AECOM

SITE-WIDE GROUNDWATER MONITORING

SUPPLEMENTAL WELL INSTALLATION SAMPLING AND ANALYSIS REPORT

United Technologies Corporation/Carrier Site
Thompson Road, Syracuse, NY

Corrective Action Order – Index CO 7-20051118-4
NYSDEC Site Registry #734043

Project Number: 60528299

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Prepared for:

United Technologies Corporation
Shared Remediation Services
9 Farm Springs Road
Farmington, Connecticut 06032

Prepared by:

AECOM
257 West Genesee Street
Buffalo
NY, 14202
USA
aecom.com

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1. Introduction

United Technologies Corporation (UTC) is performing environmental remediation activities at the Carrier Thompson Road Facility (Site) in Syracuse, Onondaga County, New York. UTC retained AECOM USA, Inc. (AECOM) to provide environmental engineering and investigation support services. The environmental work at the Site is being performed in accordance with the Corrective Action Order on Consent (CO) dated January 4, 2006.

The Site has a substantial number of monitoring wells that have been installed for various reasons, including investigations in areas of concern and establishing a monitoring well network in accordance with the CO. In October 2016, UTC requested that AECOM identify locations where additional monitoring wells are warranted, and particularly in areas near buildings where groundwater contamination, if present, could be a source of vapor intrusion (VI). AECOM prepared a Sampling and Analysis Plan (SAP) for installation and sampling of the additional wells and submitted it to the New York State Department of Environmental Conservation (NYSDEC) in October 2016. The SAP was approved by the NYSDEC on November 3, 2016. The well installation work and groundwater sampling was completed in January through February 2017. This document presents a description of the field procedures and a summary of findings.

1.1 Site Description

The Site is located in the northeast portion of Syracuse, New York, approximately one mile south of the New York State Thruway (**Figures 1 and 2**). The Site is bordered by Sanders Creek to the north, Thompson Road to the west, Kinne Street to the east, and a residential area to the south. The Site is relatively flat with a slight slope to the north toward Sanders Creek. The Site covers approximately 175 acres and most is paved, covered by manufacturing and office buildings, or open grassed areas covering former slabs of demolished buildings.

1.2 Existing Groundwater Monitoring Well Network

In April 2009, a Site-Wide Monitoring Plan (Monitoring Plan) was approved by NYSDEC. The groundwater monitoring well network in the Monitoring Plan is comprised of 16 monitoring wells, which are referred to as the CO (Order on Consent) wells. In addition to the 16 CO wells, there were approximately 90 monitoring points (wells and piezometers) located across the Site. The monitoring points were installed during investigations of Areas of Concern (AOCs) including the Former Buildings TR-1 and TR-2, Parking Lot R, Building TR-3 North Wall/Storm Water Treatment (SWTP) area, MH3 Soil Source Investigation, Administrative and Research (A&R) Building, and the Debris Pile. Other monitoring locations have been installed west of the Thompson Road Facility at the AOC-G Landfill. However, the locations addressed in this Sampling and Analysis Report (SAR) focus on the Thompson Road Campus portion of the Site where on-going operations occur.

In general, the Site is underlain by fill composed of silty clay with varying amounts of gravel, cobbles, brick, metal, and concrete. The fill thickness varies across the Site; in areas of former and existing buildings it has been observed up to 8 feet (ft) thick, in areas away from current and former operations it has been observed to be as little as 1 ft to 2 ft thick. The fill is underlain by natural deposits of silty clay with silt and sand lenses. Below the silty clay unit is a confining clay layer approximately 7 ft to13 ft thick. The clay unit is underlain by 6 ft to10 ft of clayey silt to silt, which is underlain by 2 ft to 6 ft of red brown fine to medium sand. Below the sand unit is a dense clay/silt unit, ranging from 4 ft to 12 ft thick. Red brown to green gray weathered shale underlies this unit. The upper silty clay unit comprises the upper water-bearing zone. The deposits beneath the confining clay unit comprise the lower water-bearing zone. The shallow monitoring wells across the Site are screened in this upper water-bearing zone and deep wells are screened in the lower water-bearing zone.

1.3 General Rationale of New Monitoring Well Locations

Fifteen new shallow wells were proposed in the SAP. Generally, the wells are located:

- in close proximity to buildings in areas that have not been previously investigated;
- to provide groundwater data near buildings to screen for potential VI issues;

- to enhance the Site perimeter monitoring well network; or
- to supplement groundwater information to fill in data gaps or provide data were no or limited data exists.

Following NYSDEC approval of the SAP, a sixteenth well was added to the program to provide another data point on the north side of Building TR-19.

2. Field Investigation Activities

The field activities included borehole pre-clearance, drilling and installation of new groundwater monitoring wells, community air monitoring, equipment decontamination, Investigation-derived waste (IDW) management, collection and analysis of soil and groundwater samples, and survey of investigation point locations and elevations.

Field investigation activities were performed in accordance with the SAP, Generic Site Investigation Procedures (GSIP), Health and Safety Plan (HASP), and Quality Assurance Project Plan (QAPP).

Prior to commencement of intrusive activities, Dig Safely NY was notified for utility clearance. Also, AECOM retained Ground Penetrating Radar Systems, Inc., to conduct a utility location survey at each proposed well location. The survey was performed using a Radiodetection RD7000 cable and pipe locator and ground penetrating radar (GPR). Facility personnel also assisted in the review of Site drawings and field assessment of buried utilities in the investigation areas.

Prior to drilling, each location was pre-cleared to a depth of approximately 5 ft using hand tools. IDW, including drill cuttings, development water, purge water, decontamination water, and sample tubing, were drummed, labeled, and stored on-site pending analyses for appropriate disposal. Solid waste from each location was placed in a drum(s) specific to that location.

The field investigation included the collection and analysis of soil and groundwater samples. The samples were analyzed for volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). **Table 1** presents the number of samples collected per media (i.e., soil and groundwater) as well as quality assurance/quality control (QA/QC) samples. **Table 2** provides a summary of the analytical methods, as well as bottle, preservation, and holding time requirements.

2.1 Drilling and Soil Sampling

The drilling and well installation program was performed during the period of January 9 to 19, 2017. Field activities were overseen and documented by the supervising AECOM geologist. Drilling services were provided by Parratt-Wolff, Inc.

The well boring locations were adjusted in the field based on the presence of underground utilities and accessibility of the drilling equipment. A total of 16 wells were installed. The well locations were identified as MW-69 through MW-84 (**Figure 2**).

The well borings were advanced to depths between 10 ft and 20 ft using a truck-mounted drill rig or a track-mounted Geoprobe rig. All borings, except MW-70, were advanced with 4 ¼-inch (in) inside diameter (ID) HSAs.

MW-70 is located within the former building TR-2 footprint. The building was demolished, but the concrete floor slab of the building remains underneath a soil and grass cover. At MW-70, 6 ¼-in ID HSAs were used to auger through the concrete slab and then 4 ¼-in ID HSAs were used to complete the boring.

All borings were continuously sampled using direct-push sampling. Upon recovery, each soil sample was inspected for evidence of contamination (e.g., staining and odors) and screened for volatile organic vapors using a calibrated miniRae photoionization detector (PID) equipped with a 10.6 eV lamp. A generalized summary of observations at each boring is presented below. Field observations are discussed in greater detail in Section 3.1.

Well Installation Observation Summary

Well ID	Total Depth (ft)	Depth to Saturated Soils (ft)	Highest PID Reading (ppm), Depth (ft)	Apparent Impacts
MW-69	15	6.5	ND	None
MW-70	20	12.0	ND	None
MW-71	15	8.0	ND	None
MW-72	12	5.5	ND	None
MW-73	12	4.0	ND	None
MW-74	12	5.0	ND	None
MW-75	10	5.0	ND	None
MW-76	15	6.5	ND	None
MW-77	15	7.0	ND	None
MW-78	15	6.0	ND	None
MW-79	10	4.0	ND	None
MW-80	10	5.0	ND	None
MW-81	15	5.0	ND	None
MW-82	15	5.0	ND	None
MW-83	12	5.0	2.6, 1-2	Petroleum Odors
MW-84	12	5.5	ND	None

One soil sample was retained from each boring for chemical analysis. If no apparent impacts were identified, the sample was generally collected from the interval just above the saturated zone. Field observations were recorded in a dedicated, bound log book. Copies of boring logs are presented in **Appendix A**.

Soil for VOC analysis was collected using a dedicated, disposable TerraCore® sampler and placed in three 40-milliliter (ml) volatile organic analysis (VOA) vials (one containing methanol and two containing deionized water). Soil samples for PCB analysis were homogenized and then transferred into laboratory-provided 4-ounce sample containers.

2.2 Well Installation and Construction

The new monitoring wells (MW-69 through MW-84) were installed in the upper water-bearing zone. The monitoring wells were constructed with 10-slot, 2-in diameter flush-coupled polyvinyl chloride (PVC) screen and solid riser. Groundwater was observed at depths ranging from approximately 4 ft to 12 ft below ground surface (bgs). The wells were constructed with a screen length ranging from 7 ft to 10 ft, placed at a depth intended to straddle the water table surface. A NJ #0 sand filter was placed in the annular space between the well screen/riser and borehole wall and extended from the bottom of the well screen to approximately 0.5 ft to 2 ft above the top of the screen. A minimum 2-ft thick bentonite seal was placed above the sand filter. The sand filter and bentonite were added through the augers as the augers were slowly removed. Each well was completed with a flush-mount casing set in concrete. Well construction information is included in the boring logs provided in **Appendix A** and summarized in **Table 3**.

2.3 Well Development

The monitoring wells were developed during the period of January 23 through February 15, 2017 by surging and pumping. Water quality measurements of pH, conductivity, temperature, and turbidity were periodically recorded

during the development process. Well development logs are provided in **Appendix B**. Well development water was placed in drums for subsequent offsite disposal.

2.4 Groundwater Sampling

Groundwater samples were collected from the new wells during the period of February 1 through 15, 2017 using the low-flow purge technique. Water quality measurements of pH, conductivity, dissolved-oxygen, oxidation-reduction potential, temperature, and turbidity were periodically recorded during the purging process. Groundwater quality measurements were documented on AECOM purge logs which are provided in **Appendix C**. Well purge water was placed in drums for subsequent offsite disposal.

The groundwater samples were analyzed for VOCs and total and filtered PCBs. The samples for filtered PCB analyses were passed through a 0.45-micron inline filter.

2.5 Surveying

The monitoring well locations were surveyed for location and elevation by a New York State-licensed, AECOM land surveyor. Locations and elevations were measured to 0.01 ft. Location measurements were referenced to New York State Plane Central Zone North American Datum of 1983 (NAD 83) and elevations were referenced to North American Vertical Datum of 1988 (NAVD 88). Survey information is provided in **Table 3**.

2.6 Analytical Program

Soil and groundwater samples for laboratory VOC and PCB analyses were placed in pre-cleaned, laboratory-supplied glass jars, labeled, packed in a cooler with ice, and transported by courier to Eurofins Laboratories under standard chain-of-custody procedures. The samples were submitted for analytical testing under standard turnaround time. Category B deliverable packages were requested for all sample delivery groups.

3. Investigation Results

This report section provides a summary of field screening and laboratory analytical results.

3.1 Field Screening Results

Field Observations

Drilling observations generally indicated 2 ft to 8 ft of fill consisting of clayey silt with varying amounts of concrete and/or brick. Fill was not observed at locations close to Sanders Creek (MW-79 and MW-80). Saturated conditions were encountered between 4 ft and 12 ft bgs.

The fill is underlain by an interbedded clayey silt to silty clay unit with occasional silty fine sand zones. In general, no apparent contamination was observed. However, in MW-83, low PID readings were recorded from 1 ft to 4 ft bgs and petroleum odors were observed to 3 ft bgs. MW-83 is located in a parking lot. PID readings were non-detect and no odors were observed at the other 15 locations.

Groundwater Observations

Water levels were recorded at the 16 newly installed wells on February 15, 2017 (**Table 3**). No non-aqueous phase liquid (NAPL) was detected. The depth to groundwater ranged from 5.3 to 11.5 ft bgs across most of the Site. At locations MW-79 and MW-81, next to Sanders Creek, the depth to groundwater was 2.25 ft bgs and 1.53 ft bgs, respectively.

The water level data was used to generate a groundwater contour map (**Figure 3**). Overall, flow is generally north-northwest across the Site. This appears to be consistent with the last Site-wide groundwater contour map presented in EnSafe's *Corrective Measures Update Site-wide Groundwater Monitoring Report*, June 2015. Based on the February 15, 2017 data, there is an apparent high in the groundwater table in the vicinity of MW-81 and MW-83 and

an apparent low near MW-84. The Site-wide groundwater contours will be refined during the next Site-wide groundwater monitoring event, which is anticipated to occur in June 2017.

3.2 Chemical Analytical Results

The soil and groundwater chemical analytical results were validated by an AECOM chemist following NYSDEC DER-10 and USEPA Region II data validation procedures. The validated data is provided in a data usability summary report (DUSR).

The DUSR presents deviations from the relevant QC requirements and the associated qualifications to the sample data warranted by these deviations. QC items discussed in detail in the DUSR include surrogate sample recoveries, matrix spike recoveries, duplicate sample analyses, instrument calibration, and performance and method and field blank sample analyses. The report also presents copies of the laboratory reporting forms with hand written qualifications made by the data validator. The data presented in the summary tables included in this report reflect these qualifications.

A copy of the DUSR narrative is provided in Appendix D. A copy of the DUSR appendices (e.g., Form 1s), is available on request.

3.2.1 Applicable Standards, Criteria, and Guidance

Soil PCB and VOC results are compared to Part 375 Soil Cleanup Objectives (SCOs) for Protection of Public Health (Unrestricted Use). The groundwater analytical results are compared to the NYS Ambient Water Quality Standards (AWQS) and Guidance Values in Technical & Operational Guidance Series (TOGS) Version 1.1.1., June 1998, with June 2004 Addendum.

3.2.2 Soil Results

A total of 16 soil samples and one duplicate sample were collected from 16 borings and submitted to the laboratory for chemical analysis. The analytical results are presented in **Figure 4** and **Table 4**.

VOC Soil Analytical Results

Review of the VOC soil analytical results indicates that only three samples contained VOCs at concentrations above the Unrestricted Use criteria. VOCs exceeding the criteria were acetone (at locations MW-70 and MW-80) and vinyl chloride (at location MW-69). Acetone is a common laboratory contaminant.

