CH2M
Kyle Block
Project Manager
18 Tremont Street
Suite 700
Boston, MA 02108
D 1 617 626 7013
www.ch2m.com

Mr. Maurice Moore
Division of Hazardous Waste Management
New York State Department of Environmental Protection
270 Michigan Ave.
Buffalo, NY 14203-2999

August 20, 2015

Subject: 2015 January – June Semi-Annual Performance Monitoring Report
Essex/Hope Site, Jamestown, New York
CH2M HILL Project No. 660760

Dear Mr. Moore:

This letter report is a summary of the January through June 2015 operation performance period for the remedial system at the above-referenced site. This report is submitted in accordance with the Performance Monitoring Plan (PMP) prepared by URS Corporation (URS) dated March 2014. The PMP continues through 2017.

General Operations

During the reporting period, approximately 454,571 gallons of groundwater were treated and discharged to the City of Jamestown publicly owned treatment works (POTW). The system was not in operation during the months of January, February, and the majority of March because inclement weather hindered the ability to change out carbon. The system carbon was changed out on March 17, 2015, at which point the system was restarted. After the system was back up and running in late March 2015, there were no major disruptions in normal operating conditions. Generally speaking, the pumping rates and discharge volumes for the 3 months after system repair were consistent with historical pumping volumes. The following sections discuss the data on groundwater quality sampling and groundwater flow.

Groundwater Flow Evaluation

Water level measurements were collected on April 14, 2015 and June 26, 2015. Water level data is provided in Appendix A of this report. Groundwater contour maps illustrating pumping conditions during the reporting period are provided as Figures 1 through 4. Groundwater contours were hand-contoured and considered the effects of the pumping wells, although water level elevations from the pumping wells were not used. Shallow recovery wells RW-1S, RW-2S, and RW-3S were pumping at a combined rate of approximately 0.80 gallon per minute (gpm) in April 2015 and 1.42 gpm in June 2015. Shallow groundwater flow was generally to the northeast in areas not captured by the pumping of the shallow recovery wells. Deep recovery wells RW-2D and RW-6D were pumping at a combined average rate of 1.93 gpm in April 2015, and RW-6D was pumping at an average rate of 1.12 gpm in June 2015. There was a general northeasterly flow direction in deep groundwater in April and June 2015, although groundwater flow near the pumping wells (i.e., RW-2D and RW-6D in April, and RW-6D in June) was

toward those wells. Groundwater elevations in the shallow aquifer were generally higher than elevations in the deep aquifer, indicating a downward vertical gradient.

Water Quality Results

Performance monitoring for 2015 includes semiannual sampling of the recovery wells during the first and third quarters as well as monthly influent and effluent sampling of the treatment system. Recovery well sampling was conducted on March 31, 2015. Samples were analyzed by Pace Analytical of Greensburg, Pennsylvania, for volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (USEPA) Method 8260B. The total toxic organics (TTOs) measured in the deep recovery wells, specifically in RW-6D, were higher than the TTOs measured in the shallow wells, which is consistent with past results. In general, VOC concentrations were similar or lower than previous results. The recovery well analytical results are summarized in Table 1. Laboratory reports are included as Appendix B.

In accordance with the City of Jamestown Board of Public Utilities (BPU) Industrial Wastewater Discharge Permit Number 26 (Permit), the treatment system is monitored for pH and VOCs to ensure compliance with the discharge requirements. Sampling points include the influent, primary carbon effluent, and secondary carbon effluent (discharge to POTW). These points are sampled each month and reported to the Jamestown BPU on a semiannual basis. In accordance with the BPU Permit, a semiannual report was submitted to the City of Jamestown on July 29, 2015 providing the results of the first half of 2015. Groundwater treatment system data is also attached to this letter and summarized in Tables 2 through 4. These tables represent the system influent, individual carbon vessel effluent, and post carbon (system discharge to POTW) concentrations. There were no discharge exceedances during this reporting period.

This letter report has been prepared to satisfy the reporting requirements stipulated in the PMP and to evaluate remediation effectiveness on a semiannual basis. If you have any questions or would like additional information, please do not hesitate to call me at (617) 626-7013.

Sincerely,

Kyle Block
Project Manager

cc: Tim King (Dow)
Matt Forcucci (NYSDEC)
James Charles, Esq. (Division of Environmental Enforcement)
Carlo J. Montisano (Custom Production Manufacturing, Inc.)
Travis Pendry (CH2M HILL)
Rachel Vaughan (CH2M HILL)

Tables

TABLE 1

2015 1st Quarter Semiannual Recovery Well Sampling Analytical Results

Essex/Hope Site, Jamestown, New York

Volatile Organic Compounds - Method 8260A (µg/L)	Units	Site GW RAOs	RW-1S	RW-2S	RW-2D	RW-3S	RW-6D
Acetone	µg/L	--	ND	ND	ND	ND	**99,000**
Benzene	µg/L	--	ND	ND	**10.4**	**6.5**	**106**
2-Butanone (MEK)	µg/L	--	ND	ND	ND	ND	**440 J**
Carbon Disulfide	µg/L	--	ND	ND	ND	ND	ND
Chloromethane	µg/L	--	ND	ND	ND	ND	ND
Isopropylbenzene (Cumene)	µg/L	--	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/L	--	ND	ND	ND	ND	ND
1,1-Dichloroethene	µg/L	--	ND	ND	**14.3**	ND	**71.1**
cis-1,2-Dichloroethene	µg/L	--	**59.5**	**9.3**	**2,260**	ND	**20,800**
trans-1,2-Dichloroethene	µg/L	5	ND	ND	**54.6**	ND	**315**
Ethylbenzene	µg/L	5	ND	ND	ND	**9.5**	ND
4-Methyl-2-pentanone (MIBK)	µg/L	--	ND	ND	ND	**11.8**	ND
Methylene Chloride	µg/L	--	ND	ND	ND	ND	ND
Tetrachloroethene	µg/L	--	ND	ND	ND	ND	ND
Toluene	µg/L	5	ND	ND	ND	ND	**1.7**
Trichloroethene	µg/L	5	**37.7**	**8.0**	**2,490**	ND	**16,000**
Vinyl Chloride	µg/L	5	**3.5**	ND	**373**	ND	**5,120**
Total Xylenes	µg/L	5	ND	ND	ND	**77.7**	ND

Notes:
Site GW RAOs = Site Groundwater Remedial Action Objectives
µg/L = micrograms per liter
ND = Not detected/detected below minimum laboratory reporting limit

TABLE 2

January - June 2015 Pre Carbon Monitoring Data

Essex/Hope Site, Jamestown, New York

Parameter	Units	Sample Date											
		January	Febrauary	March	April 23	May 13	June 11	Jul	Aug	Sep	Oct	Nov	Dec
Acetone	µg/L	System not in Operation	System not in Operation	System not in Operation	**18,100**	**26,600**	**46,000 D**						
Benzene	µg/L				**34.2**	**37.9**	**50**						
2-Butanone (MEK)	µg/L				**57.4**	**83.0**	**230**						
Chloroform	µg/L				ND	ND	ND						
Chloromethane	µg/L				ND	**7.4**	ND						
Isopropylbenzene (Cumene)	µg/L				ND	ND	ND						
1,1-Dichloroethane	µg/L				ND	ND	ND						
1,1-Dichloroethene	µg/L				**23.9**	**38.4**	**34**						
cis-1,2-Dichloroethene	µg/L				**6,230**	**11,800**	**11,000 D**						
trans-1,2-Dichloroethene	µg/L				**142**	ND	**28**						
Ethylbenzene	µg/L				ND	ND	ND						
Methylene Chloride	µg/L				ND	ND	ND						
Toluene	µg/L				ND	**1.0**	**1.3 J**						
Trichloroethene	µg/L				**4,250**	**4,470**	**9,300**						
Vinyl Chloride	µg/L				**879**	**2,020**	**2,000 D**						
Total Xylenes	µg/L				ND	ND	ND						
Pre-Carbon Total VOCs	**µg/L**	**NA**	**NA**	**NA**	**29,717**	**45,058**	**68,643**						

Notes:

VOC = volatile organic compound

ND = Not detected/detected below minimum laboratory reporting limit

D = sample results obtained from a dilution

µg/L = micrograms per liter

Pre-carbon results represent system influent

TABLE 3

January - June 2015 Primary Carbon Monitoring Data

Essex/Hope Site, Jamestown, New York

Parameter	Units	Sample Date											
		January	Febrauary	March	April 23	May 13	Jun 11	Jul	Aug	Sep	Oct	Nov	Dec
Acetone	µg/L	System not in Operation	System not in Operation	System not in Operation	**20,800**	**38,400**	**42,000 D**						
Benzene	µg/L				ND	ND	**0.34 J**						
2-Butanone (MEK)	µg/L				ND	ND	**77**						
Chloroform	µg/L				ND	ND	ND						
Chloromethane	µg/L				ND	ND	ND						
Isopropylbenzene (Cumene)	µg/L				ND	ND	ND						
1,1-Dichloroethane	µg/L				ND	ND	ND						
1,1-Dichloroethene	µg/L				ND	ND	**1.8**						
cis-1,2-Dichloroethene	µg/L				**13.6**	ND	**950 D**						
trans-1,2-Dichloroethene	µg/L				ND	ND	**1.3**						
Ethylbenzene	µg/L				ND	ND	ND						
Methylene Chloride	µg/L				ND	ND	ND						
Toluene	µg/L				ND	ND	ND						
Trichloroethene	µg/L				ND	ND	44						
Vinyl Chloride	µg/L				**240**	**1,230**	**1,900 D**						
Total Xylenes	µg/L				ND	ND	ND						
Primary Carbon Total VOCs	**µg/L**	**NA**	**NA**	**NA**	**21,054**	**39,630**	**44,974**						

Notes:

VOC = volatile organic compound

ND = Not detected/detected below minimum laboratory reporting limit

D = sample results obtained from a dilution

µg/L = micrograms per liter

Primary carbon results represent effluent from the primary carbon vessel in the two carbon vessel system

TABLE 4

January - June 2015 Post Carbon (Effluent) Monitoring Data

Essex/Hope Site, Jamestown, New York

Parameter	Units	Sample Date											
		January	Febrauary	March	April 23	May 13	Jun 11	Jul	Aug	Sep	Oct	Nov	Dec
Acetone	µg/L	System not in Operation	System not in Operation	System not in Operation	**36,000**	**30,200**	**8,300 D**						
Benzene	µg/L				ND	ND	ND						
2-Butanone (MEK)	µg/L				ND	ND	ND						
Chloroform	µg/L				ND	ND	ND						
Chloromethane	µg/L				ND	**7.4**	ND						
Isopropylbenzene (Cumene)	µg/L				ND	ND	ND						
1,1-Dichloroethane	µg/L				ND	ND	ND						
1,1-Dichloroethene	µg/L				ND	ND	ND						
cis-1,2-Dichloroethene	µg/L				ND	ND	**0.3 J**						
trans-1,2-Dichloroethene	µg/L				ND	ND	ND						
Ethylbenzene	µg/L				ND	ND	ND						
Methylene Chloride	µg/L				ND	ND	ND						
Toluene	µg/L				ND	ND	ND						
Trichloroethene	µg/L				ND	ND	ND						
Vinyl Chloride	µg/L				**2.1**	**8.5**	**150**						
Total Xylenes	µg/L				ND	ND	ND						
Post-Carbon Total VOCs	**µg/L**	**NA**	**NA**	**NA**	**36,002**	**30,216**	**8,450**						
Post-Carbon TTOs	**µg/L**	**NA**	**NA**	**NA**	**2**	**16**	**150**						

Notes:

VOC = volatile organic compound

TTOs = total toxic organics

ND = Not detected/detected below minimum laboratory reporting limit

D = sample results obtained from a dilution

µg/L = micrograms per liter

Post-carbon results represent system effluent from the secondary carbon vessel to the POTW

Post-carbon sample is a laboratory-prepared composite of four grab samples taken at 30-minute intervals

POTW Discharge Limit = 2,130 µg/L TTOs

Figures

LEGEND

- MONITORING WELL
- RECOVERY WELL
- APPROXIMATE GROUNDWATER MONITORING POINT LOCATION
- PIEZOMETER LOCATION
- VAPOR PROBE LOCATION
- —1269— GROUNDWATER CONTOUR AND ELEVATION

APPROXIMATE PUMPING RATES

RW-1S: 0.14 GPM

RW-2S: 0.55 GPM

RW-3S: 0.11 GPM

RW-2D: 1.25 GPM (DEEP)

RW-6D: 0.68 GPM (DEEP)

NOTE:
PUMPING WELL WATER LEVELS ARE NOT INCLUDED IN CONTOURING.

MW-16S 1267.82
MW-16D
N/F HOPE WINDOWS INDUSTRIES
N/F HOPE WINDOWS INDUSTRIES
N/F JOHNSON MACHINE
HOUSE (DEMO)
N/F JOHNSON MACHINE
BIGELOW AVENUE
"H & H METAL SP
CONC. BLOCK
MW-14D
MW-14S 1268.80
MW-15D
MW-15S 1267.85
GP7
MW-22D
HOPKINS AVENUE
(PUMPING) 1265.73
RW-2S
RW-2D (PUMPING)
VP-8D
GP5S
GP5D
MW-21D
RW-6D (PUMPING)
MW-18 1266.87
PZ-7D
MW-25S 1263.65
MW-25D
MW-17
HW-2 1269.78
MW-6
MW-7D
MW-7S 1269.92
MW-7DD
FORMER PLANT 5
MW-8
MW-19S 1267.73
MW-19D
MW-11D
GP4D
GP4S 1269.91
VP-1S
GP1S
VP-2S
PZ-3D
GP3S
GP3D
MW-11 1270.07
VP-5D
RW-1S
RW-1D
MW-10 1270.42
PZ-6S 1268.47
PZ-6D
VP-6D
VP-6S
N/F JOHNSON MACHINE
1267
1268
1269
1270
1271
1272
1273
(PUMPING) 1266.36
NPL AREA
GP2S
GP2D
MW-20 1271.54
PZ-5S 1270.37
PZ-5D
MW-12 1270.66
APPROXIMATE PROPERTY BOUNDARY, TYP
BOILER BUILDING 2 STY., BRICK BLDG. (DEMOLISHED)
CONC. RAMP (DEMOLISHED)
VP-4S
VP-3S
HW-6
RW-5S
MW-26S 1271.73
MW-27S 1269.46
MW-2 1271.28
RW-3S 1268.44 (PUMPING)
FORMER UST AREA
HW-8 1272.13
MW-24S 1271.34
MW-23S 1272.09
MW-23D
AST/UST AREA
HW-9 1271.74
MW-28S 1270.55
MW-4 1271.46
FORMER ESSEX SPECIALTY PRODUCTS, LILLY INDUSTRIES, INC., AND MASTER MACHINE, INC. FACILITIES (NOW "WEST" BUILDING)
MW-30S 1272.58
MW-29S 1273.04
UST AREA
MW-31S 1272.70
MW-13 1270.17
VP-7D
MW-1
APPROXIMATE PROPERTY BOUNDARY, TYP
BLACKSTONE AVENUE
N/F WILTSIE LIDDA
UNITED INDUSTRIES
CHASSIS SHOP
N/F REED J WILLIAM
N/F JAMESTOWN MATTRESS CO.
JAMESTOWN METAL PRODUCTS
N/F JMP ACQUISITION CORP.

SITE PLAN

N

0 30 60 90
SCALE IN FEET

Figure 1
Shallow Groundwater
April 14, 2015
DOW CHEMICAL CORPORATION
ESSEX/HOPE SITE
CITY OF JAMESTOWN, NEW YORK

ch2m

662242

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LEGEND

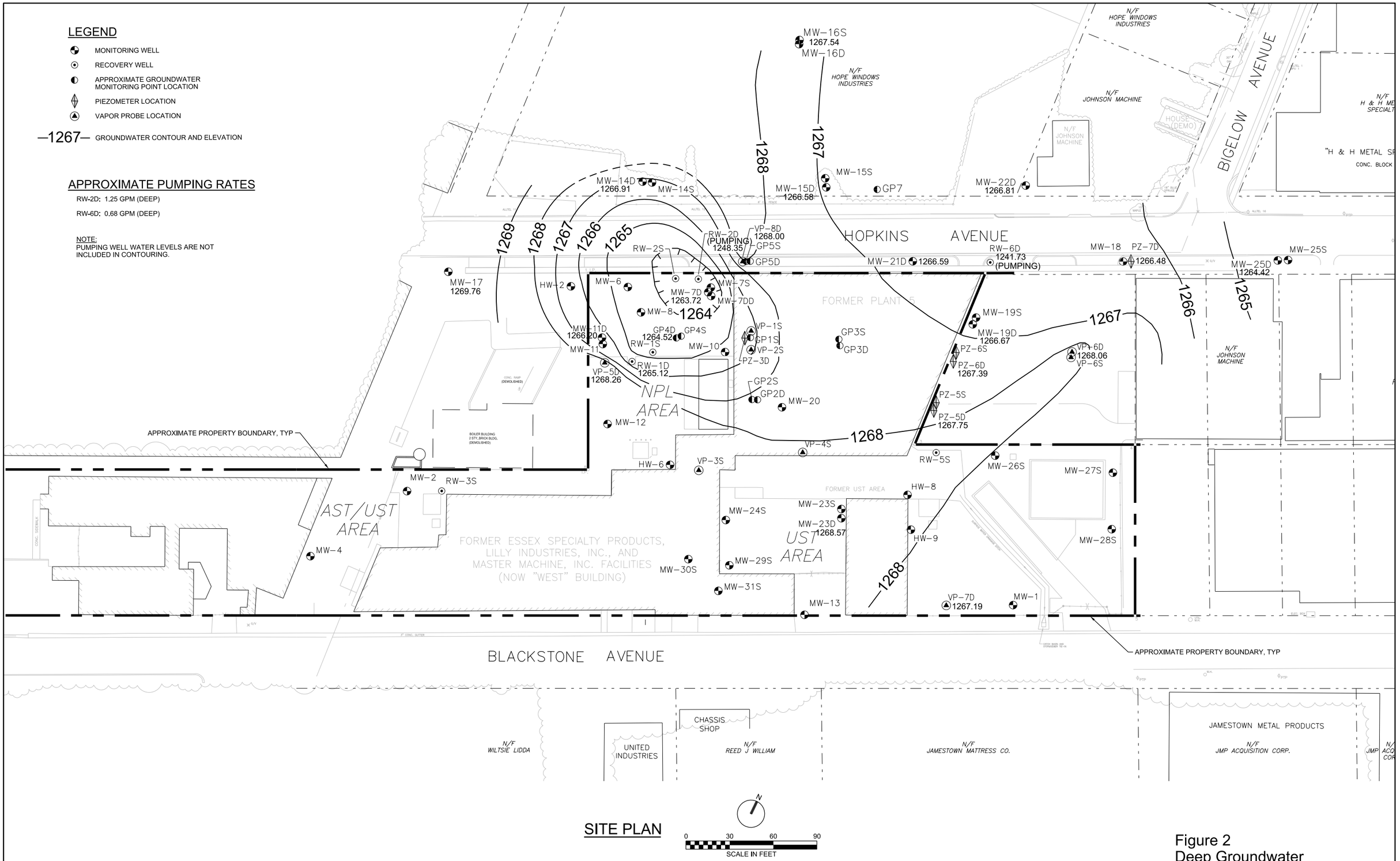
- MONITORING WELL
- RECOVERY WELL
- APPROXIMATE GROUNDWATER MONITORING POINT LOCATION
- PIEZOMETER LOCATION
- VAPOR PROBE LOCATION
- —1267— GROUNDWATER CONTOUR AND ELEVATION

APPROXIMATE PUMPING RATES

RW-2D: 1.25 GPM (DEEP)

RW-6D: 0.68 GPM (DEEP)

NOTE:
PUMPING WELL WATER LEVELS ARE NOT INCLUDED IN CONTOURING.



