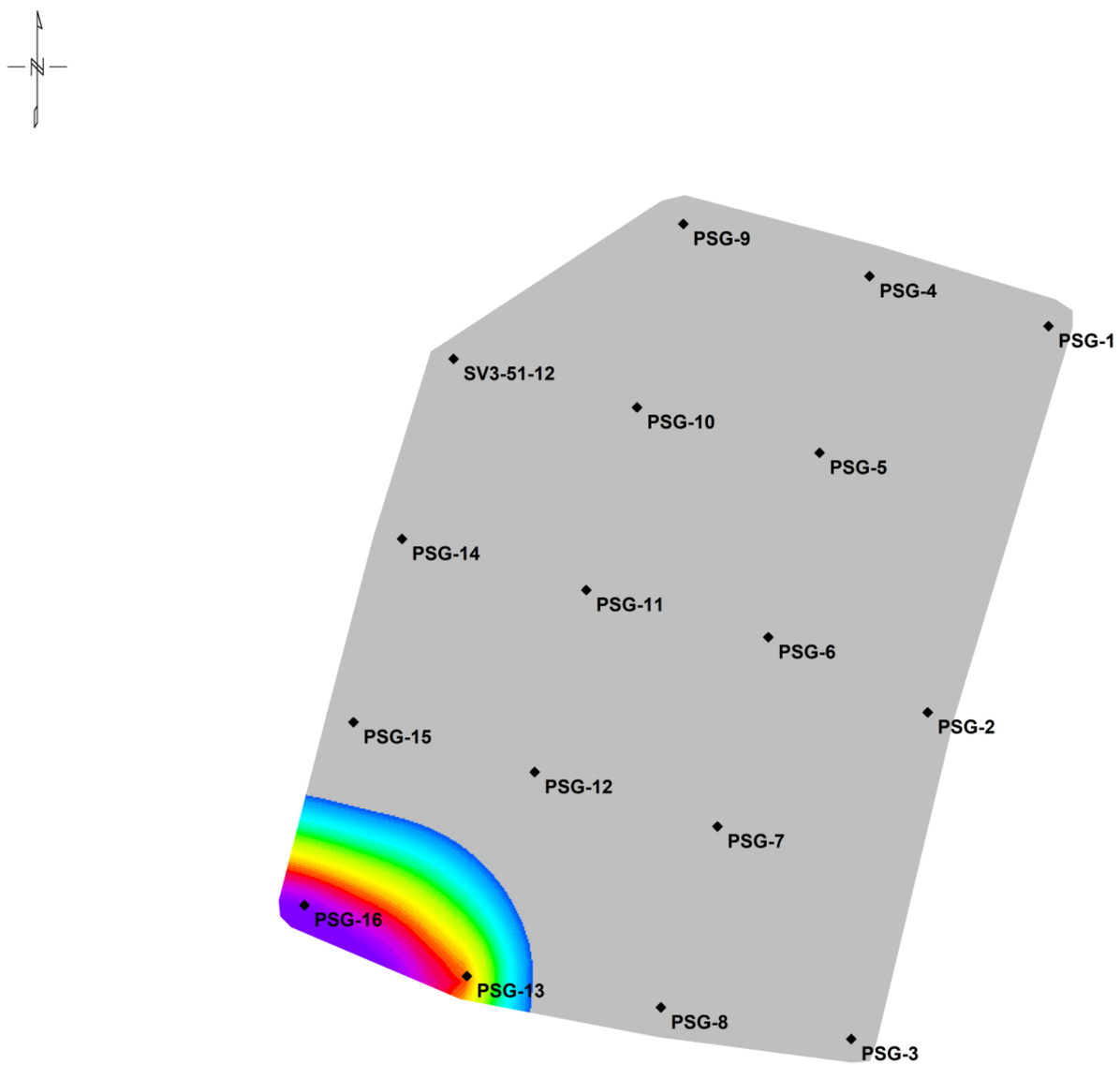
A minimum curvature algorithm was used to interpolate the data from the sample locations to a regularly-spaced grid. The resulting surface is considered to be the smoothest possible surface that will fit the observed values at each sample location (i.e., data honoring). The interpolation is performed in log space, with grid cell sizes approximately one-tenth the average distance between sample locations. For example, when AGI Universal Samplers are placed about 50 feet apart, the grid cell size is set to five feet.