PCB Soil Analytical Results

PCBs were not detected at concentrations exceeding the Unrestricted Use SCO of 100 micrograms per kilogram (µg/kg).

3.2.3 Groundwater Results

Groundwater samples were collected from the 16 new wells and one previously installed well (MW-08). The samples were analyzed for VOCs and total and dissolved PCBs. The analytical results are presented in **Figure 5** and **Table 5**.

VOC Groundwater Analytical Results

Only three (MW-69, MW-71, and MW-84) of the 17 locations contained compounds at concentrations above the groundwater criteria. Compounds that were detected at concentrations above the groundwater criteria included 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and vinyl chloride. The highest concentrations were present at MW-69.

PCB Groundwater Analytical Results

No PCBs were detected in the 17 wells.

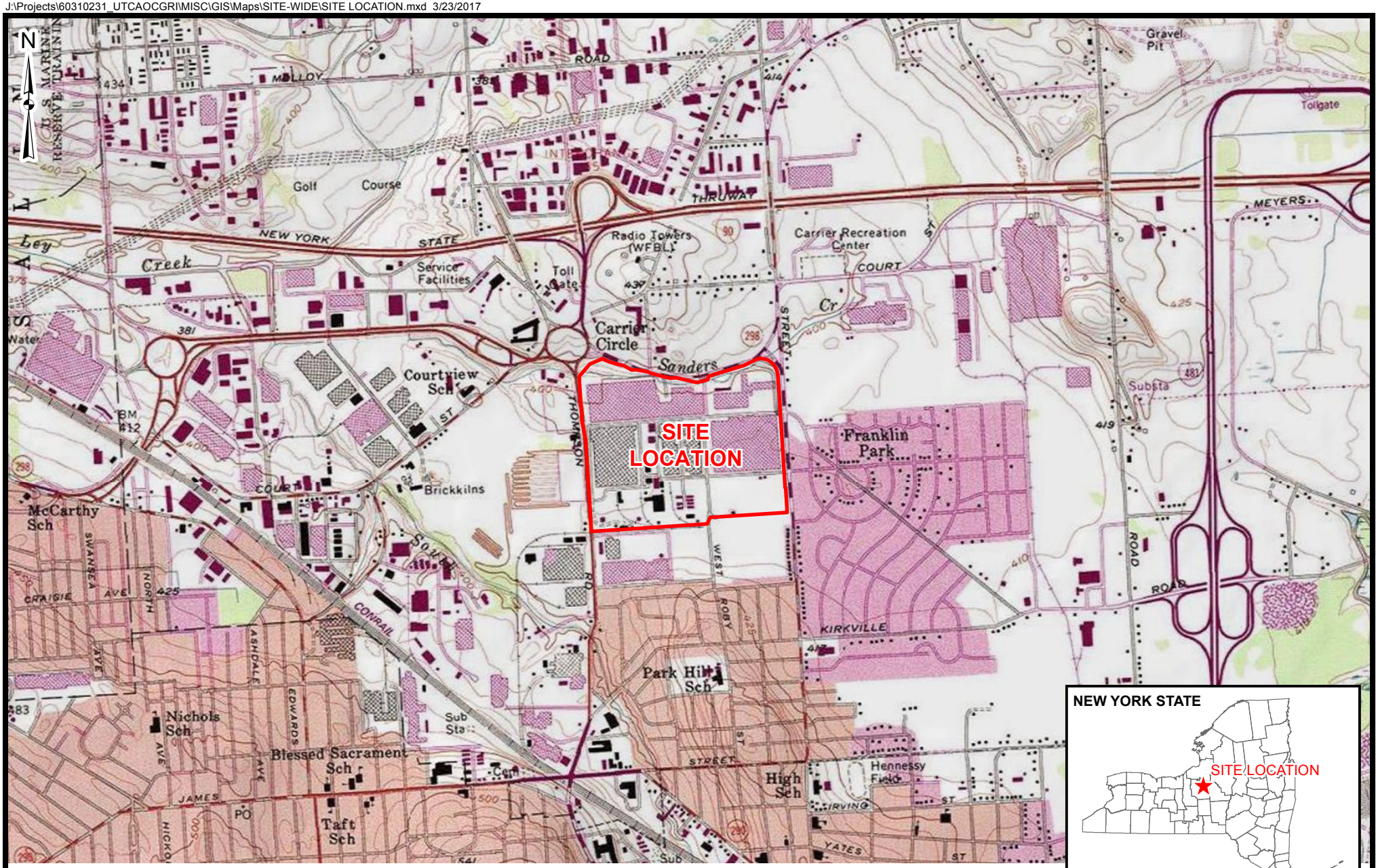
4. Conclusions and Recommendations

The Supplemental Groundwater Well Installation was completed in accordance with the NYSDEC-approved SAP. The field work involved a geophysical survey, advancing 16 soil borings, completing the 16 borings as shallow monitoring wells, and analyzing soil and groundwater samples for VOCs and PCBs. The investigation provided the following information:

- The soil boring analytical results show the only VOCs exceeding the criteria were acetone (at locations MW-70 and MW-80) and vinyl chloride (at location MW-69).
- Groundwater depth and overall flow direction to the north-northwest is consistent with previous Site-wide results.
- Groundwater analytical results show chlorinated VOC impacts in three wells (MW-69, MW-71, and MW-84).

The groundwater analytical results, in conjunction with Site-wide historical groundwater results, will be used to update the Conceptual Site Model and evaluate the need for VI investigations at Site buildings. A second round of groundwater samples should be collected from the new wells during the next Site-wide groundwater monitoring event, which is anticipated to occur in June 2017.

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\SITE-WIDE\SITE LOCATION.mxd 3/23/2017



SOURCE: 1:24,000-scale USGS Topographic Map,

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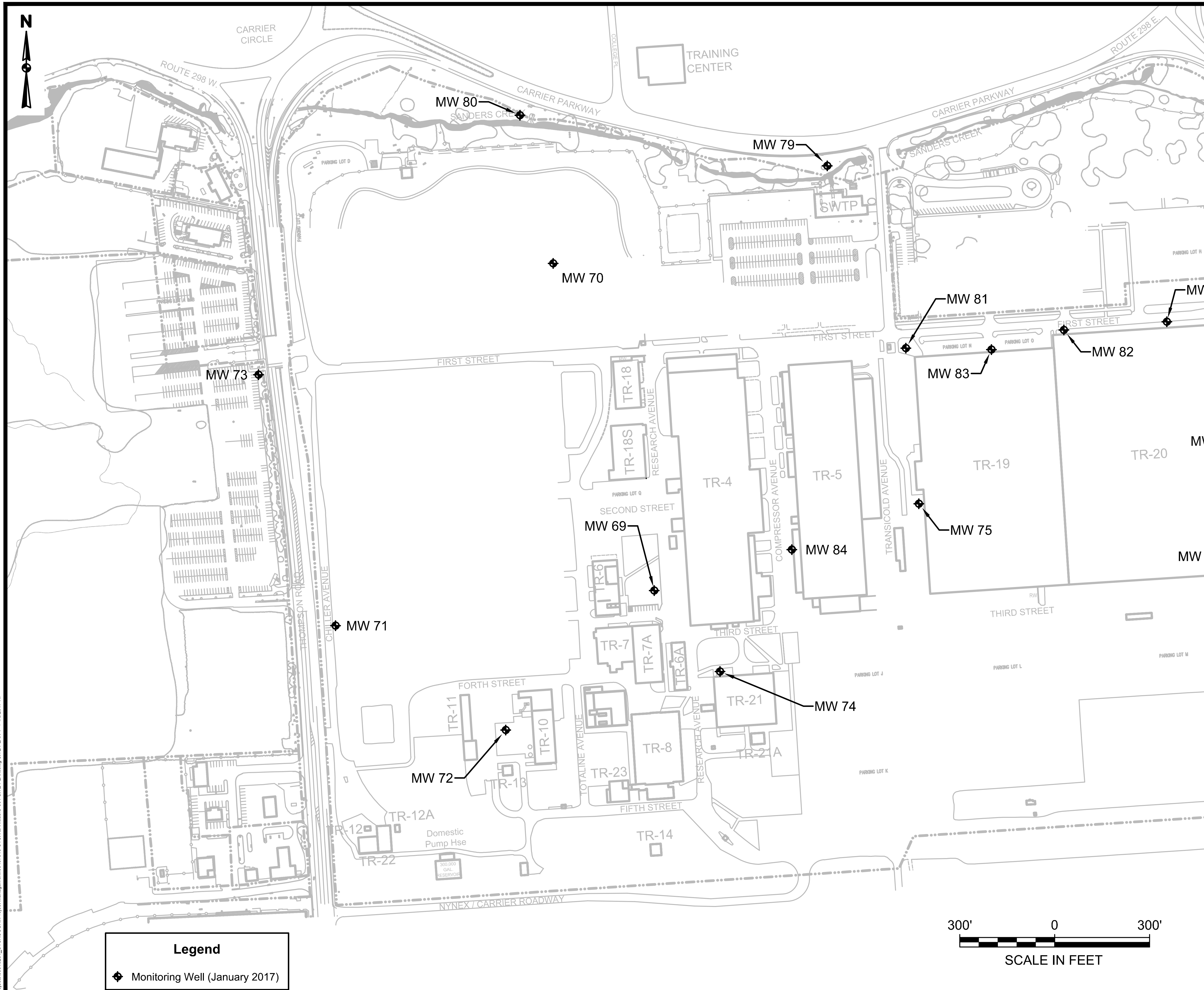
SITE-WIDE GROUNDWATER MONITORING
SUPPLEMENTAL WELL INSTALLATION
UTC/CARRIER SITE
SITE LOCATION

FIGURE 1


N
CARRIER CIRCLE
ROUTE 298 W.
TRAINING CENTER
CARRIER PARKWAY
ROUTE 298 E.
SANDERS CREEK
MW 80
MW 79
SWTP
MW 70
MW 81
MW 78
MW 82
MW 83
FIRST STREET
MW 73
TR-18
TR-18S
RESEARCH AVENUE
TR-4
TR-5
COMPRESSOR AVENUE
TRANSICOLD AVENUE
TR-19
TR-20
MW 77
KINNE STREET
FRANKLIN PARK DR.
SECOND STREET
MW 69
MW 84
MW 75
MW 76
WINCHESTER ROAD
THIRD STREET
MW 71
CHILLER AVENUE
THOMPSON ROAD
TR-6
TR-7
TR-7A
TR-6A
MW 74
TR-21
TR-21A
FORTH STREET
TR-11
TR-10
TR-8
TOTALINE AVENUE
MW 72
TR-13
TR-23
FIFTH STREET
TR-12A
TR-12
TR-22
Domestic Pump Hse
TR-14
ALTMONT PL.
NYNEX / CARRIER ROADWAY
300' 0 300'
SCALE IN FEET
Legend
Monitoring Well (January 2017)