SITE PLAN

Figure 2
Deep Groundwater
April 14, 2015
DOW CHEMICAL CORPORATION
ESSEX/HOPE SITE
CITY OF JAMESTOWN, NEW YORK

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LEGEND

- MONITORING WELL
- RECOVERY WELL
- APPROXIMATE GROUNDWATER MONITORING POINT LOCATION
- PIEZOMETER LOCATION
- VAPOR PROBE LOCATION
- —1269— GROUNDWATER CONTOUR AND ELEVATION

APPROXIMATE PUMPING RATES

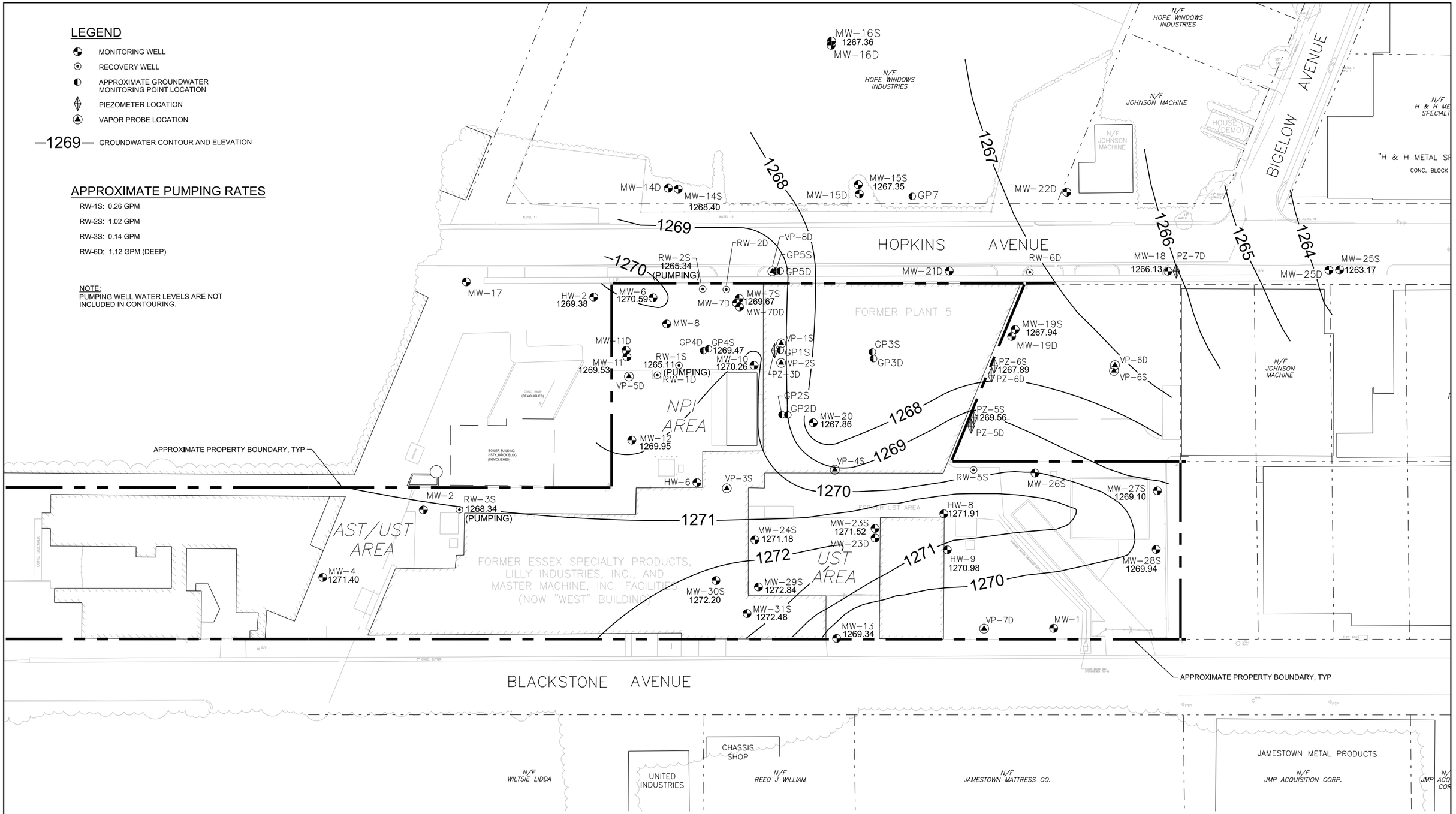
RW-1S: 0.26 GPM

RW-2S: 1.02 GPM

RW-3S: 0.14 GPM

RW-6D: 1.12 GPM (DEEP)

NOTE:
PUMPING WELL WATER LEVELS ARE NOT INCLUDED IN CONTOURING.



SITE PLAN

N

0 30 60 90

SCALE IN FEET

Figure 3
Shallow Groundwater
June 26, 2015
DOW CHEMICAL CORPORATION
ESSEX/HOPE SITE
CITY OF JAMESTOWN, NEW YORK

662242

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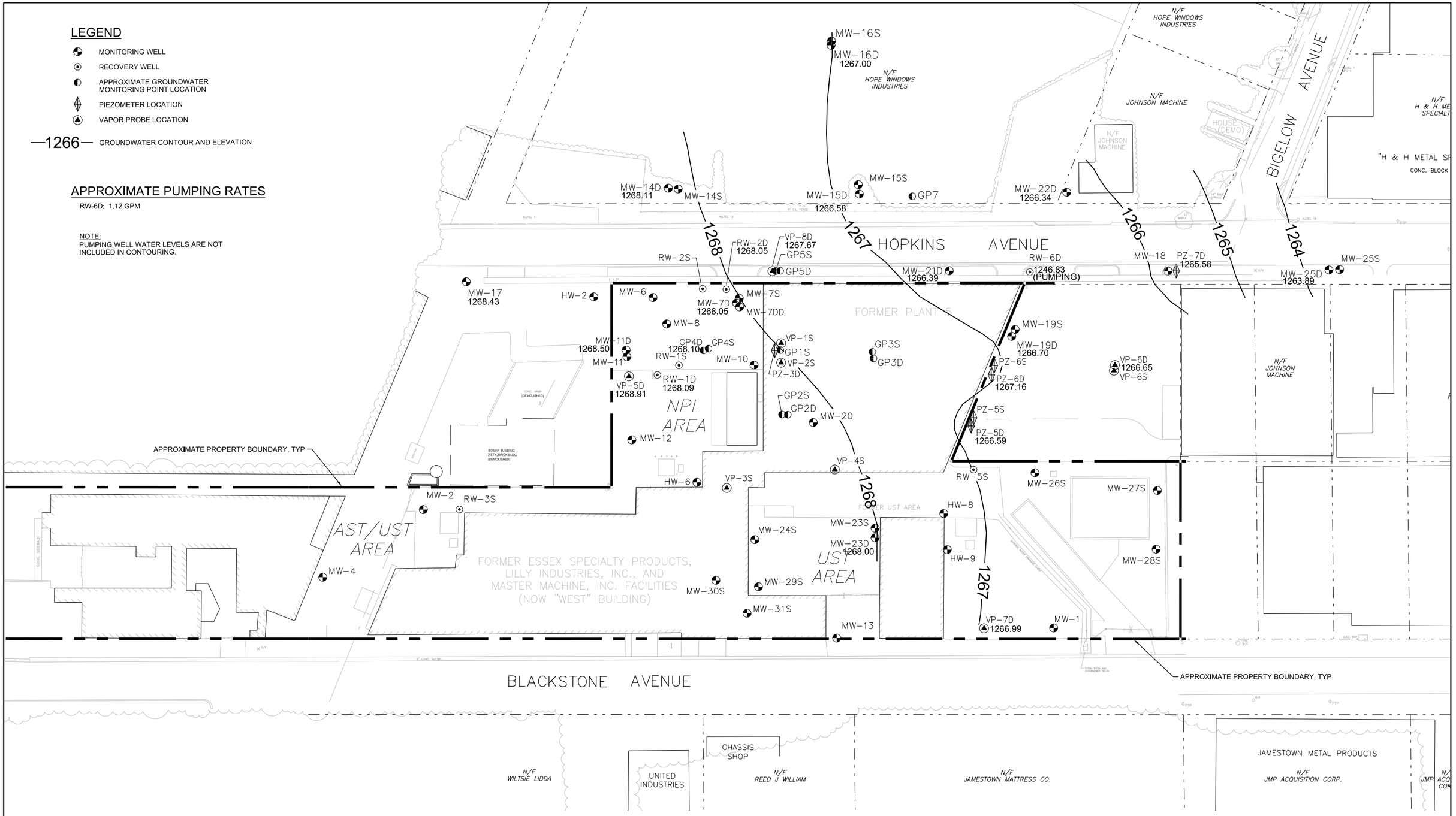
LEGEND

- MONITORING WELL
- RECOVERY WELL
- APPROXIMATE GROUNDWATER MONITORING POINT LOCATION
- PIEZOMETER LOCATION
- VAPOR PROBE LOCATION
- —1266— GROUNDWATER CONTOUR AND ELEVATION

APPROXIMATE PUMPING RATES

RW-6D: 1.12 GPM

NOTE:
PUMPING WELL WATER LEVELS ARE NOT INCLUDED IN CONTOURING.



SITE PLAN

Figure 4
Deep Groundwater
June 26, 2015
DOW CHEMICAL CORPORATION
ESSEX/HOPE SITE
CITY OF JAMESTOWN, NEW YORK

662242

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Appendix A
Water Level Measurement Data

APPENDIX A

2015 Water Level Data

Essex/Hope Site, Jamestown, New York

Monitoring Location	Northing	Easting	Reference Elevation (ft msl)	Depth to Top of Screen	Depth to Bottom of Screen	Screened Zone	April 14, 2015			June 26, 2015		
							Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)	Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)
MW-1	9758.72	10383.65	1280.48	--	20.0	Shallow	NA	NA	NA	NA	NA	NA
MW-2	9837.15	9959.69	1279.87	--	16.0	Shallow	8.59	NA	1271.28	DRY	NA	NA
MW-4	9792.33	9900.76	1281.02	13.0	18.0	Shallow	9.56	NA	1271.46	9.62	NA	1271.40
MW-5	9789.62	9631.76	1280.82	9.5	20.0	Shallow	NA	NA	NA	NA	NA	NA
MW-6	9977.12	10118.88	1277.98	--	--	Shallow	8.09	NA	1269.89	7.39	NA	1270.59
MW-7S	9976.65	10175.68	1277.73	10.0	20.0	Shallow	7.81	NA	1269.92	8.06	NA	1269.67
MW-7D	9973.26	10174.85	1277.8	35.0	45.0	Deep	14.08	NA	1263.72	9.75	NA	1268.05
MW-7DD	9970.85	10176.27	1277.74	90.0	100.0	Glacial Till	NA	NA	NA	NA	NA	NA
MW-8	9959.61	10127.69	1277.97	39.6	49.6	Deep	NA	NA	NA	NA	NA	NA
MW-10	9932.47	10185.71	1277.94	8.5	18.5	Shallow	7.52	NA	1270.42	7.68	NA	1270.26
MW-11	9937.99	10101.70	1277.75	5.0	15.0	Shallow	7.68	NA	1270.07	8.22	NA	1269.53
MW-11D	9942.38	10101.15	1277.85	35.0	45.0	Deep	11.65	NA	1266.20	9.35	NA	1268.50
MW-12	9883.09	10104.93	1278.18	4.0	14.0	Shallow	7.52	NA	1270.66	8.23	NA	1269.95
MW-13	9752.06	10240.29	1278.12	8.0	18.0	Shallow	7.95	NA	1270.17	8.78	NA	1269.34
MW-14S	10048.78	10135.52	1280.25	10.0	20.0	Shallow	11.45	NA	1268.80	11.85	NA	1268.40
MW-14D	10049.51	10129.19	1280.01	40.0	50.0	Deep	13.10	NA	1266.91	11.90	NA	1268.11
MW-15S	10051.83	10254.49	1279.55	10.0	20.0	Shallow	11.70	NA	1267.85	12.20	NA	1267.35
MW-15D	10045.56	10255.21	1279.46	34.0	44.0	Deep	12.49	NA	1266.97	12.88	NA	1266.58
MW-16S	10146.78	10236.86	1279.32	7.0	17.0	Shallow	11.50	NA	1267.82	11.96	NA	1267.36
MW-16D	10143.95	10236.60	1279.05	36.0	46.0	Deep	11.51	NA	1267.54	12.05	NA	1267.00
MW-17	9987.63	9995.52	1278.7	--	--	Deep	8.94	NA	1269.76	10.27	NA	1268.43
MW-18	9994.67	10459.22	1275.49	--	20.0	Shallow	8.62	NA	1266.87	9.36	NA	1266.13
MW-19S	9956.15	10358.21	1276.82	9.0	19.0	Shallow	9.09	NA	1267.73	8.88	NA	1267.94
MW-19D	9951.57	10355.97	1276.21	34.0	44.0	Deep	9.54	NA	1266.67	9.51	NA	1266.70
MW-20	9894.73	10224.51	1278.56	6.5	11.5	Shallow	7.02	NA	1271.54	10.70	NA	1267.86
MW-21D	9995.01	10314.80	1276.12	31.5	41.0	Deep	9.53	NA	1266.59	9.73	NA	1266.39
MW-22D	10048.17	10391.35	1276.04	32.5	42.0	Deep	9.23	NA	1266.81	9.70	NA	1266.34
MW-23S	9824.70	10265.64	1277.85	5.0	14.5	Shallow	5.76	NA	1272.09	6.33	NA	1271.52
MW-23D	9818.32	10265.67	1277.89	28.0	37.5	Deep	9.32	NA	1268.57	9.89	NA	1268.00
MW-24S	9817.13	10186.21	1278.77	5.0	14.5	Shallow	7.43	NA	1271.34	7.59	NA	1271.18
MW-25S	9995.60	10572.35	1272.76	7.0	17.0	Shallow	9.11	NA	1263.65	9.59	NA	1263.17
MW-25D	9995.46	10565.28	1273.41	31.0	41.0	Deep	8.99	NA	1264.42	9.52	NA	1263.89