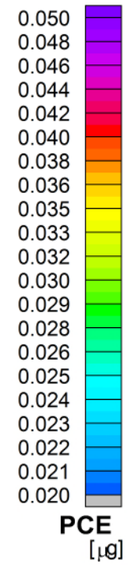
Where observations trend from lower to higher values, and moving towards the edge of the area sampled, the contour surface will continue to rise (showing warmer colors) as no additional data exist to constrain the interpolation. Where observations trend from high to low, towards the edge of the area sampled, the opposite is true.

Contour minimums and maximums used in the color interval assignment are established based on the QA blank levels (trip and method blanks), method detection limits, and maximum values observed. The minimum contour level (gray color) is established using the maximum QA blank level or method detection limit, whichever is greater, per compound or groups of compounds . The maximum contour level is set at the maximum value observed, per compound or groups of compounds. Contour interval assignments can be modified at the client's request.

Project Specific Comments

None.





Scale 1:180

10 0 10 20 30

US survey foot

NAD83 / New York Central (ftUS)

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210 EXECUTIVE DRIVE, SUITE 1
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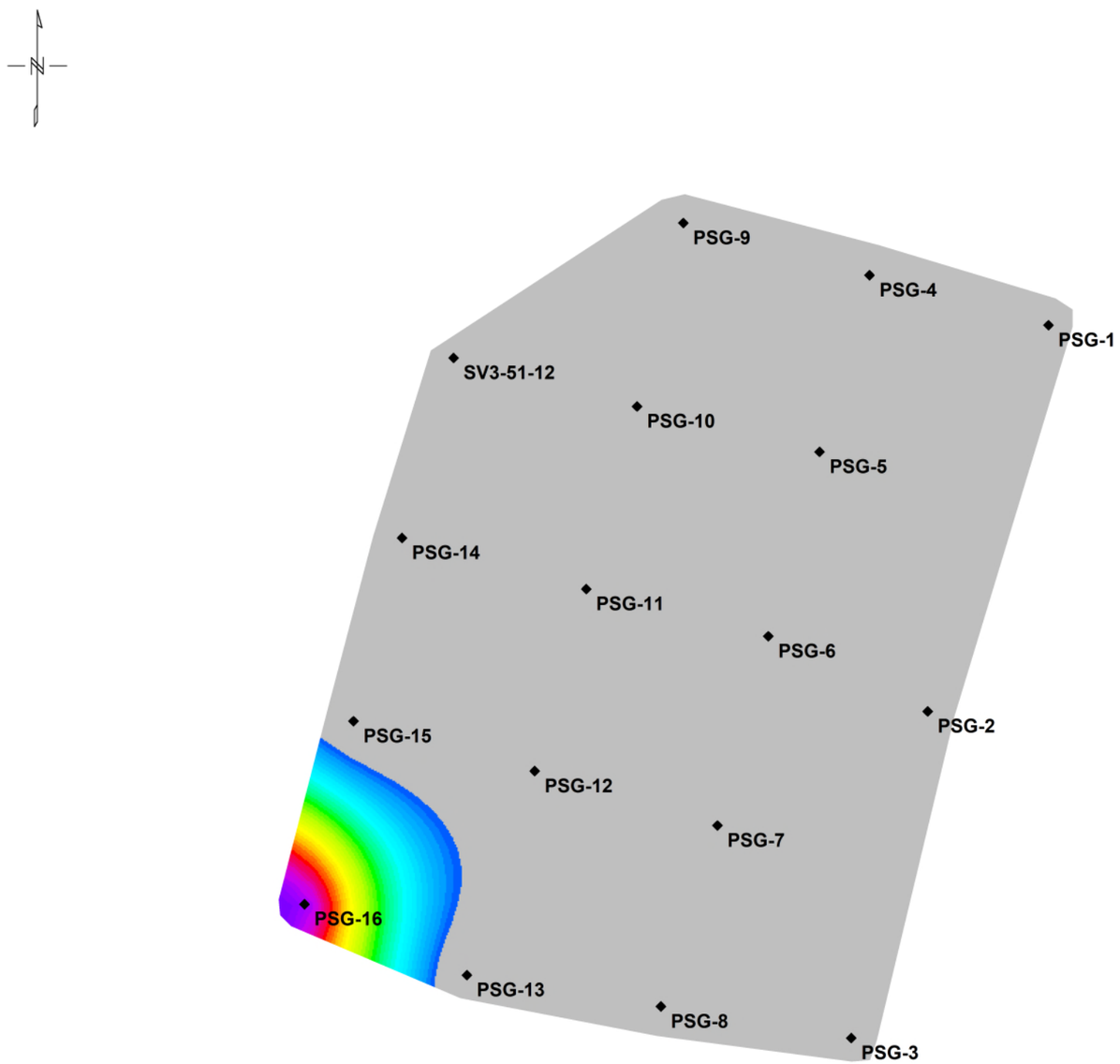
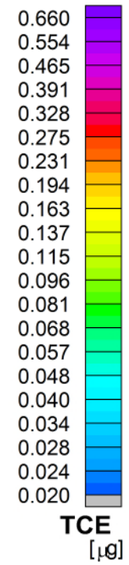
WSP Parsons Brinckerhoff
4255-9
Tetrachloroethene