SITE-WIDE GROUNDWATER MONITORING
SUPPLEMENTAL WELL INSTALLATION
UTC/CARRIER SITE
SAMPLE LOCATIONS

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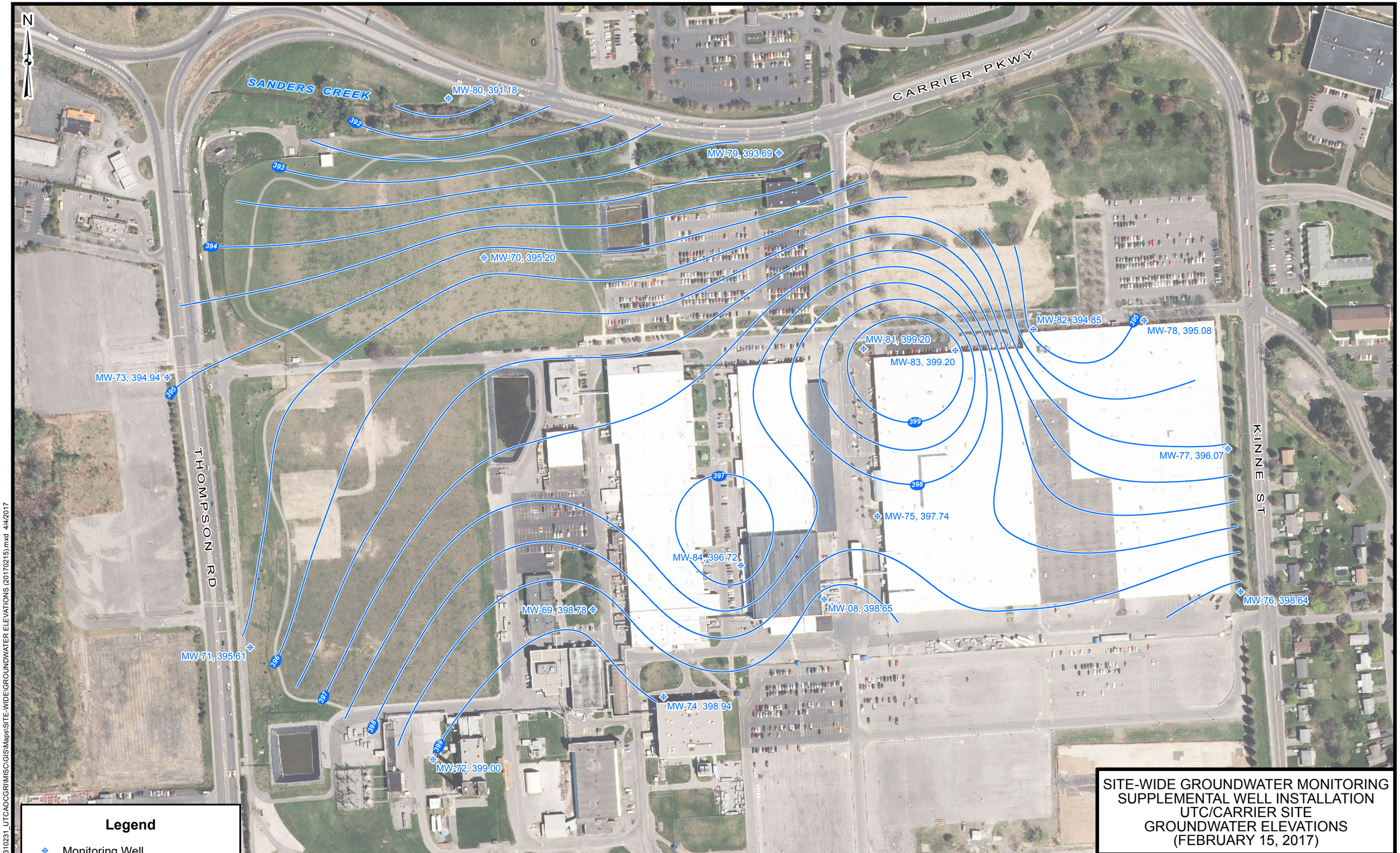
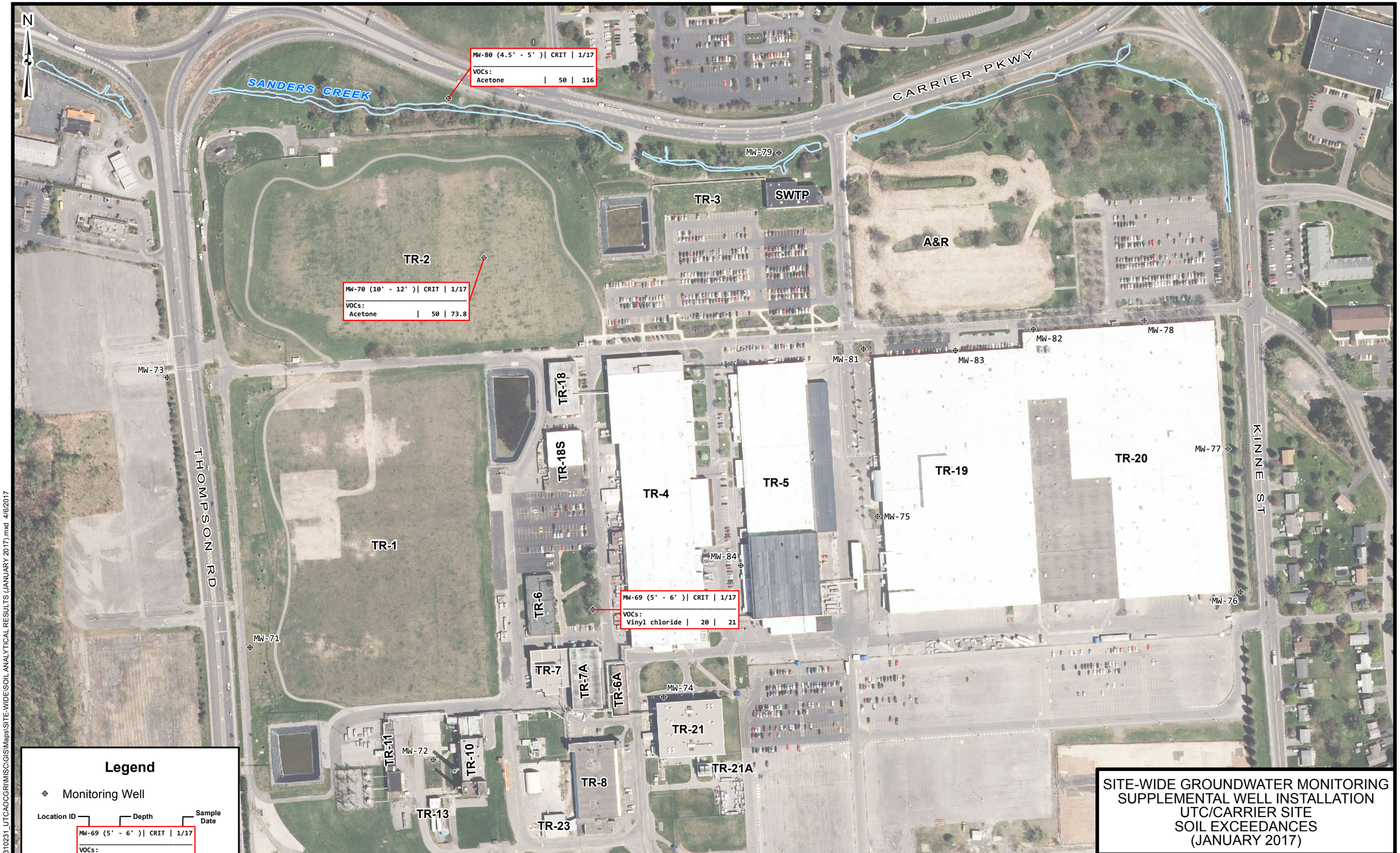
FIGURE 2


N
SANDERS CREEK
CARRIER PKWY
THOMPSON RD
KINNE ST
MW-80, 391.18
MW-79, 393.69
MW-70, 395.20
MW-73, 394.94
MW-71, 395.61
MW-69, 398.78
MW-72, 399.00
MW-74, 398.94
MW-08, 398.65
MW-84, 396.72
MW-75, 397.74
MW-81, 399.20
MW-83, 399.20
MW-82, 394.85
MW-78, 395.08
MW-77, 396.07
MW-76, 398.64
392
393
394
395
396
397
398
399
Legend
Monitoring Well
Groundwater Elevation Contour
NOTES: Elevation shown in feet above mean sea level (ft amsl); NAVD 88 Datum
SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015
250 0 250 Feet
SITE-WIDE GROUNDWATER MONITORING
SUPPLEMENTAL WELL INSTALLATION
UTC/CARRIER SITE
GROUNDWATER ELEVATIONS
(FEBRUARY 15, 2017)
AECOM
FIGURE 3
J:\Projects\60310231_UTCAOCGR\MISC\GIS\Maps\SITE-WIDE\GROUNDWATER ELEVATIONS (20170215).mxd 4/4/2017



Legend

- Monitoring Well

Location ID — Depth — Sample Date

MW-69 (5' - 6')| CRIT | 1/17

VOCs:
Vinyl chloride | 20 | 21

Compound — Criteria — Result

CRITERIA: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Unrestricted.
NOTES: Units shown in µg/kg
SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

250 0 250 Feet

SITE-WIDE GROUNDWATER MONITORING SUPPLEMENTAL WELL INSTALLATION UTC/CARRIER SITE SOIL EXCEEDANCES (JANUARY 2017)

AECOM

FIGURE 4

J:\Projects\60310231_UTCAOCGR\MISC\GIS\Maps\SITE-WIDE\SOIL ANALYTICAL RESULTS (JANUARY 2017).mxd 4/6/2017

N

SANDERS CREEK

CARRIER PKWY

THOMPSON RD

KINNE ST

MW-80

MW-79

MW-70

MW-73

MW-81

MW-82

MW-83

MW-78

MW-77

MW-75

MW-84

MW-08

MW-76

MW-74

MW-72

TR-1

TR-2

TR-3

SWTP

A&R

TR-4

TR-5

TR-6

TR-7

TR-7A

TR-6A

TR-8

TR-10

TR-11

TR-13

TR-18

TR-18S

TR-19

TR-20

TR-21

TR-21A

TR-23

MW-69	CRIT	2/17
VOCs:		
1,1-Dichloroethane	5	26.5
1,2-Dichloroethene (cis)	5	287
1,2-Dichloroethene (trans)	5	18.5
Trichloroethene	5	3170
Vinyl chloride	2	99

MW-71	CRIT	2/17
VOCs:		
1,2-Dichloroethene (cis)	5	31.4
Trichloroethene	5	40.1
Vinyl chloride	2	3.54

MW-84	CRIT	2/17
VOCs:		
Trichloroethene	5	46.4

Legend

Monitoring Well

MW-84	CRIT	2/17
VOCs:		
Trichloroethene	5	46.4

Location ID — Sample Date

Compound — Criteria — Result

CRITERIA: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

NOTES: Units shown in µg/L

SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

250 0 250 Feet

SITE-WIDE GROUNDWATER MONITORING SUPPLEMENTAL WELL INSTALLATION UTC/CARRIER SITE GROUNDWATER EXCEEDANCES (FEBRUARY 2017)

AECOM

FIGURE 5

J:\Projects\60310231_UTCAOCGR\MISC\GIS\Maps\SITE-WIDE\GROUNDWATER ANALYTICAL RESULTS (FEBRUARY 2017).mxd 4/6/2017

Table 1

Summary of Investigation Samples

Supplemental Groundwater Monitoring Wells

MATRIX/ANALYSIS	Analytical Method	Field Sample Quantity	Matrix Spike (MS) or LCS	MS Duplicate or Matrix Duplicate	Field Duplicate	Equipment/ Field Blank	Trip Blank	Total Analyses
Well Boring Soil Samples								
Volatile Organics	SW-846 8260C	16	1	1	1	0	0	19
Polychlorinated Biphenyls	SW-846 8082A	16	1	1	1	0	0	19
Groundwater Samples								
Volatile Organics	SW-846 8260C	17	1	1	1	0	5	25
Polychlorinated Biphenyls	SW-846 8082A	17	1	1	1	0	0	20

Notes:

PCBs = Polychlorinated Biphenyls

LCS = Laboratory Control Sample

Table 2
Sample Bottle, Volume, Preservation, and Holding Time Summary
UTC/Carrier Site-wide Well Network

MATRIX/ANALYSIS	Sample Prep Method (1)	Analytical Method (1)	Sample Bottles		Preservation	Holding Time	
			Mat'l	Size		Extraction	Analysis
Soil Samples							
Volatile Organics*	SW-846 5035A	SW-846 8260C	G	1-40ml VOA vial w/ septa	Methanol	NA	48 hours
			G	2-40ml VOA vial w/ septa	None (DI Water)	NA	48 hours
Polychlorinated Biphenyls	SW-846 3541	SW-846 8082A	G	4 oz	None	14 days	40 days from extraction
Groundwater Samples							
Volatile Organics	SW-846 5030B	SW-846 8260C	G	40 mL VOA vial w/ septa	HCl to pH<2	NA	14 days
Polychlorinated Biphenyls	SW-846 3520C	SW-846 8082A	G	1-L amber	None	7 days	40 days from extraction

Notes:

(1) SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.

G = Glass

* = Soil samples collected using dedicated, disposable TerraCore samplers to fill laboratory provided bottleware.

TABLE 3
Monitoring Well Details
Supplemental Groundwater Monitoring Wells

Monitoring Well	Date Installed/ Advanced	Coordinates N	Coordinates E	Surface Elevation (ft)	Total Depth (ft bgs)	Hole Diameter (inches)	Well Diameter (inches)	Measuring Point Elevation (ft)	Screen Interval (ft bgs)	Screen Interval (Elevations)	Protective Casing	Depth to Water* (ft bgs)
MW-69	1/9/17	1123575.09	953238.60	404.04	15.0	8	2	403.70	5.0 - 15.0	399.0 - 389.0	Flushmount	4.92
MW-70	1/10/17	1124609.37	952918.96	406.73	20.0	8 (10 from 0-5ft)	2	406.24	10.0 - 20.0	396.7 - 386.7	Flushmount	11.03
MW-71	1/11/17	1123463.97	952230.85	405.24	15.0	8	2	404.95	5.0 - 15.0	400.2 - 390.2	Flushmount	9.34
MW-72	1/11/17	1123133.97	952768.81	404.40	15.0	8	2	404.10	2.0 - 12.0	402.4 - 392.4	Flushmount	5.10
MW-73	1/11/17	1124257.22	951987.57	403.92	15.0	8	2	403.40	2.0 - 12.0	401.9 - 391.9	Flushmount	8.43
MW-74	1/12/17	1123318.97	953446.58	405.99	12.0	8	2	405.64	2.0 - 12.0	404.0 - 394.0	Flushmount	6.70
MW-75	1/12/17	1123849.47	954074.99	405.63	10.0	8	2	405.29	3.0 - 10.0	402.6 - 395.6	Flushmount	7.55
MW-76	1/13/17	1123627.57	955141.81	406.60	15.0	8	2	406.07	5.0 - 15.0	401.6 - 391.6	Flushmount	7.43
MW-77	1/13/17	1124047.75	955105.46	405.36	15.0	8	2	404.81	5.0 - 15.0	400.4 - 390.4	Flushmount	8.74
MW-78	1/16/17	1124424.80	954858.90	402.93	16.0	8	2	402.58	5.0 - 15.0	397.9 - 387.9	Flushmount	7.50
MW-79	1/17/17	1124917.99	953785.24	395.94	10.0	8	2	395.69	2.0 - 10.0	393.9 - 385.9	Flushmount	2.00
MW-80	1/17/17	1125077.83	952814.01	392.71	12.0	8	2	392.31	2.0 - 10.0	390.7 - 382.7	Flushmount	1.13
MW-81	1/18/17	1124341.64	954033.81	406.44	16.0	8	2	406.10	5.0 - 15.0	401.4 - 391.4	Flushmount	6.90
MW-82	1/18/17	1124398.72	954533.30	404.63	12.0	8	2	404.19	2.0 - 12.0	402.6 - 392.6	Flushmount	9.34
MW-83	1/19/17	1124336.76	954304.18	405.50	12.0	8	2	404.92	2.0 - 12.0	403.5 - 393.5	Flushmount	5.72
MW-84	1/19/17	1123704.67	953673.48	403.90	12.0	8	2	403.57	2.0 - 12.0	401.9 - 391.9	Flushmount	6.85

Notes

1. Horizontal grid based on New York State Plane Central Zone (NAD 83).
2. Vertical datum NAVD 88.

* - Depth to water measured on February 15, 2017

TABLE 4
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
SOIL ANALYTICAL RESULTS

Location ID			MW-69	MW-70	MW-71	MW-72	MW-73
Sample ID			MW-069 (5-6)	MW-070 (10-12)	MW-071 (7-8)	MW-072-(5.0-5.5)	MW-073-(3.5-4.0)
Matrix			Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)			5.0-6.0	10.0-12.0	7.0-8.0	5.0-5.5	3.5-4.0
Date Sampled			01/09/17	01/10/17	01/10/17	01/11/17	01/11/17
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (cis)	UG/KG	250	64.7	1.81 U	18.6 U	1.76 U	1.65 J
1,2-Dichloroethene (trans)	UG/KG	190	12.4	2.59 U	26.5 U	2.52 U	1.98 U
Acetone	UG/KG	50	33.0 J	73.8 J	213 UJ	20.3 UJ	15.9 UJ
Methyl ethyl ketone (2-Butanone)	UG/KG	120	7.79 UJ	17.9 J	89.4 UJ	8.50 UJ	6.66 UJ
sec-Butylbenzene	UG/KG	11000	0.81 U	0.91 U	9.35 U	0.89 U	0.70 U
Tetrachloroethene	UG/KG	1300	1.49 U	1.67 U	17.1 U	1.63 U	1.27 U
Trichloroethene	UG/KG	470	1.19 U	1.33 U	13.7 U	1.30 U	1.47 J
Vinyl chloride	UG/KG	20	21.0	1.65 U	16.9 U	1.61 U	2.54 J
Polychlorinated Biphenyls							
Aroclor 1260	UG/KG	-	16.1 J	10.7 U	9.66 U	10.9 U	10.3 U
Total Polychlorinated Biphenyls	UG/KG	100	16.1	ND	ND	ND	ND

*- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use, including CP-51 Table 1, Effective 12/2/10.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.
ND - Not Detected

Only Detected Results Reported.