Monitoring Location	Northing	Easting	Reference Elevation (ft msl)	Depth to Top of Screen	Depth to Bottom of Screen	Screened Zone	April 14, 2015			June 26, 2015		
							Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)	Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)
MW-26S	9861.35	10371.32	1279.422	5.0	15.0	Shallow	7.69	NA	1271.73	CNL	NA	NA
MW-27S	9849.63	10452.22	1278.864	10.0	20.0	Shallow	9.40	NA	1269.46	9.76	NA	1269.10
MW-28S	9810.84	10451.41	1279.25	7.0	17.0	Shallow	8.70	NA	1270.55	9.31	NA	1269.94
MW-29S	9786.07	10188.64	1280.7	4.0	14.0	Shallow	7.66	NA	1273.04	7.86	NA	1272.84
MW-30S	9790.04	10160.48	1280.80	--	--	Shallow	8.22	NA	1272.58	8.60	NA	1272.20
MW-31S	9768.49	10181.09	1280.63	--	--	Shallow	7.93	NA	1272.70	8.15	NA	1272.48
HW-2	9977.65	10079.79	1281.13	--	--	Shallow	11.35	NA	1269.78	11.75	NA	1269.38
HW-8	9834.66	10312.09	1277.81	6.0	16.0	Shallow	5.68	NA	1272.13	5.90	NA	1271.91
HW-9	9810.53	10313.39	1280.78	6.0	16.0	Shallow	9.04	NA	1271.74	9.80	NA	1270.98
HW-10	9837.30	9966.74	1279.55	7.0	17.0	Shallow	NA	NA	NA	NA	NA	NA
RW-1S	9932.36	10136.05	1275.81	10.5	16.0	Shallow	9.45	11.50	1266.36	10.70	11.50	1265.11
RW-1D	9925.99	10121.77	1276.34	32.0	57.0	Deep	11.22	NA	1265.12	8.25	NA	1268.09
RW-2S	9982.95	10151.71	1276.33	10.0	15.5	Shallow	10.60	12.70	1265.73	10.99	12.70	1265.34
RW-2D	9982.61	10169.31	1276.35	27.0	42.0	Deep	28.00	36.90	1248.35	8.30	36.90	1268.05
RW-3S	9837.09	9990.97	1278.14	9.0	13.5	Shallow	9.70	8.80	1268.44	9.80	8.80	1268.34
RW-5S	9863.43	10330.75	1277.29	7.0	10.0	Shallow	NA	NA	NA	NA	NA	NA
RW-6D	9994.04	10367.91	1277.33	--	--	Deep	35.60	NA	1241.73	30.50	NA	1246.83
GP-1S	9942.44	10203.11	1278.83	8.0	12.8	Shallow	NA	NA	NA	NA	NA	NA
GP-2S	9899.88	10204.16	1278.46	2.6	12.6	Shallow	NA	NA	NA	NA	NA	NA
GP-2D	9899.74	10207.98	1278.56	30.0	34.8	Deep	NA	NA	NA	NA	NA	NA
GP-3S	9941.25	10263.89	1278.59	4.0	14.0	Shallow	NA	NA	NA	NA	NA	NA
GP-3D	9936.90	10264.59	1278.62	34.0	38.8	Deep	NA	NA	NA	NA	NA	NA
GP-4S	9940.86*	10154.97*	1278.06	10.8	15.8	Shallow	8.15	NA	1269.91	8.59	NA	1269.47
GP-4D	9942.17	10152.22	1277.95	39.0	43.8	Deep	13.43	NA	1264.52	9.85	NA	1268.10
GP-5S	9994.73	10200.21	1277.44	7.0	11.8	Shallow	NA	NA	NA	NA	NA	NA
GP-5D	9994.86	10202.99	1276.81	36.0	40.8	Deep	NA	NA	NA	NA	NA	NA
PZ-1S	9981.85	10169.31	1277.77	--	--	Shallow	NA	NA	NA	NA	NA	NA
PZ-1D	9980.43	10171.26	1277.64	--	--	Deep	NA	NA	NA	NA	NA	NA
PZ-2D	9979.56	10172.48	1277.55	--	--	Deep	NA	NA	NA	NA	NA	NA
PZ-3D	9942.04	10199.29	1278.8	20.0	40.0	Deep	NA	NA	NA	NA	NA	NA
PZ-4D	9946.23	10195.68	1278.71	--	--	Deep	NA	NA	NA	NA	NA	NA
PZ-5S	9897.74	10330.79	1276.42	5.5	12.0	Shallow	6.05	NA	1270.37	6.86	NA	1269.56
PZ-5D	9894.57	10329.71	1276.4	21.0	42.0	Deep	8.65	NA	1267.75	9.81	NA	1266.59
PZ-6S	9932.21	10344.49	1276.61	8.5	13.5	Shallow	8.14	NA	1268.47	8.72	NA	1267.89
PZ-6D	9929.80	10343.47	1276.62	25.5	45.5	Deep	9.23	NA	1267.39	9.46	NA	1267.16
PZ-7D	9994.55	10463.25	1275.68	22.0	42.0	Deep	9.20	NA	1266.48	10.10	NA	1265.58
PZ-8D	9856.49	10237.81	1278.12	21.0	41.0	Deep	NA	NA	NA	NA	NA	NA

Monitoring Location	Northing	Easting	Reference Elevation (ft msl)	Depth to Top of Screen	Depth to Bottom of Screen	Screened Zone	April 14, 2015			June 26, 2015		
							Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)	Depth to Water	Depth to Top of Pump	Groundwater Elevation (ft msl)
PZ-9D	9856.24	10291.17	1277.3	19.0	39.0	Deep	NA	NA	NA	NA	NA	NA
PZ-10D	9858.98	10366.42	1277.52	26.5	46.5	Deep	NA	NA	NA	NA	NA	NA
PZ-11D	9863.07	10452.90	1276.63	21.3	41.3	Deep	9.59	NA	NA	9.82	NA	NA
VP-5D	9925.11	10103.01	1277.88	12.5	34.3	Deep	9.62	NA	1268.26	8.97	NA	1268.91
VP-6S	9928.81	10423.46	1276.48	18.3	24.0	Deep upper gravel	1.54	NA	1274.94	9.70	NA	1266.78
VP-6D	9932.57	10424.14	1276.6	29.5	39.5	Deep	8.54	NA	1268.06	9.95	NA	1266.65
VP-7D	9758.49	10337.71	1278.64	20.4	39.3	Deep	11.45	NA	1267.19	11.65	NA	1266.99
VP-8D	9994.62	10197.81	1277.15	20.0	39.0	Deep	9.15	NA	1268.00	9.48	NA	1267.67

Notes:
NA = Not Applicable
CNL = Could not locate
RW-4S, RW-5S taken offline in October 2002 for UST Removal.
Wells RW-4S, TW-01, and HW-7 destroyed during UST removal operations.

Appendix B
Laboratory Certificates of Analysis

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 07, 2015

Mr. Mark Dowiak
URS Corporation
Foster Plaza 6
681 Andersen Drive, Suite 400
Pittsburgh, PA 15220

RE: Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Dear Mr. Dowiak:
Enclosed are the analytical results for sample(s) received by the laboratory on April 24, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Timothy Reed
timothy.reed@pacelabs.com
Project Manager

Enclosures

cc: Ms. Valerie Sibeto, URS Corporation

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Greensburg, PA 15601
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CERTIFICATIONS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Sample: PRE-CARB **Lab ID: 30146519001** Collected: 04/23/15 10:30 Received: 04/24/15 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**18100**	ug/L	1000	100		05/05/15 19:04	67-64-1	
Benzene	**34.2**	ug/L	1.0	1		05/05/15 18:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/05/15 18:39	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/05/15 18:39	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/05/15 18:39	74-83-9	
2-Butanone (MEK)	**57.4**	ug/L	10.0	1		05/05/15 18:39	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/05/15 18:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/05/15 18:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/05/15 18:39	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/05/15 18:39	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/05/15 18:39	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/05/15 18:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/05/15 18:39	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 18:39	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 18:39	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 18:39	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/05/15 18:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/05/15 18:39	107-06-2	
1,1-Dichloroethene	**23.9**	ug/L	1.0	1		05/05/15 18:39	75-35-4	
cis-1,2-Dichloroethene	**6230**	ug/L	100	100		05/05/15 19:04	156-59-2	
trans-1,2-Dichloroethene	**142**	ug/L	1.0	1		05/05/15 18:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/05/15 18:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 18:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 18:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/05/15 18:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/05/15 18:39	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/05/15 18:39	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/05/15 18:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/05/15 18:39	108-10-1	
Styrene	ND	ug/L	1.0	1		05/05/15 18:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/05/15 18:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/05/15 18:39	127-18-4	
Toluene	ND	ug/L	1.0	1		05/05/15 18:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/05/15 18:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/05/15 18:39	79-00-5	
Trichloroethene	**4250**	ug/L	100	100		05/05/15 19:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/05/15 18:39	75-69-4	
Vinyl chloride	**879**	ug/L	100	100		05/05/15 19:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/05/15 18:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/05/15 18:39	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	84-113	1		05/05/15 18:39	460-00-4	
1,2-Dichloroethane-d4 (S)	85	%	84-124	1		05/05/15 18:39	17060-07-0	
Toluene-d8 (S)	105	%	79-118	1		05/05/15 18:39	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Sample: PRIMARY-EFF **Lab ID: 30146519002** Collected: 04/23/15 10:35 Received: 04/24/15 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**20800**	ug/L	5000	500		05/05/15 20:18	67-64-1	
Benzene	ND	ug/L	1.0	1		05/05/15 19:29	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/05/15 19:29	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/05/15 19:29	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/05/15 19:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/05/15 19:29	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/05/15 19:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/05/15 19:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/05/15 19:29	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/05/15 19:29	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/05/15 19:29	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/05/15 19:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/05/15 19:29	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 19:29	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 19:29	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 19:29	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/05/15 19:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/05/15 19:29	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/05/15 19:29	75-35-4	
cis-1,2-Dichloroethene	**13.6**	ug/L	1.0	1		05/05/15 19:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/05/15 19:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/05/15 19:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 19:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 19:29	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/05/15 19:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/05/15 19:29	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/05/15 19:29	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/05/15 19:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/05/15 19:29	108-10-1	
Styrene	ND	ug/L	1.0	1		05/05/15 19:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/05/15 19:29	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/05/15 19:29	127-18-4	
Toluene	ND	ug/L	1.0	1		05/05/15 19:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/05/15 19:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/05/15 19:29	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/05/15 19:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/05/15 19:29	75-69-4	
Vinyl chloride	**240**	ug/L	1.0	1		05/05/15 19:29	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/05/15 19:29	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/05/15 19:29	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	84-113	1		05/05/15 19:29	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	84-124	1		05/05/15 19:29	17060-07-0	
Toluene-d8 (S)	99	%	79-118	1		05/05/15 19:29	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Sample: POST-CARB **Lab ID: 30146519003** Collected: 04/23/15 12:10 Received: 04/24/15 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**36000**	ug/L	1000	100		05/05/15 21:08	67-64-1	
Benzene	ND	ug/L	1.0	1		05/05/15 20:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/05/15 20:43	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/05/15 20:43	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/05/15 20:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/05/15 20:43	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/05/15 20:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/05/15 20:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/05/15 20:43	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/05/15 20:43	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/05/15 20:43	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/05/15 20:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/05/15 20:43	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 20:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 20:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 20:43	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/05/15 20:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/05/15 20:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/05/15 20:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/05/15 20:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/05/15 20:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/05/15 20:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 20:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 20:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/05/15 20:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/05/15 20:43	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/05/15 20:43	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/05/15 20:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/05/15 20:43	108-10-1	
Styrene	ND	ug/L	1.0	1		05/05/15 20:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/05/15 20:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/05/15 20:43	127-18-4	
Toluene	ND	ug/L	1.0	1		05/05/15 20:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/05/15 20:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/05/15 20:43	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/05/15 20:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/05/15 20:43	75-69-4	
Vinyl chloride	**2.1**	ug/L	1.0	1		05/05/15 20:43	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/05/15 20:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/05/15 20:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	106	%	84-113	1		05/05/15 20:43	460-00-4	
1,2-Dichloroethane-d4 (S)	84	%	84-124	1		05/05/15 20:43	17060-07-0	
Toluene-d8 (S)	102	%	79-118	1		05/05/15 20:43	2037-26-5	

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Sample: TB-01 **Lab ID: 30146519004** Collected: 04/23/15 00:01 Received: 04/24/15 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		05/05/15 11:59	67-64-1	
Benzene	ND	ug/L	1.0	1		05/05/15 11:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/05/15 11:59	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/05/15 11:59	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/05/15 11:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/05/15 11:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/05/15 11:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/05/15 11:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/05/15 11:59	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/05/15 11:59	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/05/15 11:59	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/05/15 11:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/05/15 11:59	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 11:59	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 11:59	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/05/15 11:59	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/05/15 11:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/05/15 11:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/05/15 11:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/05/15 11:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/05/15 11:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/05/15 11:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 11:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/05/15 11:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/05/15 11:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/05/15 11:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/05/15 11:59	98-82-8	
Methylene Chloride	**4.4**	ug/L	1.0	1		05/05/15 11:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/05/15 11:59	108-10-1	
Styrene	ND	ug/L	1.0	1		05/05/15 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/05/15 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/05/15 11:59	127-18-4	
Toluene	ND	ug/L	1.0	1		05/05/15 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/05/15 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/05/15 11:59	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/05/15 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/05/15 11:59	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		05/05/15 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/05/15 11:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/05/15 11:59	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	84-113	1		05/05/15 11:59	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	84-124	1		05/05/15 11:59	17060-07-0	
Toluene-d8 (S)	104	%	79-118	1		05/05/15 11:59	2037-26-5	

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QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

QC Batch: MSV/23347 Analysis Method: EPA 8260C
QC Batch Method: EPA 8260C Analysis Description: 8260C MSV
Associated Lab Samples: 30146519001, 30146519002, 30146519003, 30146519004

METHOD BLANK: 889226 Matrix: Water
Associated Lab Samples: 30146519001, 30146519002, 30146519003, 30146519004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	05/05/15 11:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/05/15 11:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/05/15 11:34	
1,1-Dichloroethane	ug/L	ND	1.0	05/05/15 11:34	
1,1-Dichloroethene	ug/L	ND	1.0	05/05/15 11:34	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/05/15 11:34	
1,2-Dichloroethane	ug/L	ND	1.0	05/05/15 11:34	
1,2-Dichloropropane	ug/L	ND	1.0	05/05/15 11:34	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/05/15 11:34	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/05/15 11:34	
2-Butanone (MEK)	ug/L	ND	10.0	05/05/15 11:34	
2-Hexanone	ug/L	ND	10.0	05/05/15 11:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	05/05/15 11:34	
Acetone	ug/L	ND	10.0	05/05/15 11:34	
Benzene	ug/L	ND	1.0	05/05/15 11:34	
Bromodichloromethane	ug/L	ND	1.0	05/05/15 11:34	
Bromoform	ug/L	ND	1.0	05/05/15 11:34	
Bromomethane	ug/L	ND	1.0	05/05/15 11:34	
Carbon disulfide	ug/L	ND	1.0	05/05/15 11:34	
Carbon tetrachloride	ug/L	ND	1.0	05/05/15 11:34	
Chlorobenzene	ug/L	ND	1.0	05/05/15 11:34	
Chloroethane	ug/L	ND	1.0	05/05/15 11:34	
Chloroform	ug/L	ND	1.0	05/05/15 11:34	
Chloromethane	ug/L	ND	1.0	05/05/15 11:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/05/15 11:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/05/15 11:34	
Dibromochloromethane	ug/L	ND	1.0	05/05/15 11:34	
Ethylbenzene	ug/L	ND	1.0	05/05/15 11:34	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/05/15 11:34	
m&p-Xylene	ug/L	ND	2.0	05/05/15 11:34	
Methylene Chloride	ug/L	ND	1.0	05/05/15 11:34	
o-Xylene	ug/L	ND	1.0	05/05/15 11:34	
Styrene	ug/L	ND	1.0	05/05/15 11:34	
Tetrachloroethene	ug/L	ND	1.0	05/05/15 11:34	
Toluene	ug/L	ND	1.0	05/05/15 11:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/05/15 11:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/05/15 11:34	
Trichloroethene	ug/L	ND	1.0	05/05/15 11:34	
Trichlorofluoromethane	ug/L	ND	1.0	05/05/15 11:34	
Vinyl chloride	ug/L	ND	1.0	05/05/15 11:34	
1,2-Dichloroethane-d4 (S)	%	93	84-124	05/05/15 11:34	

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QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

METHOD BLANK: 889226 Matrix: Water
Associated Lab Samples: 30146519001, 30146519002, 30146519003, 30146519004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	97	84-113	05/05/15 11:34	
Toluene-d8 (S)	%	95	79-118	05/05/15 11:34	

LABORATORY CONTROL SAMPLE: 889227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.8	99	62-130	
1,1,2,2-Tetrachloroethane	ug/L	20	17.8	89	74-115	
1,1,2-Trichloroethane	ug/L	20	18.8	94	73-121	
1,1-Dichloroethane	ug/L	20	20.0	100	64-125	
1,1-Dichloroethene	ug/L	20	19.6	98	58-126	
1,2-Dichlorobenzene	ug/L	20	18.7	93	76-117	
1,2-Dichloroethane	ug/L	20	19.5	98	66-124	
1,2-Dichloropropane	ug/L	20	19.1	95	66-119	
1,3-Dichlorobenzene	ug/L	20	18.6	93	73-116	
1,4-Dichlorobenzene	ug/L	20	18.7	94	75-119	
2-Butanone (MEK)	ug/L	20	18.1	90	69-126	
2-Hexanone	ug/L	20	18.7	94	53-118	
4-Methyl-2-pentanone (MIBK)	ug/L	20	18.2	91	68-124	
Acetone	ug/L	20	13.4	67	56-142	
Benzene	ug/L	20	20.8	104	69-123	
Bromodichloromethane	ug/L	20	18.7	93	64-120	
Bromoform	ug/L	20	13.3	66	56-133	
Bromomethane	ug/L	20	21.9	109	19-151	
Carbon disulfide	ug/L	20	19.3	96	53-173	
Carbon tetrachloride	ug/L	20	17.9	90	52-133	
Chlorobenzene	ug/L	20	19.8	99	72-121	
Chloroethane	ug/L	20	17.0	85	53-143	
Chloroform	ug/L	20	20.1	100	63-123	
Chloromethane	ug/L	20	17.6	88	48-139	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	63-123	
cis-1,3-Dichloropropene	ug/L	20	16.7	83	65-121	
Dibromochloromethane	ug/L	20	16.5	83	58-132	
Ethylbenzene	ug/L	20	20.2	101	70-123	
Isopropylbenzene (Cumene)	ug/L	20	20.3	102	66-136	
m&p-Xylene	ug/L	40	41.5	104	71-124	
Methylene Chloride	ug/L	20	20.8	104	55-134	
o-Xylene	ug/L	20	19.6	98	69-118	
Styrene	ug/L	20	20.3	101	66-126	
Tetrachloroethene	ug/L	20	20.0	100	62-131	
Toluene	ug/L	20	20.8	104	73-123	
trans-1,2-Dichloroethene	ug/L	20	19.7	99	61-124	
trans-1,3-Dichloropropene	ug/L	20	16.0	80	70-111	
Trichloroethene	ug/L	20	19.5	97	66-125	

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QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

LABORATORY CONTROL SAMPLE: 889227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichlorofluoromethane	ug/L	20	15.8	79	57-144	
Vinyl chloride	ug/L	20	13.9	70	58-131	
1,2-Dichloroethane-d4 (S)	%			90	84-124	
4-Bromofluorobenzene (S)	%			101	84-113	
Toluene-d8 (S)	%			99	79-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 889336 889337