DATE DRAWN: 2 SEP 2016	DRAWN BY: KJS	ORIG. CAD:	SITE CODE:
REV. DATE:	REV. #:	PROJECT NUMBER: 01683	





Scale 1:180

10 0 10 20 30

US survey foot

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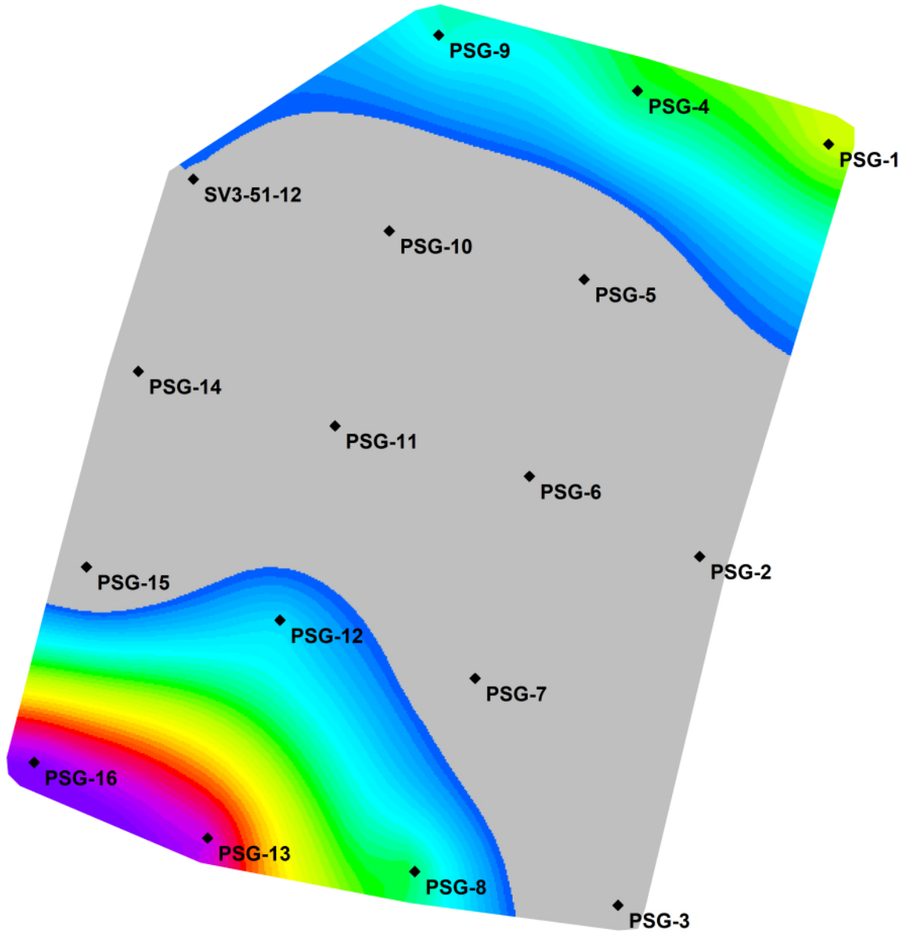
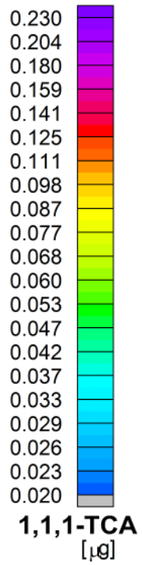
4255-9
Trichloroethene

DATE DRAWN: 2 SEP 2016	DRAWN BY: KJS	ORIG. CAD:	SITE CODE:
REV. DATE:	REV. #:	PROJECT NUMBER: 01683	





Scale 1:180

10 0 10 20 30

US survey foot

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4255-9
1,1,1-Trichloroethane

DATE DRAWN: 2 SEP 2016	DRAWN BY: KJS	ORIG. CAD:	SITE CODE:
REV. DATE:	REV. #:	PROJECT NUMBER: 01683	

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