Detection Limits shown are MDL

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[LOGDATE] BETWEEN #1/9/2017# AND #1/19/2017# AND [MATRIX] = 'SO'

TABLE 4
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
SOIL ANALYTICAL RESULTS

Location ID			MW-74	MW-75	MW-75	MW-76	MW-77
Sample ID			MW-074 (4.5-5.0)	FD-011217	MW-075 (5-6)	MW-076 (7-7.5)	MW-077 (6.5-7.0)
Matrix			Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)			4.5-5.0	5.0-6.0	5.0-6.0	7.0-7.5	6.5-7.0
Date Sampled			01/12/17	01/12/17	01/12/17	01/13/17	01/13/17
Parameter	**Units**	*		Field Duplicate (1-1)			
Volatile Organic Compounds							
1,2-Dichloroethene (cis)	UG/KG	250	1.65 U	1.65 U	2.18 U	1.80 U	1.75 U
1,2-Dichloroethene (trans)	UG/KG	190	2.35 U	2.36 U	3.11 U	2.58 U	2.50 U
Acetone	UG/KG	50	18.9 UJ	19.0 UJ	25.0 UJ	20.7 UJ	20.1 UJ
Methyl ethyl ketone (2-Butanone)	UG/KG	120	7.94 UJ	7.96 UJ	10.5 UJ	8.69 UJ	8.43 UJ
sec-Butylbenzene	UG/KG	11000	0.83 U	0.83 U	1.10 U	0.91 U	0.88 U
Tetrachloroethene	UG/KG	1300	1.52 U	1.52 U	2.01 U	1.66 U	1.61 U
Trichloroethene	UG/KG	470	1.21 U	1.21 U	1.60 U	1.33 U	1.29 U
Vinyl chloride	UG/KG	20	1.50 U	1.50 U	1.98 U	1.64 UJ	1.59 UJ
Polychlorinated Biphenyls							
Aroclor 1260	UG/KG	-	9.60 U	11.1 U	11.5 U	11.0 U	11.1 U
Total Polychlorinated Biphenyls	UG/KG	100	ND	ND	ND	ND	ND

*- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use, including CP-51 Table 1, Effective 12/2/10.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.
ND - Not Detected

Only Detected Results Reported.

Detection Limits shown are MDL

TABLE 4
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
SOIL ANALYTICAL RESULTS

Location ID			MW-78	MW-79	MW-80	MW-81	MW-82
Sample ID			MW-078 (6-8)	MW-079 (3-4)	MW-080 (4.5-5.0)	MW-081 (6-7)	MW-082 (5-5.5)
Matrix			Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)			6.0-8.0	3.0-4.0	4.5-5.0	6.0-7.0	5.0-5.5
Date Sampled			01/16/17	01/17/17	01/17/17	01/18/17	01/18/17
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (cis)	UG/KG	250	1.87 U	1.54 U	2.51 U	1.71 U	1.71 U
1,2-Dichloroethene (trans)	UG/KG	190	2.67 U	2.20 U	3.58 U	2.45 U	2.44 U
Acetone	UG/KG	50	21.5 UJ	17.7 UJ	116 J	38.5 J	19.6 UJ
Methyl ethyl ketone (2-Butanone)	UG/KG	120	9.00 UJ	7.42 UJ	24.0 J	8.25 UJ	8.23 UJ
sec-Butylbenzene	UG/KG	11000	0.94 U	0.78 U	1.26 U	0.86 U	0.86 U
Tetrachloroethene	UG/KG	1300	1.72 U	1.42 U	2.31 U	1.58 U	1.57 U
Trichloroethene	UG/KG	470	1.37 U	1.13 U	1.85 U	1.26 U	1.26 U
Vinyl chloride	UG/KG	20	1.70 UJ	1.40 UJ	2.29 UJ	1.56 UJ	1.56 UJ
Polychlorinated Biphenyls							
Aroclor 1260	UG/KG	-	11.0 U	9.98 U	12.9 U	10.5 U	10.6 U
Total Polychlorinated Biphenyls	UG/KG	100	ND	ND	ND	ND	ND

*- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use, including CP-51 Table 1, Effective 12/2/10.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.
ND - Not Detected

Only Detected Results Reported.

Detection Limits shown are MDL

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TABLE 4
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
SOIL ANALYTICAL RESULTS

Location ID			MW-83	MW-84
Sample ID			MW-083 (1-2)	MW-084 (5-5.5)
Matrix			Soil	Soil
Depth Interval (ft)			1.0-2.0	5.0-5.5
Date Sampled			01/19/17	01/19/17
Parameter	**Units**	*		
Volatile Organic Compounds				
1,2-Dichloroethene (cis)	UG/KG	250	1.36 U	2.20 U
1,2-Dichloroethene (trans)	UG/KG	190	1.94 U	3.15 U
Acetone	UG/KG	50	16.2 J	25.3 UJ
Methyl ethyl ketone (2-Butanone)	UG/KG	120	6.56 UJ	10.6 UJ
sec-Butylbenzene	UG/KG	11000	2.27	1.11 U
Tetrachloroethene	UG/KG	1300	1.25 U	2.34
Trichloroethene	UG/KG	470	1.00 U	1.62 U
Vinyl chloride	UG/KG	20	1.24 U	2.01 U
Polychlorinated Biphenyls				
Aroclor 1260	UG/KG	-	28.5	11.4 U
Total Polychlorinated Biphenyls	UG/KG	100	28.5	ND

*- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use, including CP-51 Table 1, Effective 12/2/10.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.
ND - Not Detected

Only Detected Results Reported.

Detection Limits shown are MDL

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TABLE 5
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
GROUNDWATER ANALYTICAL RESULTS

Location ID			MW-08	MW-69	MW-70	MW-71	MW-71
Sample ID			MW-08	MW-69	MW-70	Dup-1	MW-71
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/08/17	02/01/17	02/08/17	02/02/17	02/02/17
Parameter	**Units**	*				Field Duplicate (1-1)	
Volatile Organic Compounds							
1,1-Dichloroethane	UG/L	5	1.00 U	26.5	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	5	1.00 U	287	1.00 U	29.0	31.4
1,2-Dichloroethene (trans)	UG/L	5	1.00 U	18.5	1.00 U	1.91	1.85
1,4-Dioxane	UG/L	-	20.0 U	1,000 U	20.0 U	13.3 J	20.0 U
Benzene	UG/L	1	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	UG/L	5	1.00 UJ	50.0 U	1.00 UJ	1.00 UJ	1.00 UJ
Trichloroethene	UG/L	5	1.00 UJ	3,170	1.00 UJ	37.2	40.1
Vinyl chloride	UG/L	2	1.00 U	99.0	1.00 U	3.01	3.54

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

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TABLE 5
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
GROUNDWATER ANALYTICAL RESULTS

Location ID			MW-72	MW-73	MW-74	MW-75	MW-76
Sample ID			MW-72	MW-73	MW-74	MW-75	MW-76
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/01/17	02/01/17	02/01/17	02/02/17	02/02/17
Parameter	**Units**	*					
Volatile Organic Compounds							
1,1-Dichloroethane	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	5	1.12	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (trans)	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	-	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Benzene	UG/L	1	0.29	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 UJ	1.00 UJ
Trichloroethene	UG/L	5	1.93	1.00 U	1.00 U	1.15	1.00 U
Vinyl chloride	UG/L	2	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
GROUNDWATER ANALYTICAL RESULTS

Location ID			MW-77	MW-78	MW-79	MW-80	MW-81
Sample ID			MW-77	MW-78	MW-79	MW-80	MW-81
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			02/07/17	02/07/17	02/15/17	02/15/17	02/08/17
Parameter	**Units**	*					
Volatile Organic Compounds							
1,1-Dichloroethane	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (trans)	UG/L	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	-	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Benzene	UG/L	1	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	UG/L	5	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ
Trichloroethene	UG/L	5	1.00 UJ	1.00 UJ	1.00 U	1.00 U	1.00 UJ
Vinyl chloride	UG/L	2	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
UTC/CARRIER SITE
SUPPLEMENTAL WELL INSTALLATION
GROUNDWATER ANALYTICAL RESULTS

Location ID			MW-82	MW-83	MW-84
Sample ID			MW-82	MW-83	MW-84
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			02/07/17	02/07/17	02/01/17
Parameter	**Units**	*			
Volatile Organic Compounds					
1,1-Dichloroethane	UG/L	5	1.00 U	0.51 J	1.00 U
1,2-Dichloroethene (cis)	UG/L	5	1.00 U	1.00 U	1.99
1,2-Dichloroethene (trans)	UG/L	5	1.00 U	1.00 U	4.22
1,4-Dioxane	UG/L	-	20.0 U	20.0 U	20.0 U
Benzene	UG/L	1	1.00 U	1.00 U	1.00 U
Tetrachloroethene	UG/L	5	1.00 UJ	1.00 UJ	2.99
Trichloroethene	UG/L	5	1.00 UJ	1.00 UJ	46.4
Vinyl chloride	UG/L	2	1.00 U	1.00 U	1.00 U

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

U - Not detected above the reported quantitation limit. ; J - The reported concentration is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

Appendix A - Boring Logs

AECOM

TEST BORING LOG

BORING NO. : MW-69

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123575.09 **EASTING:** 953238.60
GROUND ELEVATION:	404.04'
DATE STARTED:	1/9/17
DATE FINISHED:	1/9/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey silt with roots, trace coarse sand (FILL)	Flush-mount roadbox set in concrete	Moist
						Light gray brown clayey silt (FILL)		
						Brown clayey silt, some fine to coarse gravel (FILL)	Hole Plug (0.5-3.0')	
						Cobble size concrete piece at 4.0'	2" PVC Riser (0'-5')	
						Brown Clayey SILT, some fine gravel (ML) Dark gray to black staining around gravel, no odor		
-5		5-10		84	ND	Gray Clayey SILT, some fine sand, trace fine gravel (ML)		
						Light Brown Clayey SILT with dilatent silty fine sand zones (ML)		Wet @6.5'
							NJ #0 US Silica (3'-15')	
-10		10-15		100	ND	Light Brown Clayey SILT with fine sandy silt zones (ML)	10-slot 2" PVC screen (5'-15')	
						Gray Silty CLAY (CL)		
						Gray Silty fine to medium SAND (coarsening downward) (SM)		
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 5-6' for analysis of VOCs and PCBs

TEST BORING LOG

AECOM

BORING NO. :	**MW-70**
PROJECT/PROJECT LOCATION:	**UTC Supplemental GW**
SHEET:	**1 OF 1**
CLIENT:	**UTC**
JOB NO. :	60528299
BORING CONTRACTOR:	**Parratt-Wolff**
NORTHING:	1124609.37 **EASTING:** 952918.96
GROUNDWATER:	
GROUND ELEVATION:	406.73'
DATE STARTED:	1/10/17
DATE FINISHED:	1/9/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4" & 6 1/4"2"			
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey silt (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown silt, some gravel, trace clay (FILL) Geotextile fabric at 1.5'		
						Gray coarse gravel (FILL)		
						Asphalt over concrete.		
						Concrete		
						No Recovery, Augered through Concrete, and likely subase gravel.	Hole Plug (0.5-8.0')	
-5		5-10		38	ND	Brown silty clay, some gravel (FILL)	2" PVC Riser (0'-10')	
						Concrete and gravel (FILL)		
						Brown Silty CLAY, trace fine gravel and coarse sand (CL)		
-10		10-15		60	ND	Brown Silty CLAY (CL)		
						Brown Silty CLAY with silty fine sand layers (CL)		Wet @12'
							NJ #0 US Silica (8'-20')	
-15		15-20		50	ND	Brown Silty CLAY with silt seams (CL)	10-slot 2" PVC screen (10'-20')	
						End of boring @ 20.0'		
-20								

COMMENTS: Boring hand cleared to 2.2' bgs then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 10-12' for analysis of VOCs and PCBs (plus MS/MSD)

6-1/4" ID HSAs used to auger through concrete to 5' depth, 4-1/4" ID HSAs used for remainder of hole.

BORING NO. : MW-70

AECOM

TEST BORING LOG

BORING NO. : MW-71

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123463.97 **EASTING:** 952230.85
GROUND ELEVATION:	405.24'
DATE STARTED:	1/11/17
DATE FINISHED:	1/10/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown silty clay with gravel (FILL)	Flush-mount roadbox set in concrete	Moist
						Dark gray silty gravel (FILL)	Hole Plug (0.5-3.0')	
							2" PVC Riser (0'-5)	
-5		5-10		60	ND	Gray silt with coarse sand (FILL)		Very Moist at 7'
						Brown to gray reworked clayey silt, some coarse sand (FILL)		
						Light brown Clayey SILT, some fine sand (ML)		Wet @8'
						Brown silty fine SAND (SM)	NJ #0 US Silica (3'-15')	
-10		10-15		80	ND	Brown to gray Silty fine SAND, with clay seams. (SM)	10-slot 2" PVC screen (5'-15')	
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 7-8' for analysis of VOCs and PCBs.

Moved 7' east of proposed location due to refusal at 7' (on possible abandoned sewer line).

AECOM

TEST BORING LOG

BORING NO. : MW-72

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123133.97 **EASTING:** 952768.81
GROUND ELEVATION:	404.40'
DATE STARTED:	1/11/17
DATE FINISHED:	1/11/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey silt, some fine to coarse gravel, trace brick (FILL)	Flush-mount roadbox set in concrete; Hole Plug (0.5-1.5'); 2" PVC Riser (0'-2')	Moist
-5		5-10		80	ND	Brown Silty CLAY with silty fine sand stringers (CL)		Wet at 5.5'
						Brown Silty fine SAND (SM)	NJ #0 US Silica (1.5'-12'); 10-slot 2" PVC screen (2'-12')	
-10		10-15		100	ND	Brown Silty CLAY (CL)		
						Brown Silty fine SAND (SM)		
						Gray fine SAND (SP)	Natural collapse (did not auger)	
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 5-5.5' for analysis of VOCs and PCBs.