Parameter	Units	30146516006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	19.1	18.3	95	92	62-130	4	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	16.6	17.0	83	85	74-115	2	
1,1,2-Trichloroethane	ug/L	ND	20	20	17.6	16.6	88	83	73-121	6	
1,1-Dichloroethane	ug/L	ND	20	20	19.3	18.9	96	94	64-125	2	
1,1-Dichloroethene	ug/L	ND	20	20	18.3	18.2	92	91	58-126	1	
1,2-Dichlorobenzene	ug/L	ND	20	20	16.6	16.2	83	81	76-117	2	
1,2-Dichloroethane	ug/L	ND	20	20	17.9	17.1	89	86	66-124	4	
1,2-Dichloropropane	ug/L	ND	20	20	17.6	16.5	88	83	66-119	7	
1,3-Dichlorobenzene	ug/L	ND	20	20	16.6	16.1	83	81	73-116	3	
1,4-Dichlorobenzene	ug/L	ND	20	20	16.7	16.0	84	80	75-119	4	
2-Butanone (MEK)	ug/L	ND	20	20	20.2	17.6	101	88	69-126	14	
2-Hexanone	ug/L	ND	20	20	19.4	17.9	97	90	53-118	8	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	20	19.1	17.4	95	87	68-124	9	
Acetone	ug/L	ND	20	20	41.2	15.5	206	77	56-142	91	M1,R1
Benzene	ug/L	ND	20	20	18.9	18.0	95	90	69-123	5	
Bromodichloromethane	ug/L	ND	20	20	16.3	15.7	82	78	64-120	4	
Bromoform	ug/L	ND	20	20	11.8	11.4	59	57	56-133	4	
Bromomethane	ug/L	ND	20	20	18.3	21.0	92	105	19-151	14	
Carbon disulfide	ug/L	ND	20	20	23.5	22.2	117	111	53-173	6	
Carbon tetrachloride	ug/L	ND	20	20	17.1	16.4	85	82	52-133	4	
Chlorobenzene	ug/L	ND	20	20	18.3	17.2	91	86	72-121	6	
Chloroethane	ug/L	ND	20	20	19.0	18.5	95	92	53-143	3	
Chloroform	ug/L	ND	20	20	18.9	18.3	95	92	63-123	3	
Chloromethane	ug/L	ND	20	20	19.2	20.7	96	103	48-139	7	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.6	18.0	93	90	63-123	3	
cis-1,3-Dichloropropene	ug/L	ND	20	20	15.5	15.2	77	76	65-121	2	
Dibromochloromethane	ug/L	ND	20	20	14.9	14.8	74	74	58-132	1	
Ethylbenzene	ug/L	ND	20	20	18.8	17.2	94	86	70-123	9	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.6	18.0	93	90	66-136	3	
m&p-Xylene	ug/L	ND	40	40	37.5	35.0	94	88	71-124	7	
Methylene Chloride	ug/L	ND	20	20	19.8	19.2	99	96	55-134	3	
o-Xylene	ug/L	ND	20	20	17.5	16.7	88	83	69-118	5	
Styrene	ug/L	ND	20	20	16.5	15.4	83	77	66-126	7	
Tetrachloroethene	ug/L	ND	20	20	19.5	18.7	98	93	62-131	5	
Toluene	ug/L	ND	20	20	18.8	18.2	94	91	73-123	3	

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QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 889336 889337

Parameter	Units	30146516006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.5	97	93	61-124	5	
trans-1,3-Dichloropropene	ug/L	ND	20	20	15.5	14.8	78	74	70-111	5	
Trichloroethene	ug/L	ND	20	20	18.2	17.5	91	87	66-125	4	
Trichlorofluoromethane	ug/L	ND	20	20	17.4	17.9	87	90	57-144	3	
Vinyl chloride	ug/L	ND	20	20	16.0	15.3	80	77	58-131	4	
1,2-Dichloroethane-d4 (S)	%						91	92	84-124		
4-Bromofluorobenzene (S)	%						101	100	84-113		
Toluene-d8 (S)	%						96	91	79-118		

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QUALIFIERS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30146519

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30146519001	**PRE-CARB**	EPA 8260C	MSV/23347		
30146519002	**PRIMARY-EFF**	EPA 8260C	MSV/23347		
30146519003	**POST-CARB**	EPA 8260C	MSV/23347		
30146519004	**TB-01**	EPA 8260C	MSV/23347		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

1839467

Section A Required Client Information:

Company:	NRS/AECOM
Address:	FOSTER PLAZA 6 661 ANDERSEN DR. STE. 400 PITTSBURGH, PA 15220
Email To:	
Phone:	412-503-4700
Fax:	412-503-4701
Requested Due Date/TAT:	STANDARD

Section B Required Project Information:

Report To:	MARK DOWIAK
Copy To:	VALERIE SIBETO
Purchase Order No.:	41570166
Project Name:	ESSEX/HOPE JAMESTOWN
Project Number:	41570166

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

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

Site Location STATE: NY

Section D Required Client Information

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PRE-CARB	WT	G			4.23.15	1030		3				X					X		001
2	PRIMARY-EFF						1035		3				X					X		002
3	POST-CARB						1040		3				X					X		003
4	POST-CARB						1110		3				X					X		
5	POST-CARB						1140		3				X					X		
6	POST-CARB						1210		3				X					X		
7	TB-01	WT	G			4.23.15	—		2				X					X		004
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
COMPOSITE FOUR (4)	[signature] / NRS	4.23.15	1245	[signature]	4.23.15	1245				
POST-CARB SAMPLES IN				[signature] Pace	4/24/15	0935	3.3	Y	N	Y
LAB AND REPORT AS										
POST-CARB COMPOSITE										

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

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VALERIE SIBETO

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 4.23.15

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

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

Sample Condition Upon Receipt

Pace Analytical

Client Name: URS/AECom Project # 30146519

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 8023 3932 6755

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ☑ Bubble Bags ___ None ___ Other _____

Thermometer Used 7 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 3.4 °C Correction Factor: -0.1 °C Final Temp: 3.3 °C

Date and initials of person examining contents: Ann 4/24/15

Temp should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 4/27/15

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

Pace Analytical

Project Number: 30146519

Client Name: URS / AECOM

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL													3									
002																							
003	SL													2									

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 29, 2015

Rachel Vaughan
CH2M
18 Tremont Street
Suite 700
Boston, MA 02108

RE: Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Dear Rachel Vaughan:
Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Penny Westrick for
Timothy Reed
timothy.reed@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Sample: Pre-Carb **Lab ID: 30148056001** Collected: 05/13/15 14:40 Received: 05/14/15 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**26600**	ug/L	1000	100		05/23/15 22:35	67-64-1	
Benzene	**37.9**	ug/L	1.0	1		05/23/15 22:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/23/15 22:10	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/23/15 22:10	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/23/15 22:10	74-83-9	
2-Butanone (MEK)	**83.0**	ug/L	10.0	1		05/23/15 22:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/23/15 22:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/23/15 22:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/23/15 22:10	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/23/15 22:10	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/23/15 22:10	67-66-3	
Chloromethane	**7.4**	ug/L	1.0	1		05/23/15 22:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/23/15 22:10	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 22:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 22:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 22:10	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/23/15 22:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/23/15 22:10	107-06-2	
1,1-Dichloroethene	**38.4**	ug/L	1.0	1		05/23/15 22:10	75-35-4	
cis-1,2-Dichloroethene	**11800**	ug/L	100	100		05/23/15 22:35	156-59-2	
trans-1,2-Dichloroethene	**221**	ug/L	1.0	1		05/23/15 22:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/23/15 22:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 22:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 22:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/23/15 22:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/23/15 22:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/23/15 22:10	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/23/15 22:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/23/15 22:10	108-10-1	
Styrene	ND	ug/L	1.0	1		05/23/15 22:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/23/15 22:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/23/15 22:10	127-18-4	
Toluene	**1.0**	ug/L	1.0	1		05/23/15 22:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/23/15 22:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/23/15 22:10	79-00-5	
Trichloroethene	**4470**	ug/L	100	100		05/23/15 22:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/23/15 22:10	75-69-4	
Vinyl chloride	**2020**	ug/L	100	100		05/23/15 22:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/23/15 22:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/23/15 22:10	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	84-113	1		05/23/15 22:10	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	84-124	1		05/23/15 22:10	17060-07-0	
Toluene-d8 (S)	94	%	79-118	1		05/23/15 22:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Sample: Primary-EFF **Lab ID: 30148056002** Collected: 05/13/15 14:45 Received: 05/14/15 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**38400**	ug/L	5000	500		05/23/15 23:25	67-64-1	
Benzene	ND	ug/L	1.0	1		05/23/15 23:00	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/23/15 23:00	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/23/15 23:00	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/23/15 23:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/23/15 23:00	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/23/15 23:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/23/15 23:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/23/15 23:00	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/23/15 23:00	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/23/15 23:00	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/23/15 23:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/23/15 23:00	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 23:00	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 23:00	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 23:00	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/23/15 23:00	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/23/15 23:00	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/23/15 23:00	75-35-4	
cis-1,2-Dichloroethene	**20.5**	ug/L	1.0	1		05/23/15 23:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/23/15 23:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/23/15 23:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 23:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 23:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/23/15 23:00	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/23/15 23:00	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/23/15 23:00	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/23/15 23:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/23/15 23:00	108-10-1	
Styrene	ND	ug/L	1.0	1		05/23/15 23:00	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/23/15 23:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/23/15 23:00	127-18-4	
Toluene	ND	ug/L	1.0	1		05/23/15 23:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/23/15 23:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/23/15 23:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/23/15 23:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/23/15 23:00	75-69-4	
Vinyl chloride	**1230**	ug/L	500	500		05/23/15 23:25	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/23/15 23:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/23/15 23:00	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	84-113	1		05/23/15 23:00	460-00-4	
1,2-Dichloroethane-d4 (S)	123	%	84-124	1		05/23/15 23:00	17060-07-0	
Toluene-d8 (S)	101	%	79-118	1		05/23/15 23:00	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Sample: Post-Carb **Lab ID: 30148056003** Collected: 05/13/15 14:50 Received: 05/14/15 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**30200**	ug/L	5000	500		05/26/15 17:12	67-64-1	
Benzene	ND	ug/L	1.0	1		05/23/15 21:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/23/15 21:20	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/23/15 21:20	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/23/15 21:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/23/15 21:20	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/23/15 21:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/23/15 21:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/23/15 21:20	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/23/15 21:20	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/23/15 21:20	67-66-3	
Chloromethane	**7.4**	ug/L	1.0	1		05/23/15 21:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/23/15 21:20	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 21:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 21:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 21:20	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/23/15 21:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/23/15 21:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/23/15 21:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/23/15 21:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/23/15 21:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/23/15 21:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 21:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 21:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/23/15 21:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/23/15 21:20	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/23/15 21:20	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/23/15 21:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/23/15 21:20	108-10-1	
Styrene	ND	ug/L	1.0	1		05/23/15 21:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/23/15 21:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/23/15 21:20	127-18-4	
Toluene	ND	ug/L	1.0	1		05/23/15 21:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/23/15 21:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/23/15 21:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/23/15 21:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/23/15 21:20	75-69-4	
Vinyl chloride	**8.5**	ug/L	1.0	1		05/23/15 21:20	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/23/15 21:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/23/15 21:20	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	84-113	1		05/23/15 21:20	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	84-124	1		05/23/15 21:20	17060-07-0	
Toluene-d8 (S)	94	%	79-118	1		05/23/15 21:20	2037-26-5	

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Sample: TB-01 **Lab ID: 30148056006** Collected: 05/13/15 00:01 Received: 05/14/15 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		05/23/15 14:16	67-64-1	
Benzene	ND	ug/L	1.0	1		05/23/15 14:16	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		05/23/15 14:16	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/23/15 14:16	75-25-2	
Bromomethane	ND	ug/L	1.0	1		05/23/15 14:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		05/23/15 14:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		05/23/15 14:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		05/23/15 14:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/23/15 14:16	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/23/15 14:16	75-00-3	
Chloroform	ND	ug/L	1.0	1		05/23/15 14:16	67-66-3	
Chloromethane	**7.3**	ug/L	1.0	1		05/23/15 14:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		05/23/15 14:16	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 14:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 14:16	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/23/15 14:16	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/23/15 14:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/23/15 14:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/23/15 14:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/23/15 14:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/23/15 14:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/23/15 14:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 14:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/23/15 14:16	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		05/23/15 14:16	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		05/23/15 14:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		05/23/15 14:16	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		05/23/15 14:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		05/23/15 14:16	108-10-1	
Styrene	ND	ug/L	1.0	1		05/23/15 14:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/23/15 14:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/23/15 14:16	127-18-4	
Toluene	ND	ug/L	1.0	1		05/23/15 14:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/23/15 14:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/23/15 14:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/23/15 14:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/23/15 14:16	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		05/23/15 14:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		05/23/15 14:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/23/15 14:16	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	84-113	1		05/23/15 14:16	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	84-124	1		05/23/15 14:16	17060-07-0	
Toluene-d8 (S)	92	%	79-118	1		05/23/15 14:16	2037-26-5	

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QUALITY CONTROL DATA

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

QC Batch: MSV/23554 Analysis Method: EPA 8260C
QC Batch Method: EPA 8260C Analysis Description: 8260C MSV
Associated Lab Samples: 30148056001, 30148056002, 30148056003, 30148056006

METHOD BLANK: 897890 Matrix: Water
Associated Lab Samples: 30148056001, 30148056002, 30148056003, 30148056006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	05/23/15 13:51	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/23/15 13:51	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/23/15 13:51	
1,1-Dichloroethane	ug/L	ND	1.0	05/23/15 13:51	
1,1-Dichloroethene	ug/L	ND	1.0	05/23/15 13:51	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/23/15 13:51	
1,2-Dichloroethane	ug/L	ND	1.0	05/23/15 13:51	
1,2-Dichloropropane	ug/L	ND	1.0	05/23/15 13:51	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/23/15 13:51	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/23/15 13:51	
2-Butanone (MEK)	ug/L	ND	10.0	05/23/15 13:51	
2-Hexanone	ug/L	ND	10.0	05/23/15 13:51	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	05/23/15 13:51	
Acetone	ug/L	ND	10.0	05/23/15 13:51	
Benzene	ug/L	ND	1.0	05/23/15 13:51	
Bromodichloromethane	ug/L	ND	1.0	05/23/15 13:51	
Bromoform	ug/L	ND	1.0	05/23/15 13:51	
Bromomethane	ug/L	ND	1.0	05/23/15 13:51	
Carbon disulfide	ug/L	ND	1.0	05/23/15 13:51	
Carbon tetrachloride	ug/L	ND	1.0	05/23/15 13:51	
Chlorobenzene	ug/L	ND	1.0	05/23/15 13:51	
Chloroethane	ug/L	ND	1.0	05/23/15 13:51	
Chloroform	ug/L	ND	1.0	05/23/15 13:51	
Chloromethane	ug/L	ND	1.0	05/23/15 13:51	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/23/15 13:51	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/23/15 13:51	
Dibromochloromethane	ug/L	ND	1.0	05/23/15 13:51	
Ethylbenzene	ug/L	ND	1.0	05/23/15 13:51	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	05/23/15 13:51	
m&p-Xylene	ug/L	ND	2.0	05/23/15 13:51	
Methylene Chloride	ug/L	ND	1.0	05/23/15 13:51	
o-Xylene	ug/L	ND	1.0	05/23/15 13:51	
Styrene	ug/L	ND	1.0	05/23/15 13:51	
Tetrachloroethene	ug/L	ND	1.0	05/23/15 13:51	
Toluene	ug/L	ND	1.0	05/23/15 13:51	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/23/15 13:51	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/23/15 13:51	
Trichloroethene	ug/L	ND	1.0	05/23/15 13:51	
Trichlorofluoromethane	ug/L	ND	1.0	05/23/15 13:51	
Vinyl chloride	ug/L	ND	1.0	05/23/15 13:51	
1,2-Dichloroethane-d4 (S)	%	109	84-124	05/23/15 13:51	

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QUALITY CONTROL DATA

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

METHOD BLANK: 897890 Matrix: Water
Associated Lab Samples: 30148056001, 30148056002, 30148056003, 30148056006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	91	84-113	05/23/15 13:51	
Toluene-d8 (S)	%	90	79-118	05/23/15 13:51	

LABORATORY CONTROL SAMPLE: 897891

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.7	99	62-130	
1,1,2,2-Tetrachloroethane	ug/L	20	17.8	89	74-115	
1,1,2-Trichloroethane	ug/L	20	17.4	87	73-121	
1,1-Dichloroethane	ug/L	20	18.8	94	64-125	
1,1-Dichloroethene	ug/L	20	18.0	90	58-126	
1,2-Dichlorobenzene	ug/L	20	17.7	89	76-117	
1,2-Dichloroethane	ug/L	20	19.9	99	66-124	
1,2-Dichloropropane	ug/L	20	16.2	81	66-119	
1,3-Dichlorobenzene	ug/L	20	17.5	88	73-116	
1,4-Dichlorobenzene	ug/L	20	17.4	87	75-119	
2-Butanone (MEK)	ug/L	20	19.9	99	69-126	
2-Hexanone	ug/L	20	17.4	87	53-118	
4-Methyl-2-pentanone (MIBK)	ug/L	20	17.4	87	68-124	
Acetone	ug/L	20	12.3	61	56-142	
Benzene	ug/L	20	17.8	89	69-123	
Bromodichloromethane	ug/L	20	17.9	90	64-120	
Bromoform	ug/L	20	14.8	74	56-133	
Bromomethane	ug/L	20	22.7	113	19-151	
Carbon disulfide	ug/L	20	19.3	96	53-173	
Carbon tetrachloride	ug/L	20	17.5	87	52-133	
Chlorobenzene	ug/L	20	17.8	89	72-121	
Chloroethane	ug/L	20	19.4	97	53-143	
Chloroform	ug/L	20	20.0	100	63-123	
Chloromethane	ug/L	20	19.2	96	48-139	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	63-123	
cis-1,3-Dichloropropene	ug/L	20	17.7	88	65-121	
Dibromochloromethane	ug/L	20	16.6	83	58-132	
Ethylbenzene	ug/L	20	17.4	87	70-123	
Isopropylbenzene (Cumene)	ug/L	20	17.9	89	66-136	
m&p-Xylene	ug/L	40	35.7	89	71-124	
Methylene Chloride	ug/L	20	19.2	96	55-134	
o-Xylene	ug/L	20	16.8	84	69-118	
Styrene	ug/L	20	17.7	89	66-126	
Tetrachloroethene	ug/L	20	18.4	92	62-131	
Toluene	ug/L	20	17.6	88	73-123	
trans-1,2-Dichloroethene	ug/L	20	19.0	95	61-124	
trans-1,3-Dichloropropene	ug/L	20	17.5	88	70-111	
Trichloroethene	ug/L	20	17.4	87	66-125	

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QUALITY CONTROL DATA

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

LABORATORY CONTROL SAMPLE: 897891

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichlorofluoromethane	ug/L	20	20.3	101	57-144	
Vinyl chloride	ug/L	20	16.6	83	58-131	
1,2-Dichloroethane-d4 (S)	%			101	84-124	
4-Bromofluorobenzene (S)	%			104	84-113	
Toluene-d8 (S)	%			92	79-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 897983 897984

Parameter	Units	30148563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1-Trichloroethane	ug/L	1.0 U	20	20	19.0	20.4	95	102	62-130	7	
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	20	20	8.3	8.3	41	42	74-115	1	M1
1,1,2-Trichloroethane	ug/L	1.0 U	20	20	8.9	9.0	45	45	73-121	1	M1
1,1-Dichloroethane	ug/L	1.0 U	20	20	15.6	16.2	78	81	64-125	4	
1,1-Dichloroethene	ug/L	1.0 U	20	20	17.3	19.0	86	95	58-126	9	
1,2-Dichlorobenzene	ug/L	1.0 U	20	20	13.2	14.0	66	70	76-117	6	M1
1,2-Dichloroethane	ug/L	1.0 U	20	20	9.9	9.8	50	49	66-124	1	M1
1,2-Dichloropropane	ug/L	1.0 U	20	20	12.3	12.3	62	61	66-119	0	M1
1,3-Dichlorobenzene	ug/L	1.0 U	20	20	15.4	16.4	77	82	73-116	6	
1,4-Dichlorobenzene	ug/L	1.0 U	20	20	14.7	15.9	74	79	75-119	7	M1
2-Butanone (MEK)	ug/L	10.0 U	20	20	12.2	12.7	61	63	69-126	4	M1
2-Hexanone	ug/L	10.0 U	20	20	8.9J	9J	44	45	53-118		M1
4-Methyl-2-pentanone (MIBK)	ug/L	10.0 U	20	20	7.3J	7.5J	36	38	68-124		M1
Acetone	ug/L	10.0 U	20	20	2.9J	7.1J	14	35	56-142		M1
Benzene	ug/L	1.0 U	20	20	16.6	18.0	83	90	69-123	8	
Bromodichloromethane	ug/L	1.0 U	20	20	12.0	12.1	60	61	64-120	1	M1
Bromoform	ug/L	1.0 U	20	20	6.6	7.0	33	35	56-133	6	M1
Bromomethane	ug/L	1.0 U	20	20	15.3	18.8	76	94	19-151	21	
Carbon disulfide	ug/L	1.0 U	20	20	16.3	18.6	81	93	53-173	13	
Carbon tetrachloride	ug/L	1.0 U	20	20	18.0	19.6	90	98	52-133	8	
Chlorobenzene	ug/L	1.0 U	20	20	14.7	15.7	74	78	72-121	6	
Chloroethane	ug/L	1.0 U	20	20	19.2	21.3	96	106	53-143	10	
Chloroform	ug/L	1.0 U	20	20	15.2	15.8	76	79	63-123	4	
Chloromethane	ug/L	1.0 U	20	20	16.3	17.9	82	89	48-139	9	
cis-1,2-Dichloroethene	ug/L	1.0 U	20	20	14.1	14.4	70	72	63-123	2	
cis-1,3-Dichloropropene	ug/L	1.0 U	20	20	10.3	10.4	51	52	65-121	1	M1
Dibromochloromethane	ug/L	1.0 U	20	20	9.0	9.3	45	46	58-132	3	M1
Ethylbenzene	ug/L	1.0 U	20	20	16.7	18.0	84	90	70-123	8	
Isopropylbenzene (Cumene)	ug/L	1.0 U	20	20	19.0	21.1	95	105	66-136	10	
m&p-Xylene	ug/L	2.0 U	40	40	33.7	35.5	84	89	71-124	5	
Methylene Chloride	ug/L	1.0 U	20	20	12.8	12.8	64	64	55-134	0	
o-Xylene	ug/L	1.0 U	20	20	15.2	15.5	76	77	69-118	2	
Styrene	ug/L	1.0 U	20	20	13.9	14.5	70	73	66-126	4	
Tetrachloroethene	ug/L	1.0 U	20	20	22.3	24.5	111	123	62-131	9	
Toluene	ug/L	1.0 U	20	20	16.7	17.5	83	88	73-123	5	

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QUALITY CONTROL DATA

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 897983 897984

Parameter	Units	30148563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
trans-1,2-Dichloroethene	ug/L	1.0 U	20	20	16.8	17.4	84	87	61-124	4	
trans-1,3-Dichloropropene	ug/L	1.0 U	20	20	8.7	8.8	43	44	70-111	1	M1
Trichloroethene	ug/L	1.0 U	20	20	18.1	20.0	90	100	66-125	10	
Trichlorofluoromethane	ug/L	1.0 U	20	20	19.3	23.1	97	116	57-144	18	
Vinyl chloride	ug/L	1.0 U	20	20	14.0	16.7	70	84	58-131	17	
1,2-Dichloroethane-d4 (S)	%						63	56	84-124		S0
4-Bromofluorobenzene (S)	%						109	107	84-113		
Toluene-d8 (S)	%						104	108	79-118		

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QUALIFIERS

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S0	Surrogate recovery outside laboratory control limits.

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Essex/Hope Jamestown
Pace Project No.: 30148056

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30148056001	**Pre-Carb**	EPA 8260C	MSV/23554		
30148056002	**Primary-EFF**	EPA 8260C	MSV/23554		
30148056003	**Post-Carb**	EPA 8260C	MSV/23554		
30148056006	**TB-01**	EPA 8260C	MSV/23554		

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Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

30148058

Page: 1 of 1

1515763

Section A Required Client Information:

Company: CH2M
Address: 18 Tremont St. Suite 700
Boston, MA 02108
Email To:
Phone: 617-626-7013 Fax: 810-229-5071
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Kyle Block
Copy To: Rachel VAUGHAN
Travis Pendry
Purchase Order No.:
Project Name: Essex/Hope Jamestown
Project Number: 656686

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

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

Site Location STATE: NY

Section D Required Client Information

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Analysis Test: VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Pre-carb	WT	G			5-13-15	1440		3				X						X		001
2	Primary-Eff						1445														002
3	Post-carb						1450														003
4	Post-carb						1520														004
5	Post-carb						1550														~~005~~ 007
6	Post-carb						1620														~~006~~ 005
7	TB-01						—		2				~								~~007~~ 006
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Composite four (4)	Ti Pendry	5-13-15	1705	Alyna R. Muchmay / Pace	5/14/15	0855	4.8	Y	Y	Y
Post-carb samples in										
Pb and report as										
Post-carb Composite										

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Travis Pendry
SIGNATURE of SAMPLER: Ti Pendry
DATE Signed (MM/DD/YY): 5-13-15

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

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

MJS

Sample Condition Upon Receipt

Pace Analytical

Client Name: CH2M

Project # 30148056

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 780150821144

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ___ None ___ Other _____

Thermometer Used 10 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 5.1 °C Correction Factor: -0.3 °C Final Temp: 4.8 °C

Date and initials of person examining contents: ARM 5/14/15

Temp should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 5-15-15

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

Pace Analytical

Project Number: 30148056

Client Name: CH2M

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT													3										
002	WT													3										
003	WT													12										
004	WT													2										

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

TestAmerica Job ID: 460-96403-1
Client Project/Site: Essex/Hope Jamestown 656686

For:
CH2M Hill Constructors, Inc.
18 Tremont St
Suite 700
Boston, Massachusetts 02108

Attn: Mr. Kyle Block

Shalini Isaac

Authorized for release by:
6/24/2015 4:33:46 PM
Shalini Isaac, Project Management Assistant II
shalini.isaac@testamericainc.com

Designee for

Kristin DeGraw, Project Manager II
(732)593-2555
kristin.degraw@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Definitions/Glossary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

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

Job ID: 460-96403-1

Laboratory: TestAmerica Edison

Narrative

CASE NARRATIVE

Client: CH2M Hill Constructors, Inc.

Project: Essex/Hope Jamestown 656686

Report Number: 460-96403-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 6/12/2015 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS

Samples Pre-Carb (460-96403-1), Primary-EFF (460-96403-2) and Post-Carb composite (460-96403-7) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 06/23/2015 and 06/24/2015.

The continuing calibration verification (CCV) analyzed in batch 460-306505 was outside the method criteria for the following analyte: Chloromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Trichloroethene failed the recovery criteria low for the MS of sample 460-96764-1 in batch 460-306603. The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples Pre-Carb (460-96403-1)[5X], Pre-Carb (460-96403-1)[50X], Primary-EFF (460-96403-2)[50X] and Post-Carb composite (460-96403-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted to bring the concentration of target analytes within the calibration range: Pre-Carb (460-96403-1). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the Volatile organics analysis.

Job ID: 460-96403-1 (Continued)

Laboratory: TestAmerica Edison (Continued)

All other quality control parameters were within the acceptance limits.

Detection Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Client Sample ID: Pre-Carb — Lab Sample ID: 460-96403-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	34		5.0	1.7	ug/L	5		8260C	Total/NA
1,2-Dichloroethene, trans-	28		5.0	0.90	ug/L	5		8260C	Total/NA
2-Butanone (MEK)	230		50	11	ug/L	5		8260C	Total/NA
Benzene	50		5.0	0.45	ug/L	5		8260C	Total/NA
Toluene	1.3	J	5.0	1.3	ug/L	5		8260C	Total/NA
Vinyl chloride	2000		5.0	0.30	ug/L	5		8260C	Total/NA
1,2-Dichloroethene, cis- - DL	11000	D	50	13	ug/L	50		8260C	Total/NA
Acetone - DL	46000	D	500	54	ug/L	50		8260C	Total/NA
Trichloroethene - DL	9300	D	50	11	ug/L	50		8260C	Total/NA

Client Sample ID: Primary-EFF — Lab Sample ID: 460-96403-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.8		1.0	0.34	ug/L	1		8260C	Total/NA
1,2-Dichloroethene, trans-	1.3		1.0	0.18	ug/L	1		8260C	Total/NA
2-Butanone (MEK)	77		10	2.2	ug/L	1		8260C	Total/NA
Benzene	0.34	J	1.0	0.090	ug/L	1		8260C	Total/NA
Trichloroethene	44		1.0	0.22	ug/L	1		8260C	Total/NA
1,2-Dichloroethene, cis- - DL	950	D	50	13	ug/L	50		8260C	Total/NA
Acetone - DL	42000	D	500	54	ug/L	50		8260C	Total/NA
Vinyl chloride - DL	1900	D	50	3.0	ug/L	50		8260C	Total/NA

Client Sample ID: Post-Carb composite — Lab Sample ID: 460-96403-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethene, cis-	0.30	J	1.0	0.26	ug/L	1		8260C	Total/NA
Vinyl chloride	150		1.0	0.060	ug/L	1		8260C	Total/NA
Acetone - DL	8300	D	100	11	ug/L	10		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Pre-Carb

Date Collected: 06/11/15 12:15
Date Received: 06/12/15 10:00

Lab Sample ID: 460-96403-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.4	U	5.0	1.4	ug/L			06/23/15 21:59	5
1,1,2,2-Tetrachloroethane	0.95	U	5.0	0.95	ug/L			06/23/15 21:59	5
1,1,2-Trichloroethane	0.40	U	5.0	0.40	ug/L			06/23/15 21:59	5
1,1-Dichloroethane	1.2	U	5.0	1.2	ug/L			06/23/15 21:59	5
1,1-Dichloroethene	**34**		5.0	1.7	ug/L			06/23/15 21:59	5
1,2-Dichlorobenzene	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
1,2-Dichloroethane	1.3	U	5.0	1.3	ug/L			06/23/15 21:59	5
1,2-Dichloroethene, trans-	**28**		5.0	0.90	ug/L			06/23/15 21:59	5
1,2-Dichloropropane	0.90	U	5.0	0.90	ug/L			06/23/15 21:59	5
1,3-Dichlorobenzene	1.7	U	25	1.7	ug/L			06/23/15 21:59	5
1,3-Dichloropropene, cis-	0.80	U	5.0	0.80	ug/L			06/23/15 21:59	5
1,3-Dichloropropene, trans-	0.95	U	5.0	0.95	ug/L			06/23/15 21:59	5
1,4-Dichlorobenzene	1.7	U	5.0	1.7	ug/L			06/23/15 21:59	5
2-Butanone (MEK)	**230**		50	11	ug/L			06/23/15 21:59	5
2-Hexanone	3.6	U	50	3.6	ug/L			06/23/15 21:59	5
4-Methyl-2-pentanone (MIBK)	3.2	U	50	3.2	ug/L			06/23/15 21:59	5
Benzene	**50**		5.0	0.45	ug/L			06/23/15 21:59	5
Bromochloromethane	1.5	U	5.0	1.5	ug/L			06/23/15 21:59	5
Bromodichloromethane	0.75	U	5.0	0.75	ug/L			06/23/15 21:59	5
Bromoform	0.90	U	5.0	0.90	ug/L			06/23/15 21:59	5
Bromomethane	0.90	U	5.0	0.90	ug/L			06/23/15 21:59	5
Carbon disulfide	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
Carbon tetrachloride	1.7	U	5.0	1.7	ug/L			06/23/15 21:59	5
Chlorobenzene	1.2	U	5.0	1.2	ug/L			06/23/15 21:59	5
Chloroethane	1.9	U	5.0	1.9	ug/L			06/23/15 21:59	5
Chloroform	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
Chloromethane	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
Dibromochloromethane	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
Ethylbenzene	1.5	U	5.0	1.5	ug/L			06/23/15 21:59	5
Isopropylbenzene	1.6	U	5.0	1.6	ug/L			06/23/15 21:59	5
Methylene Chloride	1.1	U	5.0	1.1	ug/L			06/23/15 21:59	5
m-Xylene & p-Xylene	1.4	U	50	1.4	ug/L			06/23/15 21:59	5
o-Xylene	1.6	U	5.0	1.6	ug/L			06/23/15 21:59	5
Styrene	0.85	U	5.0	0.85	ug/L			06/23/15 21:59	5
Tetrachloroethene	0.60	U	5.0	0.60	ug/L			06/23/15 21:59	5
Toluene	**1.3**	**J**	5.0	1.3	ug/L			06/23/15 21:59	5
Trichlorofluoromethane	0.75	U	5.0	0.75	ug/L			06/23/15 21:59	5
Vinyl chloride	**2000**		5.0	0.30	ug/L			06/23/15 21:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*06/23/15 21:59*	*5*
4-Bromofluorobenzene	*108*		*64 - 135*		*06/23/15 21:59*	*5*
Dibromofluoromethane (Surr)	*102*		*72 - 137*		*06/23/15 21:59*	*5*
Toluene-d8 (Surr)	*97*		*70 - 130*		*06/23/15 21:59*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethene, cis-	**11000**	**D**	50	13	ug/L			06/23/15 21:09	50
Acetone	**46000**	**D**	500	54	ug/L			06/23/15 21:09	50
Trichloroethene	**9300**	**D**	50	11	ug/L			06/23/15 21:09	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*99*	*D*	*70 - 130*		*06/23/15 21:09*	*50*
4-Bromofluorobenzene	*106*	*D*	*64 - 135*		*06/23/15 21:09*	*50*
Dibromofluoromethane (Surr)	*102*	*D*	*72 - 137*		*06/23/15 21:09*	*50*
Toluene-d8 (Surr)	*97*	*D*	*70 - 130*		*06/23/15 21:09*	*50*

Client Sample ID: Primary-EFF

Date Collected: 06/11/15 12:20
Date Received: 06/12/15 10:00

Lab Sample ID: 460-96403-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			06/23/15 22:24	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			06/23/15 22:24	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			06/23/15 22:24	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			06/23/15 22:24	1
1,1-Dichloroethene	**1.8**		1.0	0.34	ug/L			06/23/15 22:24	1
1,2-Dichlorobenzene	0.22	U	1.0	0.22	ug/L			06/23/15 22:24	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			06/23/15 22:24	1
1,2-Dichloroethene, trans-	**1.3**		1.0	0.18	ug/L			06/23/15 22:24	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			06/23/15 22:24	1
1,3-Dichlorobenzene	0.33	U	5.0	0.33	ug/L			06/23/15 22:24	1
1,3-Dichloropropene, cis-	0.16	U	1.0	0.16	ug/L			06/23/15 22:24	1
1,3-Dichloropropene, trans-	0.19	U	1.0	0.19	ug/L			06/23/15 22:24	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			06/23/15 22:24	1
2-Butanone (MEK)	**77**		10	2.2	ug/L			06/23/15 22:24	1
2-Hexanone	0.72	U	10	0.72	ug/L			06/23/15 22:24	1
4-Methyl-2-pentanone (MIBK)	0.63	U	10	0.63	ug/L			06/23/15 22:24	1
Benzene	**0.34**	**J**	1.0	0.090	ug/L			06/23/15 22:24	1
Bromochloromethane	0.30	U	1.0	0.30	ug/L			06/23/15 22:24	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			06/23/15 22:24	1
Bromoform	0.18	U	1.0	0.18	ug/L			06/23/15 22:24	1
Bromomethane	0.18	U	1.0	0.18	ug/L			06/23/15 22:24	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			06/23/15 22:24	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			06/23/15 22:24	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			06/23/15 22:24	1
Chloroethane	0.37	U	1.0	0.37	ug/L			06/23/15 22:24	1
Chloroform	0.22	U	1.0	0.22	ug/L			06/23/15 22:24	1
Chloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 22:24	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 22:24	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			06/23/15 22:24	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			06/23/15 22:24	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			06/23/15 22:24	1
m-Xylene & p-Xylene	0.28	U	10	0.28	ug/L			06/23/15 22:24	1
o-Xylene	0.32	U	1.0	0.32	ug/L			06/23/15 22:24	1
Styrene	0.17	U	1.0	0.17	ug/L			06/23/15 22:24	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			06/23/15 22:24	1
Toluene	0.25	U	1.0	0.25	ug/L			06/23/15 22:24	1
Trichloroethene	**44**		1.0	0.22	ug/L			06/23/15 22:24	1
Trichlorofluoromethane	0.15	U	1.0	0.15	ug/L			06/23/15 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*06/23/15 22:24*	*1*
4-Bromofluorobenzene	*108*		*64 - 135*		*06/23/15 22:24*	*1*
Dibromofluoromethane (Surr)	*104*		*72 - 137*		*06/23/15 22:24*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*06/23/15 22:24*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethene, cis-	**950**	**D**	50	13	ug/L			06/24/15 11:05	50
Acetone	**42000**	**D**	500	54	ug/L			06/24/15 11:05	50
Vinyl chloride	**1900**	**D**	50	3.0	ug/L			06/24/15 11:05	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*	*D*	*70 - 130*		*06/24/15 11:05*	*50*
4-Bromofluorobenzene	*108*	*D*	*64 - 135*		*06/24/15 11:05*	*50*
Dibromofluoromethane (Surr)	*103*	*D*	*72 - 137*		*06/24/15 11:05*	*50*
Toluene-d8 (Surr)	*97*	*D*	*70 - 130*		*06/24/15 11:05*	*50*