BORING NO. : MW-72

AECOM

TEST BORING LOG

BORING NO. : MW-73

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124257.22 **EASTING:** 951987.57
GROUND ELEVATION:	403.92'
DATE STARTED:	1/11/17
DATE FINISHED:	1/11/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-3		NA	ND	Brown silty clay, some gravel, 2-4" layers of asphalt debris (FILL)	Flush-mount roadbox set in concrete	Moist
						Red Brown Silty CLAY, trace to some fine to coarse gravel, some fine sand (CL)	Hole Plug (0.5-1.5')	
		3-5		75	ND	Red Brown fine Sandy SILT, trace gravel. Pushed coarse gravel 4.5-5.0' (ML)	2" PVC Riser (0'-2')	
-5		5-10		80	ND	Red brown fine SAND and SILT, some coarse sand, turns brown at 9' (SM)		Wet at 4.0'
-10		10-15		100	ND		NJ #0 US Silica (1.5'-12')	
						Brown fine SAND, trace silt (SP)	10-slot 2" PVC screen (2'-12')	
-15						End of boring @ 15.0'	Natural collapse (did not auger)	
-20								

COMMENTS: Boring hand cleared to 3' bgs (native soils) then advanced with truck mounted Ingersol Rand A-300 rig.

Collected sample from 3.5-4.0' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-74

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123318.97 **EASTING:** 953446.58
GROUND ELEVATION:	405.99'
DATE STARTED:	1/12/17
DATE FINISHED:	1/12/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4.5		NA	ND	Brown organic topsoil (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown clayey silt, some fine to coarse gravel (FILL)	Hole Plug (0.5-1.5')	
						Brown silt, some clay, with cobbles and rounded gravel (FILL)	2" PVC Riser (0'-2')	
-5		4.5-10		82	ND	Brown clayey silt and gravel (FILL)		Wet at 5.0'
						Dark gray to black medium to coarse sand and gravel, some silt (FILL)		
						Brown Clayey SILT with silty fine sand seams (ML)	NJ #0 US Silica (1.5'-12')	
-10		10-12		100	ND		10-slot 2" PVC screen (2'-12')	
						Gray Clayey SILT with silty CLAY interbeds (ML)		
-15						End of boring @ 12.0'		
-20								

COMMENTS: Boring hand cleared to 4.5' bgs (refusal) then advanced with track mounted 7822DT Geoprobe rig.

Collected sample from 4.5-5.0' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-75

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123849.47 **EASTING:** 954074.99
GROUND ELEVATION:	405.63'
DATE STARTED:	1/12/17
DATE FINISHED:	1/12/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				

* POCKET PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown organic silt, with roots (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown clayey silt with fine to coarse gravel (FILL)		
						Black asphalt	Hole Plug (0.5-2.0')	
						Brown gravel, some silt (FILL)		
						Brown Clayey SILT (ML)	2" PVC Riser (0'-3')	
						Brown Clayey SILT with silty clay seams (ML)		
-5		5-10		100	ND	Brown Silty CLAY with silt to clayey silt seams (CL)		Wet at 5.0'
						Brown Silty fine SAND, interbedded with clayey silt (SM)	NJ #0 US Silica (2.0'-10')	
						Gray Silty Fine SAND (SM)	10-slot 2" PVC screen (3'-10')	
-10						End of boring @ 10.0'		
-15								
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 7822DT Geoprobe rig.

Collected sample from 5-6'(plus duplicate FD-011217) for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-76

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123627.57 **EASTING:** 955141.81
GROUND ELEVATION:	406.60'
DATE STARTED:	1/13/17
DATE FINISHED:	1/13/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-7		NA	ND	Brown clayey silt, some fine gravel, trace coarse fravel, trace cobble (FILL)	Flush-mount roadbox set in concrete; Hole Plug (0.5-3.0'); 2" PVC Riser (0'-5')	Moist
-5		7-10		100	ND	Brown Silty Fine SAND to fine sandy SILT with thin clayey silt interbeds (SM)	NJ #0 US Silica (3'-15')	Wet between 6.0 and 7.0'
-10		10-15		100	ND	Brown Silt, some fine sand (ML)	10-slot 2" PVC screen (5'-15')	
						Gray silty fine SAND (SM)		
						Gray fine sandy SILT (ML)		
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 7' bgs then advanced with track mounted 7822DT Geoprobe rig.

Collected sample from 7-7.5' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-77

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124047.75 **EASTING:** 955105.46
GROUND ELEVATION:	405.36'
DATE STARTED:	1/13/17
DATE FINISHED:	1/13/17
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-6		NA	ND	Brown clayey silt, some fine to coarse gravel, trace cobble (FILL)	Flush-mount roadbox set in concrete; Hole Plug (0.5-3.0'); 2" PVC Riser (0'-5')	Moist
-5		6-10		100	ND	Brown silty CLAY, trace fine gravel (CL); Brown fine sandy SILT (ML); Brown clayey SILT (ML); Brown silty fine SAND (SM)		Wet at 7.0'
-10		10-15		100	ND	Brown silty CLAY (CL); Brown silty fine SAND (SM)	NJ #0 US Silica (3'-15'); 10-slot 2" PVC screen (5'-15')	
-15						End of boring @ 15.0'		
-20								

COMMENTS: Boring hand cleared to 6' bgs then advanced with track mounted 7822DT Geoprobe rig.

Collected sample from 6.5-7.0' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-78

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124424.80 **EASTING:** 954858.90
GROUND ELEVATION:	402.93'
DATE STARTED:	1/16/17
DATE FINISHED:	1/13/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-6		NA	ND	Brown organic clayey silt with roots (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown clayey silt with gravel and cobbles (FILL)	Hole Plug (0.5-3.0')	
						Brown clayey silt, some gravel (FILL)	2" PVC Riser (0'-5')	
-5		6-8		35	ND	Brown silt fine SAND (SM)		Wet at 6.0'
		8-12		75	ND	Brown Silty CLAY (CL)		
						Brown silty fine SAND with fine to medium sand zones (SM)	NJ #0 US Silica (3'-15')	
-10						Gray fine SAND, trace to some silt (SP)	10-slot 2" PVC screen (5'-15')	
		12-16		88	ND	Gray fine SAND, trace silt (SP)		
-15							Natural collapse (15-16')	
						End of boring @ 16.0'		
-20								

COMMENTS: Boring hand cleared to 6' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 6-8' for analysis of VOCs and PCBs.

BORING NO. : MW-78

AECOM

TEST BORING LOG

BORING NO. : MW-79

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124917.99 **EASTING:** 953785.24
GROUND ELEVATION:	395.94'
DATE STARTED:	1/17/17
DATE FINISHED:	1/17/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE
DATE	TIME	LEVEL	TYPE	TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey SILT, some fine gravel, trace cobble (ML)	Flush-mount roadbox set in concrete	Moist
						Light brown clayey SILT, trace to some fine sand (ML)	Hole Plug (0.5-1.5')	
						Gray SILT, trace to some fine sand (ML)	2" PVC Riser (0'-2')	Wet at 4.0'
-5		5-8		80	ND	Gray brown Silty CLAY, trace silt seams (CL)	NJ #0 US Silica (1.5'-10')	
		8-10		100	ND	Gray Silty CLAY with thin silty fine sand partings (CL)	10-slot 2" PVC screen (2'-10')	
-10						End of boring @ 10.0'		
-15								
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 3-4' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-80

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1125077.83 **EASTING:** 952814.01
GROUND ELEVATION:	392.71'
DATE STARTED:	1/17/17
DATE FINISHED:	1/17/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE
DATE	TIME	LEVEL	TYPE	TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown silty CLAY to clayey SILT, trace to some fine to coarse gravel (ML)	Flush-mount roadbox set in concrete	Moist
						Gray clayey SILT, trace fine gravel (ML)	Hole Plug (0.5-1.5')	
-5		5-8		50	ND	Light brown silty CLAY with wood (CL)	2" PVC Riser (0'-2')	Wet at 5.0'
						Light brown silty fine SAND (SM)	NJ #0 US Silica (1.5'-10')	
						Light gray brown silty CLAY (CL)	10-slot 2" PVC screen (2'-10')	
-10		8-12		100	ND	Light gray brown CLAY (CL)	Natural collapse (10-12')	
						End of boring @ 12.0'		
-15								
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 4.5-5.0' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-81

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124341.64 **EASTING:** 954033.81
GROUND ELEVATION:	406.44'
DATE STARTED:	1/18/17
DATE FINISHED:	1/18/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey silt (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown silt and gravel, some clay (FILL)		
						Asphalt and concrete (FILL)	Hole Plug (0.5-3.0')	
						Brown clayey SILT, trace gravel (ML)	2" PVC Riser (0'-5')	
-5		5-8		100	ND	Gray clayey SILT, trace gravel (ML)		Wet at 5.0'
						Light brown silty CLAY (CL)		
		8-12		100	ND	Light brown silty CLAY with 0.2' thick silty fine sand interbeds (CL)	NJ #0 US Silica (3-15')	
-10							10-slot 2" PVC screen (5'-15')	
		12-16		90	ND	Gray silty fine SAND (SM)		
						Gray CLAY (CL)		
-15						Gray silty fine SAND interbedded with gray CLAY (SM/CL)	Natural collapse (15-16')	
						End of boring @ 16.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 6-7' for analysis of VOCs and PCBs.

BORING NO. : MW-81

AECOM

TEST BORING LOG

BORING NO. : MW-82

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124398.72 **EASTING:** 954533.30
GROUND ELEVATION:	404.63'
DATE STARTED:	1/18/17
DATE FINISHED:	1/18/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown clayey silt, some fine to coarse gravel and roots (FILL)	Flush-mount roadbox set in concrete	Moist
						Light brown clayey silt, some fine sand, trace fine gravel (FILL)	Hole Plug (0.5-1.5')	
							2" PVC Riser (0'-2')	
-5		5-8		100	ND	Brown clayey SILT with thin silt to fine sandy silt bands (0.1') thick every 0.5' (ML)		Wet at 5.0'
						Brown silty fine SAND (SM)	NJ #0 US Silica (1.5-12')	
		8-12		100	ND	Brown CLAY, some fine sand (CL)	10-slot 2" PVC screen (2'-12')	
-10						Brown silty fine SAND (SM)		
						Brown fine to medium SAND (SP)		
						End of boring @ 12.0'		
-15								
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 5-5.5' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-83

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1124336.76 **EASTING:** 954304.18
GROUND ELEVATION:	405.50'
DATE STARTED:	1/19/17
DATE FINISHED:	1/19/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	4" of asphalt underlain by light brown/gray silty fine to coarse gravel (FILL)	Flush-mount roadbox set in concrete	Moist
					2.6	Dark gray silty gravel (FILL)		Slight petroleum odor to 3'
					1.9	Dark gray silty gravel with cobbles (FILL)	Hole Plug (0.5-1.5')	
					0.4	Gray brown wilt and medium to coarse sand, some gravel, trace cobble (FILL)	2" PVC Riser (0'-2')	
					ND	Brown Clayey SILT, trace fine gravel (ML)		
-5		5-8		100	ND	Brown clayey SILT, trace fine sand (ML)		Wet at 5.0'
						Brown silty fine SAND (SM)	NJ #0 US Silica (1.5-12')	
						Brown clayey SILT, trace to some fine sand (ML)		
		8-12		100	ND	Brown Silty CLAY, some fine sand (SC)	10-slot 2" PVC screen (2'-12')	
-10								
-15						End of boring @ 12.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 1-2' for analysis of VOCs and PCBs.

AECOM

TEST BORING LOG

BORING NO. : MW-84

PROJECT/PROJECT LOCATION:	UTC Supplemental GW
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60528299
NORTHING:	1123704.67 **EASTING:** 953673.48
GROUND ELEVATION:	403.90'
DATE STARTED:	1/19/17
DATE FINISHED:	1/19/17
DRILLER:	Rick Novatka
GEOLOGIST:	Rob Murphy
REVIEWED BY:	K. Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Asphalt (FILL)	Flush-mount roadbox set in concrete	Moist
						Brown clayey silt with gravel and cobble (FILL)		
						Light brown clayey silt, some fine sand (FILL)	Hole Plug (0.5-1.5')	
							2" PVC Riser (0'-2')	
-5		5-8		100	ND	Light brown clayey SILT, some fine sand (ML)		Wet at 5.5'
		8-12		75	ND	Gray fine SAND, trace silt (SP)	NJ #0 US Silica (1.5-12')	
-10						Gray silty fine SAND (SM)	10-slot 2" PVC screen (2'-12')	
						Gray fine SAND, trace silt (SP)		
-15						End of boring @ 12.0'		
-20								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted 6712DT Geoprobe rig.

Collected sample from 5-5.5' for analysis of VOCs and PCBs.

BORING NO. : MW-84

Appendix B - Well Development Logs

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-70

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/31/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	20.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	10.65	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	9.35	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.6	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	7.9	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5	7								
pH	6.88	6.91	6.89								
SPEC. COND. (mS/cm)	2.62	1.90	1.76								
TURBIDITY (NTUs)	74.6	67.1	47.7								
ORP (mV)	69	81	103								

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-71

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/31/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	15.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	9.30	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	5.70	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	4.8	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	4.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	4									
pH	7.06	6.87									
SPEC. COND. (mS/cm)	1.56	1.61									
TURBIDITY (NTUs)	96	14									
ORP (mV)	14	58									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-72

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/26/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.80	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.55	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	7.25	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.2	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	6.2	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5									
pH	NR	NR									
SPEC. COND. (mS/cm)	0.641	0.641									
TURBIDITY (NTUs)	422	38									
ORP (mV)	-15	70									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.
NR=not recorded

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-73

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/31/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	12.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	8.15	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	3.85	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.7	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	3.3	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	3.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	3									
pH	6.97	6.93									
SPEC. COND. (mS/cm)	0.969	0.951									
TURBIDITY (NTUs)	676	46.1									
ORP (mV)	136	151									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-74

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/26/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.70	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.50	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	5.20	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.9	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	4.4	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5	7								
pH	6.93	6.97	6.98								
SPEC. COND. (mS/cm)	1.15	1.14	1.16								
TURBIDITY (NTUs)	93.8	76.1	31.6								
ORP (mV)	141	121	115								

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-75

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/26/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	10.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.90	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	3.10	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.5	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	2.6	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	4.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	4									
pH	6.87	6.89									
SPEC. COND. (mS/cm)	1.16	1.17									
TURBIDITY (NTUs)	86	14.1									
ORP (mV)	126	141									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-76

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/23/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	14.50	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.70	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	7.80	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.3	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	6.6	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	2	5	10								
pH	10.22	6.81	6.79								
SPEC. COND. (mS/cm)	1.70	2.15	3.22								
TURBIDITY (NTUs)	67.8	47.8	18.6								
ORP (mV)	58	136	150								

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-77

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/23/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	14.50	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	8.50	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	6.00	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	5.1	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	2	5									
pH	6.89	6.91									
SPEC. COND. (mS/cm)	1.91	1.79									
TURBIDITY (NTUs)	>999	26.3									
ORP (mV)	76	57									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.
Dry @ 2 gallons, removed allow recovery.
Dry @ 1 gallon, removed allow recovery.
Dry @ 1 gallon, removed allow recovery.
Dry @ 1 gallon, development complete (5 gallons total).

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-78

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/23/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	13.30	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.80	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	6.50	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.1	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	5.5	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5									
pH	6.88	6.96									
SPEC. COND. (mS/cm)	2.60	1.79									
TURBIDITY (NTUs)	>999	46									
ORP (mV)	79	108									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-79

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/31/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	10.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	1.50	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	8.50	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.4	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	7.2	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	7									
pH	6.77	6.91									
SPEC. COND. (mS/cm)	2.55	1.36									
TURBIDITY (NTUs)	406	31									
ORP (mV)	111	122									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-80

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 2/15/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	9.75	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	1.13	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	8.62	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.5	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	7.3	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5									
pH	6.67	6.43									
SPEC. COND. (mS/cm)	2.79	2.29									
TURBIDITY (NTUs)	367	50									
ORP (mV)	126	-17									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-81

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/27/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	14.30	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.60	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	7.70	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.3	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	6.5	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	8.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5	8								
pH	6.98	6.87	6.86								
SPEC. COND. (mS/cm)	2.41	2.39	1.98								
TURBIDITY (NTUs)	767	144	48.6								
ORP (mV)	75	97	127								

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-82

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/27/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	7.60	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	3.40	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.6	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	2.9	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	6.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	6									
pH	7.89	6.89									
SPEC. COND. (mS/cm)	1.16	1.17									
TURBIDITY (NTUs)	481	37									
ORP (mV)	138	117									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-83

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/31/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.70	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	5.20	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	6.50	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.1	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	5.5	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5									
pH	7.89	6.91									
SPEC. COND. (mS/cm)	1.17	1.23									
TURBIDITY (NTUs)	167	26									
ORP (mV)	126	140									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: UTC Supplemental GW WELL NO.: MW-84

PROJECT NO.: 60528299

STAFF: K. Stahle

DATE(S): 1/26/2017

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.00	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.40	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	4.60	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.8	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 5)	=	3.9	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	5.0	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	1	5									
pH	7.15	6.98									
SPEC. COND. (mS/cm)	2.67	2.54									
TURBIDITY (NTUs)	>999	47									
ORP (mV)	115	76									

COMMENTS: Developed by surging and pumping using a Waterra Pump, check valve, and surge block.
Dry @ 2.5 gallons, removed allow recovery.
Dry @ 4 gallons, removed allow recovery.
Dry @ 5 gallons total.

Appendix C - Groundwater Sampling Purge Logs

Well ID: MW-08

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/8/17 Time: Start 1030 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" Steel

b. Water Table Depth 5.16 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA 5.16

a. Purge Method: ____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030	0.5	8.48	7.76	0.511	3.10	182	71.1	150	0.2	Orange
1040	1.5	8.71	7.72	0.513	2.81	183	41.8		–	Clear
1045	2	8.68	7.72	0.510	2.65	183	32.6		–	
1050	2.5	8.66	7.71	0.505	2.50	183	24.8		–	
1055	3	8.66	7.71	0.505	2.50	186	22.7		–	
1100	3.5	8.66	7.71	0.504	2.25	189	26.8		–	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-08				VOC/PCB	1100
MW-08-Filt					

Comments ____

Signature ____ Date 2/8/17

Well ID: MW-69

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/1/17 Time: Start 1300 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 4.71 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1300	0.5	7.58	7.58	4.42	6.50	159	270	150	0.5	
1305	1	8.10	6.81	4.49	3.61	151	212		0.2	
1310	1.5	8.16	6.75	4.54	1.99	147	147		-	
1315	2	7.71	6.74	4.65	1.71	140	47		-	
1320	2.5	7.60	6.74	4.67	1.62	133	46		-	
1325	3	7.59	6.74	4.67	1.61	129	45		-	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

____

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-69	40 ml	3	HCl	VOC	1325
	L	1	None	PCB	1325

Comments ____

Signature ____ Date 2/1/17

Well ID: MW-70

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 5/8/17 Time: Start 940 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 10.91 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: ____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
940	0.5	12.49	7.17	1.19	5.86	189	18.4	150	.4	
945	1.5	12.05	7.07	1.21	4.16	195	20.3	↓	.2	
950	2	11.49	6.97	1.22	5.55	197	26.1		.2	
955	2.5	11.47	6.93	1.23	5.56	200	8.6		.1	
1000	3	11.45	6.91	1.23	5.16	203	5.7		.1	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

____

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-70				VOC/PCB	1000
MW-70-Filt					

Comments ____

Signature ____ Date ____

DUP

Well ID: MW-71

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/2/17 Time: Start 930 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: SNOW ± 35°F Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 9.15 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
930	0.5	12.49	6.94	.657	2.82	-42	7.6	150	0.5	Clear
935	1	12.04	6.91	.655	1.56	-48	4.1	↓	0.2	
940	1.5	11.81	6.89	.650	1.32	-53	3.7		0.1	
945	2	11.61	6.87	.648	1.29	-56	2.6		0.1	
955	3	11.15	6.90	.655	1.30	-58	2.6		0.1	
1000	3.5	11.10	6.91	.656	1.30	-61	2.4	↓	0.1	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-71	40/1L	4	HCl/None	VOC/PCB	1000
DUP-1	40/1L	4	HCl/None	VOC/PCB	1005

Comments ____

Signature ____ Date 2/2/17

Well ID: MW-72

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/1/17 Time: Start 900 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 4.80 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
900	0.5	5.66	6.99	.783	10.37	158	43.5	150	0.2	Clear
905	1	5.51	6.75	.731	5.43	169	22.0		0.05	
910	1.5	6.26	6.69	0.701	5.07	170	23.2		-	
915	2	6.43	6.65	0.676	4.30	171	19.6		-	
920	2.5	6.55	6.66	0.676	4.26	173	18.3		-	
925	3	6.65	6.65	0.671	4.15	173	17.0	↓	-	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

____

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-72	40ml VOA	3	HCl	VOC	925
	1L AR	1	None	PCB	925

Comments ____

Signature ____ Date 2/1/17

Well ID: MW-73

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/1/17 Time: Start 1140 am/pm
Project No: _____ Finish _____ am/pm
Site Location: Syracuse, ny
Weather Conds: _____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 8.20 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1140	0.5	6.56	7.17	.963	6.78	145	25.6	150	0.5	
1145	1	7.85	7.05	.960	4.68	149	27.5		0.1	
1150	1.5	8.51	7.05	.961	4.56	151	28.0		–	
1155	2.5	8.59	7.04	.961	4.49	151	28.1		–	
1200	3.0	8.65	7.03	.961	4.41	151	29.0		–	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-73	40 ml	3	HCl	VOC	1200
	1 L	1	none	PCB	1200

Comments _____

Signature _____ Date 2/1/17

Well ID: MW-74

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/1/16 Time: Start 1015 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: Clear ~ 25°F Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 6.50 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1015	0.5	6.35	6.83	1.16	6.31	165	21.6	150	1.0	
1020	1	6.47	6.79	1.18	6.26	168	9.6	↓		
1025	1.5	6.65	6.75	1.19	6.14	168	6.7			
1030	2.5	6.68	6.73	1.22	6.07	169	3.9			
1035	3.0	6.69	6.73	1.22	6.05	169	2.4			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-74	40 ml / 1 L	3 / 1	HCl / None	VOC / PCB	1035 / 1035

Comments ____

Signature Kevin Stahle Date 2/1/17

Well ID: MW-75

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/2/17 Time: Start 1130 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material ____

b. Water Table Depth 7.33 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: ____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1130	0.5	2.55	7.04	.543	7.85	114	16.4	150	0.4	
1140	1.5	2.76	6.91	.539	7.01	117	4.3	↓	0.2	
1145	2	2.92	6.86	.523	6.05	118	1.8		0.1	
1150	2.5	2.89	6.86	.526	5.98	120	0.0		0.1	
1155	3	2.88	6.86	.526	5.97	122	0.0	↓	0.1	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

____

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
~~MW-75~~ MW-75					1200
MW-75 MS					1205
MW-75 MSD					1210

Comments ____

Signature ____ Date 2/2/17

Well ID: MW-76

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/2/17 Time: Start 1230 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 7.20 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1230	0.5	7.67	6.66	2.65	4.92	105	15.3	150	0.2	Clear
1235	1	6.0	6.67	2.01	4.80	106	7.6	|	0.1	
1245	2	6.76	6.61	1.63	4.79	109	0.0	|	—	
1250	2.5	6.18	6.64	1.61	4.78	112	0.0	|	-	
1255	3	6.16	6.63	1.57	4.79	114	0.0	↓	-	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-76	40ml VOC	3	HCl	PCB/VOC	1300
	1L	1			

Comments ____

Signature K. Stahle Date 2/2/17

Well ID: MW-77

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/7/17 Time: Start 1350 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 8.62 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: ____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

____

____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1350	1	4.20	6.63	1.22	5.89	128	148	150	0.3	
1355	1.5	5.11	6.59	1.34	3.71	129	126		0.1	
1400	2	5.28	6.58	1.48	2.60	132	97		-	
1405	2.5	5.30	6.57	1.47	2.49	137	43		-	
1410	3	5.34	6.57	1.46	2.50	140	46		-	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

____

(continued on back)

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-77				VOC / PCB	1410
MW-77-Filt					

Comments ____

Signature ____ Date ____

Well ID: MW-78

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/7/17 Time: Start 1230 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 7.20 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1230	0.5	6.01	6.43	6.57	1.87	60	835	150	0.4	
1235	1	6.62	6.41	6.71	1.61	63	520	↓	0.2	
1240	1.5	6.74	6.40	6.75	1.54	65	416		0.1	
1245	2.5	6.75	6.40	6.79	1.44	69	374		0.1	
1250	3	6.69	6.41	6.80	1.36	71	112		0.1	
1255	3.5	6.68	6.42	6.81	1.57	74	94	↓	0.1	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-78				VOC / PCB	1300
MW-78-Filt					

Comments ____

Signature ____ Date ____

Well ID: MW-79

Low Flow Ground Water Sample Collection Record

Client: ~~NYSEG~~ [illegible] Date: 2/15/17 Time: Start 1110 am/pm

Project No: ~~60342530~~ Finish _____ am/pm

Site Location: ~~Ithaca OU~~-2

Weather Conds: _____ Collector(s): K.S./G.W.

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material _____

b. Water Table Depth 2.00 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump (Low Flow)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

_____

_____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
			6.46							
1110	0.5	5.82	~~5.8~~	2.21	6.26	-39	32.4	150	0.1	Clear
1120	1.5	5.74	6.45	2.23	4.71	-41	27.6		=	
1125	2	5.51	6.44	2.26	4.63	-43	14.3		=	
1130	2.5	4.97	6.43	2.26	4.41	-45	21.4		=	
1135	3	4.95	6.43	2.27	5.97	-46	19.6		=	
1140	3.5	4.94	6.45	2.27	5.95	-47	18.3		=	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

(continued on back)

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-79				PCB/VOC	1140
MW-79-Filt					

Comments _____

Signature _____ Date 2/15/17

Well ID: MW-80

Low Flow Ground Water Sample Collection Record

Client: NYSEG Date: 2/15/17 Time: Start 1030 am/pm
Project No: 60342530 Finish 1050 am/pm
Site Location: Ithaca OU-2
Weather Conds: _____ Collector(s): K.S./G.W.

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 9.75 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 1.13 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump (Low Flow)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030		7.22	5.95	2.39	3.60	73	217	150		Clear
1035		7.01	6.15	2.30	3.63	96	118	↓		
1040		6.94	6.21	2.29	3.71	11	79			
1045		6.83	6.23	2.29	3.74	-54	64			
1050		6.80	6.23	2.28	3.89	-56	35	↓		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-80				PCB/VOC	1050
MW-80 Filt					

Comments Sheen on water

Signature _____ Date 2/15/17

Well ID: MW-81

Low Flow Ground Water Sample Collection Record

Client: ~~NYSEG~~ UXL - CORNER Date: 2/8/17 Time: Start 1110 am/pm
Project No: ~~60342530~~ Finish 1140 am/pm
Site Location: ~~Ithaca OU-2~~
Weather Conds: _____ Collector(s): K.S./G.W.