Client Sample ID: Post-Carb composite

Lab Sample ID: 460-96403-7

Date Collected: 06/11/15 13:55

Matrix: Water

Date Received: 06/12/15 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			06/23/15 20:44	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			06/23/15 20:44	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			06/23/15 20:44	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			06/23/15 20:44	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			06/23/15 20:44	1
1,2-Dichlorobenzene	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			06/23/15 20:44	1
1,2-Dichloroethene, cis-	**0.30**	**J**	1.0	0.26	ug/L			06/23/15 20:44	1
1,2-Dichloroethene, trans-	0.18	U	1.0	0.18	ug/L			06/23/15 20:44	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			06/23/15 20:44	1
1,3-Dichlorobenzene	0.33	U	5.0	0.33	ug/L			06/23/15 20:44	1
1,3-Dichloropropene, cis-	0.16	U	1.0	0.16	ug/L			06/23/15 20:44	1
1,3-Dichloropropene, trans-	0.19	U	1.0	0.19	ug/L			06/23/15 20:44	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			06/23/15 20:44	1
2-Butanone (MEK)	2.2	U	10	2.2	ug/L			06/23/15 20:44	1
2-Hexanone	0.72	U	10	0.72	ug/L			06/23/15 20:44	1
4-Methyl-2-pentanone (MIBK)	0.63	U	10	0.63	ug/L			06/23/15 20:44	1
Benzene	0.090	U	1.0	0.090	ug/L			06/23/15 20:44	1
Bromochloromethane	0.30	U	1.0	0.30	ug/L			06/23/15 20:44	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			06/23/15 20:44	1
Bromoform	0.18	U	1.0	0.18	ug/L			06/23/15 20:44	1
Bromomethane	0.18	U	1.0	0.18	ug/L			06/23/15 20:44	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			06/23/15 20:44	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			06/23/15 20:44	1
Chloroethane	0.37	U	1.0	0.37	ug/L			06/23/15 20:44	1
Chloroform	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1
Chloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			06/23/15 20:44	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			06/23/15 20:44	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			06/23/15 20:44	1
m-Xylene & p-Xylene	0.28	U	10	0.28	ug/L			06/23/15 20:44	1
o-Xylene	0.32	U	1.0	0.32	ug/L			06/23/15 20:44	1
Styrene	0.17	U	1.0	0.17	ug/L			06/23/15 20:44	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			06/23/15 20:44	1
Toluene	0.25	U	1.0	0.25	ug/L			06/23/15 20:44	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			06/23/15 20:44	1

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Client Sample ID: Post-Carb composite
Date Collected: 06/11/15 13:55
Date Received: 06/12/15 10:00

Lab Sample ID: 460-96403-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	0.15	U	1.0	0.15	ug/L			06/23/15 20:44	1
Vinyl chloride	**150**		1.0	0.060	ug/L			06/23/15 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*06/23/15 20:44*	*1*
4-Bromofluorobenzene	*105*		*64 - 135*		*06/23/15 20:44*	*1*
Dibromofluoromethane (Surr)	*104*		*72 - 137*		*06/23/15 20:44*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*06/23/15 20:44*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8300**	**D**	100	11	ug/L			06/24/15 10:40	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*	*D*	*70 - 130*		*06/24/15 10:40*	*10*
4-Bromofluorobenzene	*107*	*D*	*64 - 135*		*06/24/15 10:40*	*10*
Dibromofluoromethane (Surr)	*103*	*D*	*72 - 137*		*06/24/15 10:40*	*10*
Toluene-d8 (Surr)	*97*	*D*	*70 - 130*		*06/24/15 10:40*	*10*

Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(64-135)	(72-137)	(70-130)
460-96403-1	Pre-Carb	99	108	102	97
460-96403-1 - DL	Pre-Carb	99 D	106 D	102 D	97 D
460-96403-2	Primary-EFF	102	108	104	97
460-96403-2 - DL	Primary-EFF	99 D	108 D	103 D	97 D
460-96403-7	Post-Carb composite	99	105	104	97
460-96403-7 - DL	Post-Carb composite	100 D	107 D	103 D	97 D
460-96403-7 MS	Post-Carb composite	97	106	101	96
460-96403-7 MSD	Post-Carb composite	99	107	102	98
460-96764-A-1 MS	Matrix Spike	98	107	102	96
460-96764-A-1 MSD	Matrix Spike Duplicate	99	107	103	96
LCS 460-306505/3	Lab Control Sample	98	105	101	97
LCS 460-306603/4	Lab Control Sample	104	111	108	101
MB 460-306505/7	Method Blank	101	107	103	97
MB 460-306603/7	Method Blank	98	110	102	96

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-306505/7
Matrix: Water
Analysis Batch: 306505

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			06/23/15 20:18	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			06/23/15 20:18	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			06/23/15 20:18	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			06/23/15 20:18	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			06/23/15 20:18	1
1,2-Dichlorobenzene	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			06/23/15 20:18	1
1,2-Dichloroethene, cis-	0.26	U	1.0	0.26	ug/L			06/23/15 20:18	1
1,2-Dichloroethene, trans-	0.18	U	1.0	0.18	ug/L			06/23/15 20:18	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			06/23/15 20:18	1
1,3-Dichlorobenzene	0.33	U	5.0	0.33	ug/L			06/23/15 20:18	1
1,3-Dichloropropene, cis-	0.16	U	1.0	0.16	ug/L			06/23/15 20:18	1
1,3-Dichloropropene, trans-	0.19	U	1.0	0.19	ug/L			06/23/15 20:18	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			06/23/15 20:18	1
2-Butanone (MEK)	2.2	U	10	2.2	ug/L			06/23/15 20:18	1
2-Hexanone	0.72	U	10	0.72	ug/L			06/23/15 20:18	1
4-Methyl-2-pentanone (MIBK)	0.63	U	10	0.63	ug/L			06/23/15 20:18	1
Acetone	1.1	U	10	1.1	ug/L			06/23/15 20:18	1
Benzene	0.090	U	1.0	0.090	ug/L			06/23/15 20:18	1
Bromochloromethane	0.30	U	1.0	0.30	ug/L			06/23/15 20:18	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			06/23/15 20:18	1
Bromoform	0.18	U	1.0	0.18	ug/L			06/23/15 20:18	1
Bromomethane	0.18	U	1.0	0.18	ug/L			06/23/15 20:18	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			06/23/15 20:18	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			06/23/15 20:18	1
Chloroethane	0.37	U	1.0	0.37	ug/L			06/23/15 20:18	1
Chloroform	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
Chloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			06/23/15 20:18	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			06/23/15 20:18	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			06/23/15 20:18	1
m-Xylene & p-Xylene	0.28	U	10	0.28	ug/L			06/23/15 20:18	1
o-Xylene	0.32	U	1.0	0.32	ug/L			06/23/15 20:18	1
Styrene	0.17	U	1.0	0.17	ug/L			06/23/15 20:18	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			06/23/15 20:18	1
Toluene	0.25	U	1.0	0.25	ug/L			06/23/15 20:18	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			06/23/15 20:18	1
Trichlorofluoromethane	0.15	U	1.0	0.15	ug/L			06/23/15 20:18	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			06/23/15 20:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*06/23/15 20:18*	*1*
4-Bromofluorobenzene	*107*		*64 - 135*		*06/23/15 20:18*	*1*
Dibromofluoromethane (Surr)	*103*		*72 - 137*		*06/23/15 20:18*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*06/23/15 20:18*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 460-306505/3
Matrix: Water
Analysis Batch: 306505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	19.0		ug/L		95	73 - 134
1,1,2,2-Tetrachloroethane	20.0	19.2		ug/L		96	55 - 133
1,1,2-Trichloroethane	20.0	18.3		ug/L		92	68 - 121
1,1-Dichloroethane	20.0	19.6		ug/L		98	75 - 126
1,1-Dichloroethene	20.0	20.5		ug/L		103	71 - 123
1,2-Dichlorobenzene	20.0	19.2		ug/L		96	81 - 120
1,2-Dichloroethane	20.0	19.5		ug/L		97	75 - 127
1,2-Dichloroethene, cis-	20.0	20.3		ug/L		102	78 - 121
1,2-Dichloroethene, trans-	20.0	19.2		ug/L		96	79 - 120
1,2-Dichloropropane	20.0	19.9		ug/L		100	70 - 120
1,3-Dichlorobenzene	20.0	18.4		ug/L		92	75 - 120
1,3-Dichloropropene, cis-	20.0	19.0		ug/L		95	71 - 120
1,3-Dichloropropene, trans-	20.0	19.1		ug/L		95	71 - 123
1,4-Dichlorobenzene	20.0	18.5		ug/L		93	75 - 120
2-Butanone (MEK)	100	94.4		ug/L		94	52 - 140
2-Hexanone	100	88.4		ug/L		88	49 - 131
4-Methyl-2-pentanone (MIBK)	100	91.6		ug/L		92	56 - 132
Acetone	100	90.5		ug/L		90	26 - 150
Benzene	20.0	18.7		ug/L		93	69 - 125
Bromochloromethane	20.0	20.6		ug/L		103	70 - 134
Bromodichloromethane	20.0	18.9		ug/L		94	72 - 123
Bromoform	20.0	18.4		ug/L		92	50 - 134
Bromomethane	20.0	16.1		ug/L		81	27 - 150
Carbon disulfide	20.0	19.2		ug/L		96	61 - 126
Carbon tetrachloride	20.0	19.4		ug/L		97	58 - 150
Chlorobenzene	20.0	19.5		ug/L		98	77 - 120
Chloroethane	20.0	15.6		ug/L		78	58 - 145
Chloroform	20.0	19.6		ug/L		98	81 - 122
Chloromethane	20.0	15.4		ug/L		77	43 - 145
Dibromochloromethane	20.0	18.6		ug/L		93	63 - 131
Ethylbenzene	20.0	19.2		ug/L		96	74 - 120
Isopropylbenzene	20.0	19.6		ug/L		98	74 - 127
Methylene Chloride	20.0	19.6		ug/L		98	76 - 123
m-Xylene & p-Xylene	20.0	19.2		ug/L		96	78 - 119
o-Xylene	20.0	19.0		ug/L		95	79 - 120
Styrene	20.0	19.3		ug/L		96	76 - 120
Tetrachloroethene	20.0	20.5		ug/L		102	70 - 136
Toluene	20.0	18.9		ug/L		94	78 - 120
Trichloroethene	20.0	19.9		ug/L		99	74 - 120
Trichlorofluoromethane	20.0	20.9		ug/L		104	65 - 142
Vinyl chloride	20.0	18.0		ug/L		90	56 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene	*105*		*64 - 135*
Dibromofluoromethane (Surr)	*101*		*72 - 137*
Toluene-d8 (Surr)	*97*		*70 - 130*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 460-96403-7 MS
Matrix: Water
Analysis Batch: 306505

Client Sample ID: Post-Carb composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.28	U	200	184		ug/L		92	73 - 134
1,1,2,2-Tetrachloroethane	0.19	U	200	176		ug/L		88	55 - 133
1,1,2-Trichloroethane	0.080	U	200	179		ug/L		89	68 - 121
1,1-Dichloroethane	0.24	U	200	191		ug/L		96	75 - 126
1,1-Dichloroethene	0.34	U	200	196		ug/L		98	71 - 123
1,2-Dichlorobenzene	0.22	U	200	184		ug/L		92	81 - 120
1,2-Dichloroethane	0.25	U	200	185		ug/L		93	75 - 127
1,2-Dichloroethene, cis-	0.30	J	200	206		ug/L		103	78 - 121
1,2-Dichloroethene, trans-	0.18	U	200	184		ug/L		92	79 - 120
1,2-Dichloropropane	0.18	U	200	195		ug/L		97	70 - 120
1,3-Dichlorobenzene	0.33	U	200	179		ug/L		89	75 - 120
1,3-Dichloropropene, cis-	0.16	U	200	180		ug/L		90	71 - 120
1,3-Dichloropropene, trans-	0.19	U	200	180		ug/L		90	71 - 123
1,4-Dichlorobenzene	0.33	U	200	177		ug/L		89	75 - 120
2-Butanone (MEK)	2.2	U	1000	933		ug/L		93	52 - 140
2-Hexanone	0.72	U	1000	887		ug/L		89	49 - 131
4-Methyl-2-pentanone (MIBK)	0.63	U	1000	941		ug/L		94	56 - 132
Acetone	8600	E	1000	9640	4	ug/L		100	26 - 150
Benzene	0.090	U	200	181		ug/L		90	69 - 125
Bromochloromethane	0.30	U	200	195		ug/L		98	70 - 134
Bromodichloromethane	0.15	U	200	179		ug/L		90	72 - 123
Bromoform	0.18	U	200	174		ug/L		87	50 - 134
Bromomethane	0.18	U	200	161		ug/L		80	27 - 150
Carbon disulfide	0.22	U	200	186		ug/L		93	61 - 126
Carbon tetrachloride	0.33	U	200	191		ug/L		95	58 - 150
Chlorobenzene	0.24	U	200	188		ug/L		94	77 - 120
Chloroethane	0.37	U	200	273		ug/L		136	58 - 145
Chloroform	0.22	U	200	185		ug/L		93	81 - 122
Chloromethane	0.22	U	200	162		ug/L		81	43 - 145
Dibromochloromethane	0.22	U	200	175		ug/L		88	63 - 131
Ethylbenzene	0.30	U	200	188		ug/L		94	74 - 120
Isopropylbenzene	0.32	U	200	192		ug/L		96	74 - 127
Methylene Chloride	0.21	U	200	185		ug/L		93	76 - 123
m-Xylene & p-Xylene	0.28	U	200	184		ug/L		92	78 - 119
o-Xylene	0.32	U	200	183		ug/L		92	79 - 120
Styrene	0.17	U	200	185		ug/L		92	76 - 120
Tetrachloroethene	0.12	U	200	200		ug/L		100	70 - 136
Toluene	0.25	U	200	184		ug/L		92	78 - 120
Trichloroethene	0.22	U	200	204		ug/L		102	74 - 120
Trichlorofluoromethane	0.15	U	200	192		ug/L		96	65 - 142
Vinyl chloride	150		200	313		ug/L		81	56 - 137

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene	*106*		*64 - 135*
Dibromofluoromethane (Surr)	*101*		*72 - 137*
Toluene-d8 (Surr)	*96*		*70 - 130*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 460-96403-7 MSD
Matrix: Water
Analysis Batch: 306505

Client Sample ID: Post-Carb composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.28	U	200	181		ug/L		91	73 - 134	1	30
1,1,2,2-Tetrachloroethane	0.19	U	200	174		ug/L		87	55 - 133	1	30
1,1,2-Trichloroethane	0.080	U	200	178		ug/L		89	68 - 121	0	30
1,1-Dichloroethane	0.24	U	200	190		ug/L		95	75 - 126	1	30
1,1-Dichloroethene	0.34	U	200	193		ug/L		97	71 - 123	1	30
1,2-Dichlorobenzene	0.22	U	200	184		ug/L		92	81 - 120	0	30
1,2-Dichloroethane	0.25	U	200	183		ug/L		91	75 - 127	1	30
1,2-Dichloroethene, cis-	0.30	J	200	196		ug/L		98	78 - 121	5	30
1,2-Dichloroethene, trans-	0.18	U	200	180		ug/L		90	79 - 120	2	30
1,2-Dichloropropane	0.18	U	200	191		ug/L		95	70 - 120	2	30
1,3-Dichlorobenzene	0.33	U	200	180		ug/L		90	75 - 120	1	30
1,3-Dichloropropene, cis-	0.16	U	200	176		ug/L		88	71 - 120	2	30
1,3-Dichloropropene, trans-	0.19	U	200	175		ug/L		87	71 - 123	3	30
1,4-Dichlorobenzene	0.33	U	200	178		ug/L		89	75 - 120	0	30
2-Butanone (MEK)	2.2	U	1000	924		ug/L		92	52 - 140	1	30
2-Hexanone	0.72	U	1000	876		ug/L		88	49 - 131	1	30
4-Methyl-2-pentanone (MIBK)	0.63	U	1000	934		ug/L		93	56 - 132	1	30
Acetone	8600	E	1000	9320	4	ug/L		68	26 - 150	3	30
Benzene	0.090	U	200	178		ug/L		89	69 - 125	1	30
Bromochloromethane	0.30	U	200	194		ug/L		97	70 - 134	0	30
Bromodichloromethane	0.15	U	200	181		ug/L		90	72 - 123	1	30
Bromoform	0.18	U	200	168		ug/L		84	50 - 134	3	30
Bromomethane	0.18	U	200	175		ug/L		88	27 - 150	9	30
Carbon disulfide	0.22	U	200	184		ug/L		92	61 - 126	1	30
Carbon tetrachloride	0.33	U	200	185		ug/L		92	58 - 150	3	30
Chlorobenzene	0.24	U	200	185		ug/L		93	77 - 120	2	30
Chloroethane	0.37	U	200	268		ug/L		134	58 - 145	2	30
Chloroform	0.22	U	200	184		ug/L		92	81 - 122	1	30
Chloromethane	0.22	U	200	160		ug/L		80	43 - 145	2	30
Dibromochloromethane	0.22	U	200	175		ug/L		87	63 - 131	0	30
Ethylbenzene	0.30	U	200	186		ug/L		93	74 - 120	1	30
Isopropylbenzene	0.32	U	200	189		ug/L		95	74 - 127	1	30
Methylene Chloride	0.21	U	200	184		ug/L		92	76 - 123	1	30
m-Xylene & p-Xylene	0.28	U	200	185		ug/L		92	78 - 119	0	30
o-Xylene	0.32	U	200	183		ug/L		92	79 - 120	0	30
Styrene	0.17	U	200	184		ug/L		92	76 - 120	0	30
Tetrachloroethene	0.12	U	200	201		ug/L		101	70 - 136	1	30
Toluene	0.25	U	200	181		ug/L		90	78 - 120	2	30
Trichloroethene	0.22	U	200	197		ug/L		99	74 - 120	3	30
Trichlorofluoromethane	0.15	U	200	187		ug/L		93	65 - 142	3	30
Vinyl chloride	150		200	297		ug/L		73	56 - 137	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene	*107*		*64 - 135*
Dibromofluoromethane (Surr)	*102*		*72 - 137*
Toluene-d8 (Surr)	*98*		*70 - 130*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 460-306603/7
Matrix: Water
Analysis Batch: 306603

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			06/24/15 09:50	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			06/24/15 09:50	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			06/24/15 09:50	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			06/24/15 09:50	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			06/24/15 09:50	1
1,2-Dichlorobenzene	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			06/24/15 09:50	1
1,2-Dichloroethene, cis-	0.26	U	1.0	0.26	ug/L			06/24/15 09:50	1
1,2-Dichloroethene, trans-	0.18	U	1.0	0.18	ug/L			06/24/15 09:50	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			06/24/15 09:50	1
1,3-Dichlorobenzene	0.33	U	5.0	0.33	ug/L			06/24/15 09:50	1
1,3-Dichloropropene, cis-	0.16	U	1.0	0.16	ug/L			06/24/15 09:50	1
1,3-Dichloropropene, trans-	0.19	U	1.0	0.19	ug/L			06/24/15 09:50	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			06/24/15 09:50	1
2-Butanone (MEK)	2.2	U	10	2.2	ug/L			06/24/15 09:50	1
2-Hexanone	0.72	U	10	0.72	ug/L			06/24/15 09:50	1
4-Methyl-2-pentanone (MIBK)	0.63	U	10	0.63	ug/L			06/24/15 09:50	1
Acetone	1.1	U	10	1.1	ug/L			06/24/15 09:50	1
Benzene	0.090	U	1.0	0.090	ug/L			06/24/15 09:50	1
Bromochloromethane	0.30	U	1.0	0.30	ug/L			06/24/15 09:50	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			06/24/15 09:50	1
Bromoform	0.18	U	1.0	0.18	ug/L			06/24/15 09:50	1
Bromomethane	0.18	U	1.0	0.18	ug/L			06/24/15 09:50	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			06/24/15 09:50	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			06/24/15 09:50	1
Chloroethane	0.37	U	1.0	0.37	ug/L			06/24/15 09:50	1
Chloroform	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
Chloromethane	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			06/24/15 09:50	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			06/24/15 09:50	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			06/24/15 09:50	1
m-Xylene & p-Xylene	0.28	U	10	0.28	ug/L			06/24/15 09:50	1
o-Xylene	0.32	U	1.0	0.32	ug/L			06/24/15 09:50	1
Styrene	0.17	U	1.0	0.17	ug/L			06/24/15 09:50	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			06/24/15 09:50	1
Toluene	0.25	U	1.0	0.25	ug/L			06/24/15 09:50	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			06/24/15 09:50	1
Trichlorofluoromethane	0.15	U	1.0	0.15	ug/L			06/24/15 09:50	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			06/24/15 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*06/24/15 09:50*	*1*
4-Bromofluorobenzene	*110*		*64 - 135*		*06/24/15 09:50*	*1*
Dibromofluoromethane (Surr)	*102*		*72 - 137*		*06/24/15 09:50*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*06/24/15 09:50*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 460-306603/4
Matrix: Water
Analysis Batch: 306603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	18.7		ug/L		94	73 - 134
1,1,2,2-Tetrachloroethane	20.0	19.4		ug/L		97	55 - 133
1,1,2-Trichloroethane	20.0	19.6		ug/L		98	68 - 121
1,1-Dichloroethane	20.0	20.6		ug/L		103	75 - 126
1,1-Dichloroethene	20.0	19.0		ug/L		95	71 - 123
1,2-Dichlorobenzene	20.0	20.4		ug/L		102	81 - 120
1,2-Dichloroethane	20.0	20.7		ug/L		103	75 - 127
1,2-Dichloroethene, cis-	20.0	21.3		ug/L		107	78 - 121
1,2-Dichloroethene, trans-	20.0	19.4		ug/L		97	79 - 120
1,2-Dichloropropane	20.0	21.1		ug/L		105	70 - 120
1,3-Dichlorobenzene	20.0	19.5		ug/L		98	75 - 120
1,3-Dichloropropene, cis-	20.0	19.9		ug/L		100	71 - 120
1,3-Dichloropropene, trans-	20.0	19.8		ug/L		99	71 - 123
1,4-Dichlorobenzene	20.0	19.5		ug/L		97	75 - 120
2-Butanone (MEK)	100	125		ug/L		125	52 - 140
2-Hexanone	100	110		ug/L		110	49 - 131
4-Methyl-2-pentanone (MIBK)	100	102		ug/L		102	56 - 132
Acetone	100	143		ug/L		143	26 - 150
Benzene	20.0	19.8		ug/L		99	69 - 125
Bromochloromethane	20.0	21.4		ug/L		107	70 - 134
Bromodichloromethane	20.0	19.2		ug/L		96	72 - 123
Bromoform	20.0	18.9		ug/L		95	50 - 134
Bromomethane	20.0	19.7		ug/L		99	27 - 150
Carbon disulfide	20.0	19.0		ug/L		95	61 - 126
Carbon tetrachloride	20.0	18.2		ug/L		91	58 - 150
Chlorobenzene	20.0	20.4		ug/L		102	77 - 120
Chloroethane	20.0	20.9		ug/L		104	58 - 145
Chloroform	20.0	20.3		ug/L		101	81 - 122
Chloromethane	20.0	16.1		ug/L		81	43 - 145
Dibromochloromethane	20.0	19.1		ug/L		95	63 - 131
Ethylbenzene	20.0	19.5		ug/L		98	74 - 120
Isopropylbenzene	20.0	19.8		ug/L		99	74 - 127
Methylene Chloride	20.0	21.2		ug/L		106	76 - 123
m-Xylene & p-Xylene	20.0	19.6		ug/L		98	78 - 119
o-Xylene	20.0	20.1		ug/L		101	79 - 120
Styrene	20.0	19.9		ug/L		99	76 - 120
Tetrachloroethene	20.0	20.5		ug/L		102	70 - 136
Toluene	20.0	19.5		ug/L		97	78 - 120
Trichloroethene	20.0	20.3		ug/L		102	74 - 120
Trichlorofluoromethane	20.0	16.4		ug/L		82	65 - 142
Vinyl chloride	20.0	16.2		ug/L		81	56 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 130*
4-Bromofluorobenzene	*111*		*64 - 135*
Dibromofluoromethane (Surr)	*108*		*72 - 137*
Toluene-d8 (Surr)	*101*		*70 - 130*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 460-96764-A-1 MS
Matrix: Water
Analysis Batch: 306603

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.76	J	20.0	19.3		ug/L		93	73 - 134
1,1,2,2-Tetrachloroethane	0.19	U	20.0	17.9		ug/L		90	55 - 133
1,1,2-Trichloroethane	0.080	U	20.0	18.5		ug/L		92	68 - 121
1,1-Dichloroethane	0.24	U	20.0	20.2		ug/L		101	75 - 126
1,1-Dichloroethene	0.34	U	20.0	20.0		ug/L		100	71 - 123
1,2-Dichlorobenzene	0.22	U	20.0	19.4		ug/L		97	81 - 120
1,2-Dichloroethane	0.25	U	20.0	19.2		ug/L		96	75 - 127
1,2-Dichloroethene, cis-	0.72	J	20.0	21.1		ug/L		102	78 - 121
1,2-Dichloroethene, trans-	0.18	U	20.0	19.1		ug/L		95	79 - 120
1,2-Dichloropropane	0.18	U	20.0	20.0		ug/L		100	70 - 120
1,3-Dichlorobenzene	0.33	U	20.0	18.5		ug/L		92	75 - 120
1,3-Dichloropropene, cis-	0.16	U	20.0	18.6		ug/L		93	71 - 120
1,3-Dichloropropene, trans-	0.19	U	20.0	18.2		ug/L		91	71 - 123
1,4-Dichlorobenzene	0.33	U	20.0	18.3		ug/L		92	75 - 120
2-Butanone (MEK)	2.2	U	100	97.3		ug/L		97	52 - 140
2-Hexanone	0.72	U	100	92.8		ug/L		93	49 - 131
4-Methyl-2-pentanone (MIBK)	0.63	U	100	98.7		ug/L		99	56 - 132
Acetone	1.1	U	100	88.7		ug/L		89	26 - 150
Benzene	0.090	U	20.0	18.8		ug/L		94	69 - 125
Bromochloromethane	0.30	U	20.0	20.8		ug/L		104	70 - 134
Bromodichloromethane	0.15	U	20.0	18.9		ug/L		94	72 - 123
Bromoform	0.18	U	20.0	17.6		ug/L		88	50 - 134
Bromomethane	0.18	U	20.0	18.2		ug/L		91	27 - 150
Carbon disulfide	0.22	U	20.0	19.4		ug/L		97	61 - 126
Carbon tetrachloride	0.33	U	20.0	18.8		ug/L		94	58 - 150
Chlorobenzene	0.24	U	20.0	19.8		ug/L		99	77 - 120
Chloroethane	0.37	U	20.0	19.1		ug/L		95	58 - 145
Chloroform	0.22	U	20.0	19.7		ug/L		98	81 - 122
Chloromethane	0.22	U	20.0	14.6		ug/L		73	43 - 145
Dibromochloromethane	0.22	U	20.0	18.4		ug/L		92	63 - 131
Ethylbenzene	0.30	U	20.0	19.5		ug/L		97	74 - 120
Isopropylbenzene	0.32	U	20.0	19.6		ug/L		98	74 - 127
Methylene Chloride	0.21	U	20.0	19.7		ug/L		98	76 - 123
m-Xylene & p-Xylene	0.28	U	20.0	19.5		ug/L		98	78 - 119
o-Xylene	0.32	U	20.0	19.2		ug/L		96	79 - 120
Styrene	0.17	U	20.0	19.2		ug/L		96	76 - 120
Tetrachloroethene	42		20.0	57.9		ug/L		77	70 - 136
Toluene	0.25	U	20.0	18.8		ug/L		94	78 - 120
Trichloroethene	52	F1	20.0	66.6	F1	ug/L		71	74 - 120
Trichlorofluoromethane	0.15	U	20.0	17.3		ug/L		87	65 - 142
Vinyl chloride	0.060	U	20.0	16.4		ug/L		82	56 - 137

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene	*107*		*64 - 135*
Dibromofluoromethane (Surr)	*102*		*72 - 137*
Toluene-d8 (Surr)	*96*		*70 - 130*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 460-96764-A-1 MSD
Matrix: Water
Analysis Batch: 306603

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.76	J	20.0	20.8		ug/L		100	73 - 134	7	30
1,1,2,2-Tetrachloroethane	0.19	U	20.0	19.7		ug/L		99	55 - 133	9	30
1,1,2-Trichloroethane	0.080	U	20.0	20.2		ug/L		101	68 - 121	9	30
1,1-Dichloroethane	0.24	U	20.0	21.4		ug/L		107	75 - 126	6	30
1,1-Dichloroethene	0.34	U	20.0	21.3		ug/L		106	71 - 123	6	30
1,2-Dichlorobenzene	0.22	U	20.0	20.9		ug/L		104	81 - 120	7	30
1,2-Dichloroethane	0.25	U	20.0	20.5		ug/L		102	75 - 127	6	30
1,2-Dichloroethene, cis-	0.72	J	20.0	22.6		ug/L		110	78 - 121	7	30
1,2-Dichloroethene, trans-	0.18	U	20.0	20.5		ug/L		102	79 - 120	7	30
1,2-Dichloropropane	0.18	U	20.0	21.6		ug/L		108	70 - 120	8	30
1,3-Dichlorobenzene	0.33	U	20.0	20.1		ug/L		100	75 - 120	8	30
1,3-Dichloropropene, cis-	0.16	U	20.0	19.9		ug/L		100	71 - 120	7	30
1,3-Dichloropropene, trans-	0.19	U	20.0	19.8		ug/L		99	71 - 123	9	30
1,4-Dichlorobenzene	0.33	U	20.0	20.1		ug/L		100	75 - 120	9	30
2-Butanone (MEK)	2.2	U	100	105		ug/L		105	52 - 140	8	30
2-Hexanone	0.72	U	100	103		ug/L		103	49 - 131	10	30
4-Methyl-2-pentanone (MIBK)	0.63	U	100	107		ug/L		107	56 - 132	9	30
Acetone	1.1	U	100	92.9		ug/L		93	26 - 150	5	30
Benzene	0.090	U	20.0	20.3		ug/L		101	69 - 125	7	30
Bromochloromethane	0.30	U	20.0	22.0		ug/L		110	70 - 134	6	30
Bromodichloromethane	0.15	U	20.0	20.5		ug/L		102	72 - 123	8	30
Bromoform	0.18	U	20.0	19.1		ug/L		95	50 - 134	8	30
Bromomethane	0.18	U	20.0	21.4		ug/L		107	27 - 150	16	30
Carbon disulfide	0.22	U	20.0	20.1		ug/L		101	61 - 126	4	30
Carbon tetrachloride	0.33	U	20.0	20.3		ug/L		102	58 - 150	8	30
Chlorobenzene	0.24	U	20.0	21.3		ug/L		107	77 - 120	7	30
Chloroethane	0.37	U	20.0	18.9		ug/L		95	58 - 145	1	30
Chloroform	0.22	U	20.0	21.1		ug/L		105	81 - 122	7	30
Chloromethane	0.22	U	20.0	15.6		ug/L		78	43 - 145	6	30
Dibromochloromethane	0.22	U	20.0	19.7		ug/L		98	63 - 131	7	30
Ethylbenzene	0.30	U	20.0	21.1		ug/L		106	74 - 120	8	30
Isopropylbenzene	0.32	U	20.0	21.0		ug/L		105	74 - 127	7	30
Methylene Chloride	0.21	U	20.0	20.9		ug/L		105	76 - 123	6	30
m-Xylene & p-Xylene	0.28	U	20.0	20.6		ug/L		103	78 - 119	5	30
o-Xylene	0.32	U	20.0	20.7		ug/L		103	79 - 120	8	30
Styrene	0.17	U	20.0	20.5		ug/L		103	76 - 120	7	30
Tetrachloroethene	42		20.0	59.9		ug/L		87	70 - 136	3	30
Toluene	0.25	U	20.0	20.2		ug/L		101	78 - 120	8	30
Trichloroethene	52	F1	20.0	68.5		ug/L		81	74 - 120	3	30
Trichlorofluoromethane	0.15	U	20.0	17.6		ug/L		88	65 - 142	2	30
Vinyl chloride	0.060	U	20.0	16.7		ug/L		83	56 - 137	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene	*107*		*64 - 135*
Dibromofluoromethane (Surr)	*103*		*72 - 137*
Toluene-d8 (Surr)	*96*		*70 - 130*

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

GC/MS VOA

Analysis Batch: 306505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-96403-1 - DL	Pre-Carb	Total/NA	Water	8260C	
460-96403-1	Pre-Carb	Total/NA	Water	8260C	
460-96403-2	Primary-EFF	Total/NA	Water	8260C	
460-96403-7	Post-Carb composite	Total/NA	Water	8260C	
460-96403-7 MS	Post-Carb composite	Total/NA	Water	8260C	
460-96403-7 MSD	Post-Carb composite	Total/NA	Water	8260C	
LCS 460-306505/3	Lab Control Sample	Total/NA	Water	8260C	
MB 460-306505/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 306603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-96403-2 - DL	Primary-EFF	Total/NA	Water	8260C	
460-96403-7 - DL	Post-Carb composite	Total/NA	Water	8260C	
460-96764-A-1 MS	Matrix Spike	Total/NA	Water	8260C	
460-96764-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	
LCS 460-306603/4	Lab Control Sample	Total/NA	Water	8260C	
MB 460-306603/7	Method Blank	Total/NA	Water	8260C	

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Client Sample ID: Pre-Carb
Lab Sample ID: 460-96403-1
Date Collected: 06/11/15 12:15
Matrix: Water
Date Received: 06/12/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C	DL	50	306505	06/23/15 21:09	AAT	TAL EDI
Total/NA	Analysis	8260C		5	306505	06/23/15 21:59	AAT	TAL EDI

Client Sample ID: Primary-EFF
Lab Sample ID: 460-96403-2
Date Collected: 06/11/15 12:20
Matrix: Water
Date Received: 06/12/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	306505	06/23/15 22:24	AAT	TAL EDI
Total/NA	Analysis	8260C	DL	50	306603	06/24/15 11:05	SZD	TAL EDI

Client Sample ID: Post-Carb composite
Lab Sample ID: 460-96403-7
Date Collected: 06/11/15 13:55
Matrix: Water
Date Received: 06/12/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	306505	06/23/15 20:44	AAT	TAL EDI
Total/NA	Analysis	8260C	DL	10	306603	06/24/15 10:40	SZD	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Laboratory: TestAmerica Edison

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	11452	03-31-16

Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI

Protocol References:

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

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Essex/Hope Jamestown 656686

TestAmerica Job ID: 460-96403-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-96403-1	Pre-Carb	Water	06/11/15 12:15	06/12/15 10:00
460-96403-2	Primary-EFF	Water	06/11/15 12:20	06/12/15 10:00
460-96403-7	Post-Carb composite	Water	06/11/15 13:55	06/12/15 10:00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANA

460-96403 Chain of Custody

urham Road
N Jersey 08817
2) 549-3900 Fax: (732) 549-3679

Page 1 of 1

Name (for report and invoice)	Samplers Name (Printed)	Site/Project Identification
Kyle Black	Travis Pendry	Essex/Hope Jamestown 6566686
Company: CH2M	P. O. #	State (Location of site): NJ: ☐ NY: ☑ Other:
		Regulatory Program:
Address: 18 Tremont Street, Suite 700	Analysis Turnaround Time: Standard ☑	
City: Boston State: MA 02108	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	
Phone: 617-626-7013 Fax: 810-229-5071		

Sample Identification	Date	Time	Matrix	No. of Cont.	VOCs 8260	LAB USE ONLY Project No: / Job No: 96403 / Sample Numbers
Pre-carb	6-11-15	1215	W	3	X	1
Primary-EFF		1220				2
Post-carb		1225				3
Post-carb		1255				4
Post-carb		1325				5
Post-carb		1355				6
						7 comp.