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.5 c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 7.0 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump (Low Flow)

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1110	0.5	8.39	6.76	1.52	5.43	224	1.6	150	0.2	
1120	1.5	8.61	6.69	1.55	3.45	229	0.8		0.1	
1125	2	8.75	6.67	1.57	3.21	230	0		0.1	
1130	2.5	8.81	6.67	1.59	2.98	232	0		-	
1135	3	8.91	6.68	1.61	2.81	232	0		-	
1140	3.5	8.93	6.67	1.61	2.76	232	0		-	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-81					1140
MW-81-FILT					1140

Comments _____

Signature _____ Date 2/8/17

Well ID: MW-82

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/7/17 Time: Start 1130 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: ____ Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b)

Casing Diameter/Material: 2" PVC

b. Water Table Depth 9.03 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1130	0.5	9.09	6.52	11.9	6.57	162	213	150	0.3	
1140	1.5	9.26	6.49	12.0	5.32	168	206		0.2	
1145	2	9.31	6.47	12.1	5.11	175	197		0.1	
1150	2.5	9.35	6.45	12.3	5.06	178	143		0.1	
1158	3	9.54	6.46	12.5	5.00	180	86		0.1	
1200	3.5	9.53	6.47	12.3	4.98	181	52		0.1	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-82				VOC / PCB	1200
MW-82-Filt					

Comments ____

Signature ____ Date ____

Well ID: MW-83

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/7/17 Time: Start 1100 am/pm
Project No: Finish ____ am/pm
Site Location: Syracuse, ny
Weather Conds: S Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b) Casing Diameter/Material ____

b. Water Table Depth 5.41 d. Calculated System Volume (see back) ____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1100	0.5	12.28	7.12	1.92	7.76	119	0.0	150	0.29	
1105	1	11.36	7.05	1.83	6.61	127	0.0		0.1	
1110	1.5	10.93	6.92	1.84	5.69	132	0.0		–	
1115	2	10.51	6.93	1.86	5.57	135	0.0		–	
1120	3	10.48	6.93	1.86	5.55	135	0.0		–	
									–	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

(continued on back)

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: ____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-83				VOC / PCB	1120
MW-83-Filt					

Comments ____

Signature ____ Date ____

Well ID: MW-84

Low Flow Ground Water Sample Collection Record

Client: UTC Carrier Date: 2/1/17 Time: Start 1105 am/pm
Project No: Finish 1130 am/pm
Site Location: Syracuse, ny
Weather Conds: Collector(s): K. Stahle

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 6.64 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1105	0.5	8.91	8.16	2.71	5.41	140	232	150	0.4	
1110	1	8.88	6.96	2.70	4.65	136	179	↓	0.1	
1115	2	10.15	6.78	2.62	3.82	147	106		0.1	
1120	2.5	10.21	6.79	2.65	3.74	146	54		0.1	
1130	3	10.23	6.80	2.66	3.66	146	47	↓	0.1	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-84	40mL	3	HCl	VOC	1130
	1L	1	None	PCB	1130

Comments _____

Signature _____ Date 2/1/17

Appendix D - Data Usability Summary Report

DATA USABILITY SUMMARY REPORT

SUPPLEMENTAL WELL INSTALLATION
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY
SITE ID# 734043

Analyses Performed by:

EUROFINS/SPECTRUM ANALYTICAL
AGAWAM, MA

Prepared for:

UNITED TECHNOLOGIES CORP.
UTC SHARED REMEDIATION SERVICES
FARMINGTON, CT

Prepared by:

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202

APRIL 2017

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TABLES

(Following Text)

ATTACHMENTS

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation*, Appendix 2B - *Guidance for Data Deliverables and the Development of Data Usability Summary Reports,* May 2010.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the January 9 – February 8, 2017 sampling of 16 soil samples, 1 soil field duplicate (FD), 1 soil matrix spike/matrix spike duplicate (MS/MSD) pair, 17 groundwater samples, 1 groundwater FD, 1 groundwater MS/MSD pair, and 5 trip blanks. All samples were sent to Eurofins/Spectrum Analytical located in Agawam, MA and were analyzed for target compound list (TCL) volatile organic compounds (VOCs) following United States Environmental Protection Agency (USEPA) Method 8260C and TCL polychlorinated biphenyls (PCBs) (total and dissolved) following USEPA Method 8082A. Not all samples were analyzed for all parameters.

A limited data validation was performed following the guidelines in the following USEPA Region II documents:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B and 8260C,* SOP HW-24, Rev. 4, October 2014; and
- *Polychlorinated Biphenyl (PCB) Aroclor Data Validation,* SOP HW-37, Rev. 3, May 2013

Qualifications applied to the data during the limited data validation include 'J' (estimated concentration), and 'UJ' (estimated quantitation limit). Definitions of USEPA data qualifiers are presented at the end of this text. The validated analytical results are presented on Tables 1 – 4. Copies of marked-up laboratory analytical summaries (Form 1s) are presented in Attachment A. Documentation supporting the qualification of data is presented in Attachment B. Only analytical deviations affecting data usability are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

Full deliverable data packages (i.e., NYSDEC Category B or equivalent) were provided by the laboratory, which included all reporting forms and raw data necessary to fully evaluate and verify the reported analytical results.

IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC) with the following exception.

The sampler did not submit field filtered aliquots for the groundwater samples collected on 2/1/17 and 2/2/17 for dissolved PCB analysis. The laboratory removed a portion of the total PCB volume and filtered it in order to perform the dissolved PCB analysis. All subsequent samples were filtered in the field for dissolved PCBs and a separate bottle was submitted to the laboratory.

All samples were analyzed within the required holding times.

V. NON-CONFORMANCES

- **Instrument Calibration**

  The relative response factors (RRF) for acetone and/or methyl ethyl ketone (2-butanone) in the soil VOC initial calibration (ICAL) and continuing calibration standards (CCAL) were below the QC limit of 0.100. The laboratory demonstrated that there is adequate sensitivity to detect the low responding compounds at the applicable quantitation limit, therefore, using professional judgement the non-detect results for these compounds in the associated soil samples, as listed on Table 1, were qualified 'UJ' and the detected compounds were qualified 'J'.

  The percent difference (%D) between the soil VOC ICAL average RRF and the RRF in one or more of the CCALs associated with the soil samples exceeded the QC limit of 20% for one or more of the following VOCs: n-butyl benzene, 1,4-dichlorobenzene, methylene chloride (MECL), and/or vinyl chloride. The results for these compounds in the associated samples, as listed on Table 1, were qualified 'UJ'.

  The RRFs for acetone (<0.100), trichloroethene (TCE) (<0.200), and/or tetrachloroethene (PCE) (<0.200) were below the recommended QC limits in the groundwater VOC ICAL and CCAL. The laboratory demonstrated that there is adequate sensitivity to detect the low responding compounds at the applicable quantitation limit, therefore, the non-detect results for these compounds in the associated groundwater samples, as listed on Table 1, were qualified 'UJ'.

  The %D between the groundwater VOC ICAL average RRF and the RRF in one or more of the CCALs associated with the groundwater samples exceeded the QC limit of 20% for VOC

carbon tetrachloride. The results for this compound in the associated samples, as listed on Table 1, were qualified 'UJ'.

Support documentation (i.e., instrument performance check form, ICAL and CCAL summary forms) is provided in Attachment B.

- **Field Duplicates**

Field duplicates were collected at soil sample location MW-075 (5-6) and groundwater sample location MW-71 and exhibited good field and analytical precision.

VI. SAMPLE RESULTS AND REPORTING

All quantitation/detection limits were reported in accordance with method requirements and were adjusted for sample volume, moisture content (where applicable), and dilution factors. Results below the quantitation limits were qualified 'J' by the laboratory.

Some samples required dilutions due to the nature of the sample matrix and/or high levels to target compounds. The quantitation limits reported for the non-detect compounds are the lowest achievable at the diluted level.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'J', and 'UJ' are considered conditionally usable. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples at this time.

Prepared By: George Kisluk, Senior Chemist **Date:** 4/5/17

Reviewed By: Peter R. Fairbanks, Senior Chemist **Date:** 4/5/17

DEFINITIONS OF USEPA DATA QUALIFIERS

U –	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J –	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
(J+) -	The result is an estimated quantity. The associated numerical value is biased high.
(J-) -	The result is an estimated quantity. The associated numerical value is biased low.
UJ –	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R –	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
D –	The sample result was reported from a secondary dilution analysis.
NJ –	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

TABLE 1

SUPPLEMENTAL WELL INSTALLATION

UTC/CARRIER SITE

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	FRACTION	ANALYTICAL DEVIATION	QUALIFICATION
SOILS			
All soil samples	VOCs	RRF < 0.100 for acetone and 2-butanone.	Qualify non-detect results 'UJ' and detected results 'J'.
MW-069 (5-6)	VOCs	CCAL %D > 20% for MECL and n-butyl benzene.	Qualify non-detect results 'UJ'.
MW-70 (10-12), MW-072 (5.0-5.5), and MW-073 (3.5-4.0)	VOCs	CCAL %D > 20% for MECL.	Qualify non-detect results 'UJ'.
MW-074 (4.5-5.0)	VOCs	CCAL %D > 20% for 1,4-dichlorobenzene.	Qualify non-detect results 'UJ'.
MW-075 (5-6) and FD-011217 [MW-075 (5-6)]	VOCs	CCAL %D > 20% for n-butyl benzene.	Qualify non-detect results 'UJ'.
MW-076 (7-7.5) and MW-077(6.5-7.0)	VOCs	CCAL %D > 20% for carbon tetrachloride and vinyl chloride.	Qualify non-detect results 'UJ'.
MW-078 (6-8), MW-079 (3-4), MW-080 (4.5-5.0), MW-081 (6-7), and MW-082 (5-5.5)		CCAL %D > 20% for vinyl chloride.	Qualify non-detect results 'UJ'.
GROUNDWATERS			
MW-08, MW-70, MW-77, MW-78, MW-81, MW-82, MW-83, TB (2/7/17), TB (2/8/17), and TB (2/15/17)	VOCs	RRF < 0.100 for acetone and <0.200 for TCE and PCE.	Qualify non-detect results 'UJ'.
MW-71, DUP-1 (MW-71), MW-75, MW-76, MW-79, MW-80, and TB (2/2/17)	VOCs	RRF < 0.100 for acetone and <0.200 for PCE.	Qualify non-detect results 'UJ'.
MW-79, MW-80, and TB (2/15/17)	VOCs	CCAL %D > 20% for carbon tetrachloride.	Qualify non-detect results 'UJ'.

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-69	MW-70	MW-71	MW-72	MW-73
Sample ID		MW-069 (5-6)	MW-070 (10-12)	MW-071 (7-8)	MW-072-(5.0-5.5)	MW-073-(3.5-4.0)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-6.0	10.0-12.0	7.0-8.0	5.0-5.5	3.5-4.0
Date Sampled		01/09/17	01/10/17	01/10/17	01/11/17	01/11/17
Parameter	**Units**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,1-Dichloroethane	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,1-Dichloroethene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,2,4-Trimethylbenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,2-Dichlorobenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,2-Dichloroethane	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,2-Dichloroethene (cis)	UG/KG	64.7	4.88 U	50.0 U	4.75 U	1.65 J
1,2-Dichloroethene (trans)	UG/KG	12.4	4.88 U	50.0 U	4.75 U	3.73 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,3-Dichlorobenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,4-Dichlorobenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
1,4-Dioxane	UG/KG	87.1 U	97.7 U	1,000 U	95.0 U	74.5 U
Acetone	UG/KG	33.0 J	73.8 J	500 UJ	47.5 UJ	37.3 UJ
Benzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Carbon tetrachloride	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Chlorobenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Chloroform	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Ethylbenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Methyl ethyl ketone (2-Butanone)	UG/KG	8.71 UJ	17.9 J	100 UJ	9.50 UJ	7.45 UJ
Methyl tert-butyl ether	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Methylene chloride	UG/KG	8.71 UJ	9.77 UJ	100 U	9.50 UJ	7.45 UJ
n-Butylbenzene	UG/KG	4.36 UJ	4.88 U	50.0 U	4.75 U	3.73 U
n-Propylbenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
CHECKED BY: PRF 3/27/17

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-69	MW-70	MW-71	MW-72	MW-73
Sample ID		MW-069 (5-6)	MW-070 (10-12)	MW-071 (7-8)	MW-072-(5.0-5.5)	MW-073-(3.5-4.0)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-6.0	10.0-12.0	7.0-8.0	5.0-5.5	3.5-4.0
Date Sampled		01/09/17	01/10/17	01/10/17	01/11/17	01/11/17
Parameter	**Units**					
Volatile Organic Compounds						
sec-Butylbenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
tert-Butylbenzene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Tetrachloroethene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Toluene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Trichloroethene	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	1.47 J
Vinyl chloride	UG/KG	21.0	4.88 U	50.0 U	4.75 U	2.54 J
Xylene (total)	UG/KG	4.36 U	4.88 U	50.0 U	4.75 U	3.73 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1221	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1232	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1242	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1248	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1254	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1260	UG/KG	16.1 J	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1262	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U
Aroclor 1268	UG/KG	22.7 U	23.8 U	21.4 U	24.3 U	22.9 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
CHECKED BY: PRF 3/27/17

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-74	MW-75	MW-75	MW-76	MW-77
Sample ID		MW-074 (4.5-5.0)	FD-011217	MW-075 (5-6)	MW-076 (7-7.5)	MW-077 (6.5-7.0)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		4.5-5.0	5.0-6.0	5.0-6.0	7.0-7.5	6.5-7.0
Date Sampled		01/12/17	01/12/17	01/12/17	01/13/17	01/13/17
Parameter	Units		Field Duplicate (1-1)			
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,1-Dichloroethane	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,1-Dichloroethene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,2,4-Trimethylbenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,2-Dichlorobenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,2-Dichloroethane	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,2-Dichloroethene (cis)	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,2-Dichloroethene (trans)	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,3-Dichlorobenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
1,4-Dichlorobenzene	UG/KG	4.44 UJ	4.45 U	5.87 U	4.86 U	4.71 U
1,4-Dioxane	UG/KG	88.8 U	89.0 U	117 U	97.2 U	94.3 U
Acetone	UG/KG	44.4 UJ	44.5 UJ	58.7 UJ	48.6 UJ	47.1 UJ
Benzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Carbon tetrachloride	UG/KG	4.44 U	4.45 U	5.87 U	4.86 UJ	4.71 UJ
Chlorobenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Chloroform	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Ethylbenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Methyl ethyl ketone (2-Butanone)	UG/KG	8.88 UJ	8.90 UJ	11.7 UJ	9.72 UJ	9.43 UJ
Methyl tert-butyl ether	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Methylene chloride	UG/KG	8.88 U	8.90 U	11.7 U	9.72 U	9.43 U
n-Butylbenzene	UG/KG	4.44 U	4.45 UJ	5.87 UJ	4.86 U	4.71 U
n-Propylbenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
CHECKED BY: PRF 3/27/17

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-74	MW-75	MW-75	MW-76	MW-77
Sample ID		MW-074 (4.5-5.0)	FD-011217	MW-075 (5-6)	MW-076 (7-7.5)	MW-077 (6.5-7.0)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		4.5-5.0	5.0-6.0	5.0-6.0	7.0-7.5	6.5-7.0
Date Sampled		01/12/17	01/12/17	01/12/17	01/13/17	01/13/17
Parameter	**Units**		Field Duplicate (1-1)			
Volatile Organic Compounds						
sec-Butylbenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
tert-Butylbenzene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Tetrachloroethene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Toluene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Trichloroethene	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Vinyl chloride	UG/KG	4.44 U	4.45 U	5.87 U	4.86 UJ	4.71 UJ
Xylene (total)	UG/KG	4.44 U	4.45 U	5.87 U	4.86 U	4.71 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1221	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1232	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1242	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1248	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1254	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1260	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1262	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U
Aroclor 1268	UG/KG	21.3 U	24.5 U	25.4 U	24.4 U	24.7 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
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Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-78	MW-79	MW-80	MW-81	MW-82
Sample ID		MW-078 (6-8)	MW-079 (3-4)	MW-080 (4.5-5.0)	MW-081 (6-7)	MW-082 (5-5.5)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-8.0	3.0-4.0	4.5-5.0	6.0-7.0	5.0-5.5
Date Sampled		01/16/17	01/17/17	01/17/17	01/18/17	01/18/17
Parameter	**Units**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,1-Dichloroethane	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,1-Dichloroethene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,2,4-Trimethylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,2-Dichlorobenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,2-Dichloroethane	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,2-Dichloroethene (cis)	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,2-Dichloroethene (trans)	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,3-Dichlorobenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,4-Dichlorobenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
1,4-Dioxane	UG/KG	101 U	83.0 U	135 U	92.3 U	92.0 U
Acetone	UG/KG	50.4 UJ	41.5 UJ	116 J	38.5 J	46.0 UJ
Benzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Carbon tetrachloride	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Chlorobenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Chloroform	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Ethylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Methyl ethyl ketone (2-Butanone)	UG/KG	10.1 UJ	8.30 UJ	24.0 J	9.23 UJ	9.20 UJ
Methyl tert-butyl ether	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Methylene chloride	UG/KG	10.1 U	8.30 U	13.5 U	9.23 U	9.20 U
n-Butylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
n-Propylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-78	MW-79	MW-80	MW-81	MW-82
Sample ID		MW-078 (6-8)	MW-079 (3-4)	MW-080 (4.5-5.0)	MW-081 (6-7)	MW-082 (5-5.5)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-8.0	3.0-4.0	4.5-5.0	6.0-7.0	5.0-5.5
Date Sampled		01/16/17	01/17/17	01/17/17	01/18/17	01/18/17
Parameter	**Units**					
Volatile Organic Compounds						
sec-Butylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
tert-Butylbenzene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Tetrachloroethene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Toluene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Trichloroethene	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Vinyl chloride	UG/KG	5.04 UJ	4.15 UJ	6.76 UJ	4.62 UJ	4.60 UJ
Xylene (total)	UG/KG	5.04 U	4.15 U	6.76 U	4.62 U	4.60 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1221	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1232	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1242	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1248	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1254	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1260	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1262	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U
Aroclor 1268	UG/KG	24.4 U	22.1 U	28.7 U	23.3 U	23.5 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-83	MW-84
Sample ID		MW-083 (1-2)	MW-084 (5-5.5)
Matrix		Soil	Soil
Depth Interval (ft)		1.0-2.0	5.0-5.5
Date Sampled		01/19/17	01/19/17
Parameter	**Units**		
Volatile Organic Compounds			
1,1,1-Trichloroethane	UG/KG	3.67 U	5.94 U
1,1-Dichloroethane	UG/KG	3.67 U	5.94 U
1,1-Dichloroethene	UG/KG	3.67 U	5.94 U
1,2,4-Trimethylbenzene	UG/KG	3.67 U	5.94 U
1,2-Dichlorobenzene	UG/KG	3.67 U	5.94 U
1,2-Dichloroethane	UG/KG	3.67 U	5.94 U
1,2-Dichloroethene (cis)	UG/KG	3.67 U	5.94 U
1,2-Dichloroethene (trans)	UG/KG	3.67 U	5.94 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/KG	3.67 U	5.94 U
1,3-Dichlorobenzene	UG/KG	3.67 U	5.94 U
1,4-Dichlorobenzene	UG/KG	3.67 U	5.94 U
1,4-Dioxane	UG/KG	73.4 U	119 U
Acetone	UG/KG	16.2 J	59.4 UJ
Benzene	UG/KG	3.67 U	5.94 U
Carbon tetrachloride	UG/KG	3.67 U	5.94 U
Chlorobenzene	UG/KG	3.67 U	5.94 U
Chloroform	UG/KG	3.67 U	5.94 U
Ethylbenzene	UG/KG	3.67 U	5.94 U
Methyl ethyl ketone (2-Butanone)	UG/KG	7.34 UJ	11.9 UJ
Methyl tert-butyl ether	UG/KG	3.67 U	5.94 U
Methylene chloride	UG/KG	7.34 U	11.9 U
n-Butylbenzene	UG/KG	3.67 U	5.94 U
n-Propylbenzene	UG/KG	3.67 U	5.94 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
CHECKED BY: PRF 3/27/17

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-83	MW-84
Sample ID		MW-083 (1-2)	MW-084 (5-5.5)
Matrix		Soil	Soil
Depth Interval (ft)		1.0-2.0	5.0-5.5
Date Sampled		01/19/17	01/19/17
Parameter	**Units**		
Volatile Organic Compounds			
sec-Butylbenzene	UG/KG	2.27	5.94 U
tert-Butylbenzene	UG/KG	3.67 U	5.94 U
Tetrachloroethene	UG/KG	3.67 U	2.34
Toluene	UG/KG	3.67 U	5.94 U
Trichloroethene	UG/KG	3.67 U	5.94 U
Vinyl chloride	UG/KG	3.67 U	5.94 U
Xylene (total)	UG/KG	3.67 U	5.94 U
Polychlorinated Biphenyls			
Aroclor 1016	UG/KG	23.0 U	25.3 U
Aroclor 1221	UG/KG	23.0 U	25.3 U
Aroclor 1232	UG/KG	23.0 U	25.3 U
Aroclor 1242	UG/KG	23.0 U	25.3 U
Aroclor 1248	UG/KG	23.0 U	25.3 U
Aroclor 1254	UG/KG	23.0 U	25.3 U
Aroclor 1260	UG/KG	28.5	25.3 U
Aroclor 1262	UG/KG	23.0 U	25.3 U
Aroclor 1268	UG/KG	23.0 U	25.3 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-08	MW-69	MW-70	MW-71	MW-71
Sample ID		MW-08	MW-69	MW-70	Dup-1	MW-71
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/08/17	02/01/17	02/08/17	02/02/17	02/02/17
Parameter	Units				Field Duplicate (1-1)	
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	UG/L	1.00 U	26.5	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	1.00 U	287	1.00 U	29.0	31.4
1,2-Dichloroethene (trans)	UG/L	1.00 U	18.5	1.00 U	1.91	1.85
1,3,5-Trimethylbenzene (Mesitylene)	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	20.0 U	1,000 U	20.0 U	13.3 J	20.0 U
Acetone	UG/L	10.0 UJ	500 U	10.0 UJ	10.0 UJ	10.0 UJ
Benzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Carbon tetrachloride	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Chloroform	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Methyl ethyl ketone (2-Butanone)	UG/L	2.00 U	100 U	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Methylene chloride	UG/L	2.00 U	100 U	2.00 U	2.00 U	2.00 U
n-Butylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-08	MW-69	MW-70	MW-71	MW-71
Sample ID		MW-08	MW-69	MW-70	Dup-1	MW-71
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/08/17	02/01/17	02/08/17	02/02/17	02/02/17
Parameter	Units				Field Duplicate (1-1)	
Volatile Organic Compounds						
Tetrachloroethene	UG/L	1.00 UJ	50.0 U	1.00 UJ	1.00 UJ	1.00 UJ
Toluene	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Trichloroethene	UG/L	1.00 UJ	3,170	1.00 UJ	37.2	40.1
Vinyl chloride	UG/L	1.00 U	99.0	1.00 U	3.01	3.54
Xylene (total)	UG/L	1.00 U	50.0 U	1.00 U	1.00 U	1.00 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1221	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1232	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1242	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1248	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1254	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1260	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1262	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Aroclor 1268	UG/L	0.256 U	0.476 U	0.253 U	0.476 U	0.444 U
Dissolved Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1221	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1232	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1242	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1248	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1254	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1260	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1262	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U
Aroclor 1268	UG/L	0.250 U	0.500 U	0.241 U	0.500 U	0.500 U

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-72	MW-73	MW-74	MW-75	MW-76
Sample ID		MW-72	MW-73	MW-74	MW-75	MW-76
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/01/17	02/01/17	02/01/17	02/02/17	02/02/17
Parameter	**Units**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	1.12	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (trans)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Acetone	UG/L	10.0 U	10.0 U	10.0 U	10.0 UJ	10.0 UJ
Benzene	UG/L	0.29	1.00 U	1.00 U	1.00 U	1.00 U
Carbon tetrachloride	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methyl ethyl ketone (2-Butanone)	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

Flags assigned during chemistry validation are shown.

MADE BY: GEK 3/27/17
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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-72	MW-73	MW-74	MW-75	MW-76
Sample ID		MW-72	MW-73	MW-74	MW-75	MW-76
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/01/17	02/01/17	02/01/17	02/02/17	02/02/17
Parameter	**Units**					
Volatile Organic Compounds						
Tetrachloroethene	UG/L	1.00 U	1.00 U	1.00 U	1.00 UJ	1.00 UJ
Toluene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	UG/L	1.93	1.00 U	1.00 U	1.15	1.00 U
Vinyl chloride	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylene (total)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1221	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1232	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1242	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1248	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1254	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1260	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1262	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Aroclor 1268	UG/L	0.444 U	0.476 U	0.541 U	0.500 U	0.476 U
Dissolved Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1221	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1232	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1242	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1248	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1254	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1260	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1262	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U
Aroclor 1268	UG/L	0.513 U	0.455 U	0.476 U	0.488 U	0.513 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-77	MW-78	MW-79	MW-80	MW-81
Sample ID		MW-77	MW-78	MW-79	MW-80	MW-81
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/07/17	02/07/17	02/15/17	02/15/17	02/08/17
Parameter	**Units**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (trans)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Acetone	UG/L	10.0 UJ	10.0 UJ	10.0 UJ	10.0 UJ	10.0 UJ
Benzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon tetrachloride	UG/L	1.00 U	1.00 U	1.00 UJ	1.00 UJ	1.00 U
Chlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methyl ethyl ketone (2-Butanone)	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-77	MW-78	MW-79	MW-80	MW-81
Sample ID		MW-77	MW-78	MW-79	MW-80	MW-81
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/07/17	02/07/17	02/15/17	02/15/17	02/08/17
Parameter	**Units**					
Volatile Organic Compounds						
Tetrachloroethene	UG/L	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ
Toluene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	UG/L	1.00 UJ	1.00 UJ	1.00 U	1.00 U	1.00 UJ
Vinyl chloride	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylene (total)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1221	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1232	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1242	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1248	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1254	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1260	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1262	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Aroclor 1268	UG/L	0.253 U	0.263 U	0.206 U	0.233 U	0.211 U
Dissolved Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1221	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1232	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1242	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1248	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1254	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1260	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1262	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U
Aroclor 1268	UG/L	0.250 U	0.241 U	0.213 U	0.235 U	0.250 U

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TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-82	MW-83	MW-84
Sample ID		MW-82	MW-83	MW-84
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		02/07/17	02/07/17	02/01/17
Parameter	**Units**			
Volatile Organic Compounds				
1,1,1-Trichloroethane	UG/L	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	UG/L	1.00 U	0.51 J	1.00 U
1,1-Dichloroethene	UG/L	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	UG/L	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	1.00 U	1.00 U	1.99
1,2-Dichloroethene (trans)	UG/L	1.00 U	1.00 U	4.22
1,3,5-Trimethylbenzene (Mesitylene)	UG/L	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	20.0 U	20.0 U	20.0 U
Acetone	UG/L	10.0 UJ	10.0 UJ	10.0 U
Benzene	UG/L	1.00 U	1.00 U	1.00 U
Carbon tetrachloride	UG/L	1.00 U	1.00 U	1.00 U
Chlorobenzene	UG/L	1.00 U	1.00 U	1.00 U
Chloroform	UG/L	1.00 U	1.00 U	1.00 U
Ethylbenzene	UG/L	1.00 U	1.00 U	1.00 U
Methyl ethyl ketone (2-Butanone)	UG/L	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	UG/L	1.00 U	1.00 U	1.00 U
Methylene chloride	UG/L	2.00 U	2.00 U	2.00 U
n-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U
n-Propylbenzene	UG/L	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		MW-82	MW-83	MW-84
Sample ID		MW-82	MW-83	MW-84
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		02/07/17	02/07/17	02/01/17
Parameter	**Units**			
Volatile Organic Compounds				
Tetrachloroethene	UG/L	1.00 UJ	1.00 UJ	2.99
Toluene	UG/L	1.00 U	1.00 U	1.00 U
Trichloroethene	UG/L	1.00 UJ	1.00 UJ	46.4
Vinyl chloride	UG/L	1.00 U	1.00 U	1.00 U
Xylene (total)	UG/L	1.00 U	1.00 U	1.00 U
Polychlorinated Biphenyls				
Aroclor 1016	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1221	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1232	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1242	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1248	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1254	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1260	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1262	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1268	UG/L	0.286 U	0.250 U	0.426 U
Dissolved Polychlorinated Biphenyls				
Aroclor 1016	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1221	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1232	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1242	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1248	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1254	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1260	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1262	UG/L	0.286 U	0.250 U	0.426 U
Aroclor 1268	UG/L	0.286 U	0.250 U	0.426 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 4
VALIDATED FIELD QC SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		FIELDQC	FIELDQC	FIELDQC	FIELDQC	FIELDQC
Sample ID		Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Matrix		Water Quality	Water Quality	Water Quality	Water Quality	Water Quality
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/01/17	02/02/17	02/07/17	02/08/17	02/15/17
Parameter	**Units**	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (cis)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethene (trans)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene (Mesitylene)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dioxane	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Acetone	UG/L	10.0 U	10.0 UJ	10.0 UJ	10.0 UJ	10.0 UJ
Benzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon tetrachloride	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 UJ
Chlorobenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methyl ethyl ketone (2-Butanone)	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl tert-butyl ether	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	UG/L	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
n-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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TABLE 4
VALIDATED FIELD QC SAMPLE ANALYTICAL RESULTS
UTC/CARRIER SITE

Location ID		FIELDQC	FIELDQC	FIELDQC	FIELDQC	FIELDQC
Sample ID		Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Matrix		Water Quality	Water Quality	Water Quality	Water Quality	Water Quality
Depth Interval (ft)		-	-	-	-	-
Date Sampled		02/01/17	02/02/17	02/07/17	02/08/17	02/15/17
Parameter	**Units**	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds						
sec-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	UG/L	1.00 U	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ
Toluene	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	UG/L	1.00 U	1.00 U	1.00 UJ	1.00 UJ	1.00 U
Vinyl chloride	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Xylene (total)	UG/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

Flags assigned during chemistry validation are shown.

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AECOM
257 West Genesee Street
Buffalo
NY, 14202
USA
aecom.com