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH — Soil: — Water: 1, 2

6 = Other _____, 7 = Other _____

Special Instructions composite four (4) post-carb samples in lab and report as post-carb composite. Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1) Travis Pendry	CH2M	6-11-15 / 1445	1)	
2) Fed Ex		6/12/15 1000	2) Dean Lyzy	Edison
3)			3)	
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132). TAL - 0016 (0814)

Massachusetts (M-NJ312), North Carolina (No. 578)

3.8/5.8 °C Iffs COC# 769468

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 96403

Number of Coolers: 1 IR Gun #: 5

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	3.8 °C	5.8 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: _____ Date: 6/12/15

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 460-96403-1

Login Number: 96403
List Number: 1
Creator: Hall, Alonzo

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.8° C IR #5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	lab to composite
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

April 10, 2015

Mr. Mark Dowiak
URS Corporation
Foster Plaza 6
681 Andersen Drive, Suite 400
Pittsburgh, PA 15220

RE: Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Dear Mr. Dowiak:
Enclosed are the analytical results for sample(s) received by the laboratory on April 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Timothy Reed
timothy.reed@pacelabs.com
Project Manager

Enclosures

cc: Ms. Valerie Sibeto, URS Corporation

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: RW-1S **Lab ID: 30144449001** Collected: 03/31/15 14:00 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		04/06/15 16:17	67-64-1	
Benzene	ND	ug/L	1.0	1		04/06/15 16:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 16:17	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 16:17	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 16:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		04/06/15 16:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 16:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 16:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 16:17	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 16:17	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 16:17	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 16:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 16:17	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:17	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:17	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:17	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 16:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 16:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		04/06/15 16:17	75-35-4	
cis-1,2-Dichloroethene	**59.5**	ug/L	1.0	1		04/06/15 16:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 16:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 16:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 16:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 16:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		04/06/15 16:17	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 16:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		04/06/15 16:17	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 16:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 16:17	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 16:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 16:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 16:17	127-18-4	
Toluene	ND	ug/L	1.0	1		04/06/15 16:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 16:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 16:17	79-00-5	
Trichloroethene	**37.7**	ug/L	1.0	1		04/06/15 16:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 16:17	75-69-4	
Vinyl chloride	**3.5**	ug/L	1.0	1		04/06/15 16:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		04/06/15 16:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		04/06/15 16:17	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	107	%	84-113	1		04/06/15 16:17	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	84-124	1		04/06/15 16:17	17060-07-0	
Toluene-d8 (S)	102	%	79-118	1		04/06/15 16:17	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: RW-2S **Lab ID: 30144449002** Collected: 03/31/15 14:10 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		04/06/15 16:44	67-64-1	
Benzene	ND	ug/L	1.0	1		04/06/15 16:44	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 16:44	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 16:44	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 16:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		04/06/15 16:44	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 16:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 16:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 16:44	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 16:44	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 16:44	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 16:44	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 16:44	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 16:44	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 16:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 16:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		04/06/15 16:44	75-35-4	
cis-1,2-Dichloroethene	**9.3**	ug/L	1.0	1		04/06/15 16:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 16:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 16:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 16:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 16:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		04/06/15 16:44	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 16:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		04/06/15 16:44	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 16:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 16:44	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 16:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 16:44	127-18-4	
Toluene	ND	ug/L	1.0	1		04/06/15 16:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 16:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 16:44	79-00-5	
Trichloroethene	**8.0**	ug/L	1.0	1		04/06/15 16:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 16:44	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		04/06/15 16:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		04/06/15 16:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		04/06/15 16:44	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	84-113	1		04/06/15 16:44	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	84-124	1		04/06/15 16:44	17060-07-0	
Toluene-d8 (S)	104	%	79-118	1		04/06/15 16:44	2037-26-5	

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: RW-2D **Lab ID: 30144449003** Collected: 03/31/15 14:25 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		04/06/15 18:56	67-64-1	
Benzene	**10.4**	ug/L	1.0	1		04/06/15 18:56	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 18:56	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 18:56	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 18:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		04/06/15 18:56	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 18:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 18:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 18:56	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 18:56	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 18:56	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 18:56	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 18:56	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 18:56	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 18:56	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 18:56	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 18:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 18:56	107-06-2	
1,1-Dichloroethene	**14.3**	ug/L	1.0	1		04/06/15 18:56	75-35-4	
cis-1,2-Dichloroethene	**2260**	ug/L	50.0	50		04/06/15 19:22	156-59-2	
trans-1,2-Dichloroethene	**54.6**	ug/L	1.0	1		04/06/15 18:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 18:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 18:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 18:56	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		04/06/15 18:56	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 18:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		04/06/15 18:56	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 18:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 18:56	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 18:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 18:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 18:56	127-18-4	
Toluene	ND	ug/L	1.0	1		04/06/15 18:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 18:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 18:56	79-00-5	
Trichloroethene	**2490**	ug/L	50.0	50		04/06/15 19:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 18:56	75-69-4	
Vinyl chloride	**373**	ug/L	1.0	1		04/06/15 18:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		04/06/15 18:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		04/06/15 18:56	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	110	%	84-113	1		04/06/15 18:56	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	84-124	1		04/06/15 18:56	17060-07-0	
Toluene-d8 (S)	106	%	79-118	1		04/06/15 18:56	2037-26-5	

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: RW-3S **Lab ID: 30144449004** Collected: 03/31/15 14:30 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		04/06/15 17:10	67-64-1	
Benzene	**6.5**	ug/L	1.0	1		04/06/15 17:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 17:10	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 17:10	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 17:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		04/06/15 17:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 17:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 17:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 17:10	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 17:10	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 17:10	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 17:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 17:10	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 17:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 17:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 17:10	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 17:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 17:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		04/06/15 17:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 17:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 17:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 17:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 17:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 17:10	10061-02-6	
Ethylbenzene	**9.5**	ug/L	1.0	1		04/06/15 17:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 17:10	591-78-6	
Isopropylbenzene (Cumene)	**11.8**	ug/L	1.0	1		04/06/15 17:10	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 17:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 17:10	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 17:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 17:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 17:10	127-18-4	
Toluene	ND	ug/L	1.0	1		04/06/15 17:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 17:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 17:10	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		04/06/15 17:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 17:10	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		04/06/15 17:10	75-01-4	
m&p-Xylene	**71.1**	ug/L	2.0	1		04/06/15 17:10	179601-23-1	
o-Xylene	**6.6**	ug/L	1.0	1		04/06/15 17:10	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	84-113	1		04/06/15 17:10	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	84-124	1		04/06/15 17:10	17060-07-0	
Toluene-d8 (S)	103	%	79-118	1		04/06/15 17:10	2037-26-5	

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: RW-6D **Lab ID: 30144449005** Collected: 03/31/15 14:40 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	**99000**	ug/L	10000	1000		04/06/15 20:42	67-64-1	
Benzene	**106**	ug/L	1.0	1		04/06/15 19:49	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 19:49	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 19:49	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 19:49	74-83-9	
2-Butanone (MEK)	**440J**	ug/L	1000	100		04/06/15 20:15	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 19:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 19:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 19:49	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 19:49	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 19:49	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 19:49	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 19:49	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 19:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 19:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 19:49	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 19:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 19:49	107-06-2	
1,1-Dichloroethene	**71.1**	ug/L	1.0	1		04/06/15 19:49	75-35-4	
cis-1,2-Dichloroethene	**20800**	ug/L	100	100		04/06/15 20:15	156-59-2	
trans-1,2-Dichloroethene	**315**	ug/L	1.0	1		04/06/15 19:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 19:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 19:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 19:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		04/06/15 19:49	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 19:49	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		04/06/15 19:49	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 19:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 19:49	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 19:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 19:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 19:49	127-18-4	
Toluene	**1.7**	ug/L	1.0	1		04/06/15 19:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 19:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 19:49	79-00-5	
Trichloroethene	**16000**	ug/L	100	100		04/06/15 20:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 19:49	75-69-4	
Vinyl chloride	**5120**	ug/L	100	100		04/06/15 20:15	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		04/06/15 19:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		04/06/15 19:49	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	84-113	1		04/06/15 19:49	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	84-124	1		04/06/15 19:49	17060-07-0	
Toluene-d8 (S)	102	%	79-118	1		04/06/15 19:49	2037-26-5	

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ANALYTICAL RESULTS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Sample: TB-01 **Lab ID: 30144449006** Collected: 03/31/15 00:01 Received: 04/01/15 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C							
Acetone	ND	ug/L	10.0	1		04/06/15 12:46	67-64-1	
Benzene	ND	ug/L	1.0	1		04/06/15 12:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	1		04/06/15 12:46	75-27-4	
Bromoform	ND	ug/L	1.0	1		04/06/15 12:46	75-25-2	
Bromomethane	ND	ug/L	1.0	1		04/06/15 12:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1		04/06/15 12:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		04/06/15 12:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		04/06/15 12:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		04/06/15 12:46	108-90-7	
Chloroethane	ND	ug/L	1.0	1		04/06/15 12:46	75-00-3	
Chloroform	ND	ug/L	1.0	1		04/06/15 12:46	67-66-3	
Chloromethane	ND	ug/L	1.0	1		04/06/15 12:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		04/06/15 12:46	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 12:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 12:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		04/06/15 12:46	106-46-7	
1,1-Dichloroethane	ND	ug/L	1.0	1		04/06/15 12:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		04/06/15 12:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		04/06/15 12:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 12:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		04/06/15 12:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		04/06/15 12:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 12:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		04/06/15 12:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		04/06/15 12:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1		04/06/15 12:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		04/06/15 12:46	98-82-8	
Methylene Chloride	ND	ug/L	1.0	1		04/06/15 12:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1		04/06/15 12:46	108-10-1	
Styrene	ND	ug/L	1.0	1		04/06/15 12:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		04/06/15 12:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		04/06/15 12:46	127-18-4	
Toluene	ND	ug/L	1.0	1		04/06/15 12:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		04/06/15 12:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		04/06/15 12:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		04/06/15 12:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		04/06/15 12:46	75-69-4	
Vinyl chloride	ND	ug/L	1.0	1		04/06/15 12:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		04/06/15 12:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		04/06/15 12:46	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	84-113	1		04/06/15 12:46	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	84-124	1		04/06/15 12:46	17060-07-0	
Toluene-d8 (S)	100	%	79-118	1		04/06/15 12:46	2037-26-5	

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QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

QC Batch: MSV/23008 Analysis Method: EPA 8260C
QC Batch Method: EPA 8260C Analysis Description: 8260C MSV
Associated Lab Samples: 30144449001, 30144449002, 30144449003, 30144449004, 30144449005, 30144449006

METHOD BLANK: 875617 Matrix: Water
Associated Lab Samples: 30144449001, 30144449002, 30144449003, 30144449004, 30144449005, 30144449006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	04/06/15 11:27	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	04/06/15 11:27	
1,1,2-Trichloroethane	ug/L	ND	1.0	04/06/15 11:27	
1,1-Dichloroethane	ug/L	ND	1.0	04/06/15 11:27	
1,1-Dichloroethene	ug/L	ND	1.0	04/06/15 11:27	
1,2-Dichlorobenzene	ug/L	ND	1.0	04/06/15 11:27	
1,2-Dichloroethane	ug/L	ND	1.0	04/06/15 11:27	
1,2-Dichloropropane	ug/L	ND	1.0	04/06/15 11:27	
1,3-Dichlorobenzene	ug/L	ND	1.0	04/06/15 11:27	
1,4-Dichlorobenzene	ug/L	ND	1.0	04/06/15 11:27	
2-Butanone (MEK)	ug/L	ND	10.0	04/06/15 11:27	
2-Hexanone	ug/L	ND	10.0	04/06/15 11:27	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	04/06/15 11:27	
Acetone	ug/L	ND	10.0	04/06/15 11:27	
Benzene	ug/L	ND	1.0	04/06/15 11:27	
Bromodichloromethane	ug/L	ND	1.0	04/06/15 11:27	
Bromoform	ug/L	ND	1.0	04/06/15 11:27	
Bromomethane	ug/L	ND	1.0	04/06/15 11:27	
Carbon disulfide	ug/L	ND	1.0	04/06/15 11:27	
Carbon tetrachloride	ug/L	ND	1.0	04/06/15 11:27	
Chlorobenzene	ug/L	ND	1.0	04/06/15 11:27	
Chloroethane	ug/L	ND	1.0	04/06/15 11:27	
Chloroform	ug/L	ND	1.0	04/06/15 11:27	
Chloromethane	ug/L	ND	1.0	04/06/15 11:27	
cis-1,2-Dichloroethene	ug/L	ND	1.0	04/06/15 11:27	
cis-1,3-Dichloropropene	ug/L	ND	1.0	04/06/15 11:27	
Dibromochloromethane	ug/L	ND	1.0	04/06/15 11:27	
Ethylbenzene	ug/L	ND	1.0	04/06/15 11:27	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	04/06/15 11:27	
m&p-Xylene	ug/L	ND	2.0	04/06/15 11:27	
Methylene Chloride	ug/L	ND	1.0	04/06/15 11:27	
o-Xylene	ug/L	ND	1.0	04/06/15 11:27	
Styrene	ug/L	ND	1.0	04/06/15 11:27	
Tetrachloroethene	ug/L	ND	1.0	04/06/15 11:27	
Toluene	ug/L	ND	1.0	04/06/15 11:27	
trans-1,2-Dichloroethene	ug/L	ND	1.0	04/06/15 11:27	
trans-1,3-Dichloropropene	ug/L	ND	1.0	04/06/15 11:27	
Trichloroethene	ug/L	ND	1.0	04/06/15 11:27	
Trichlorofluoromethane	ug/L	ND	1.0	04/06/15 11:27	
Vinyl chloride	ug/L	ND	1.0	04/06/15 11:27	
1,2-Dichloroethane-d4 (S)	%	94	84-124	04/06/15 11:27	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

METHOD BLANK: 875617 Matrix: Water
Associated Lab Samples: 30144449001, 30144449002, 30144449003, 30144449004, 30144449005, 30144449006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4-Bromofluorobenzene (S)	%	101	84-113	04/06/15 11:27	
Toluene-d8 (S)	%	104	79-118	04/06/15 11:27	

LABORATORY CONTROL SAMPLE: 875618

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	17.1	86	62-130	
1,1,2,2-Tetrachloroethane	ug/L	20	17.0	85	74-115	
1,1,2-Trichloroethane	ug/L	20	19.3	97	73-121	
1,1-Dichloroethane	ug/L	20	18.2	91	64-125	
1,1-Dichloroethene	ug/L	20	17.8	89	58-126	
1,2-Dichlorobenzene	ug/L	20	20.2	101	76-117	
1,2-Dichloroethane	ug/L	20	17.7	88	66-124	
1,2-Dichloropropane	ug/L	20	19.2	96	66-119	
1,3-Dichlorobenzene	ug/L	20	19.2	96	73-116	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-119	
2-Butanone (MEK)	ug/L	20	15.1	75	69-126	
2-Hexanone	ug/L	20	15.1	76	53-118	
4-Methyl-2-pentanone (MIBK)	ug/L	20	15.0	75	68-124	
Acetone	ug/L	20	11.6	58	56-142	
Benzene	ug/L	20	19.7	98	69-123	
Bromodichloromethane	ug/L	20	19.1	95	64-120	
Bromoform	ug/L	20	16.8	84	56-133	
Bromomethane	ug/L	20	19.2	96	19-151	
Carbon disulfide	ug/L	20	22.3	111	53-173	
Carbon tetrachloride	ug/L	20	18.0	90	52-133	
Chlorobenzene	ug/L	20	19.0	95	72-121	
Chloroethane	ug/L	20	19.8	99	53-143	
Chloroform	ug/L	20	17.8	89	63-123	
Chloromethane	ug/L	20	21.7	108	48-139	
cis-1,2-Dichloroethene	ug/L	20	17.5	88	63-123	
cis-1,3-Dichloropropene	ug/L	20	18.2	91	65-121	
Dibromochloromethane	ug/L	20	18.5	93	58-132	
Ethylbenzene	ug/L	20	18.7	94	70-123	
Isopropylbenzene (Cumene)	ug/L	20	19.6	98	66-136	
m&p-Xylene	ug/L	40	37.9	95	71-124	
Methylene Chloride	ug/L	20	16.6	83	55-134	
o-Xylene	ug/L	20	19.0	95	69-118	
Styrene	ug/L	20	18.4	92	66-126	
Tetrachloroethene	ug/L	20	19.8	99	62-131	
Toluene	ug/L	20	19.0	95	73-123	
trans-1,2-Dichloroethene	ug/L	20	18.9	94	61-124	
trans-1,3-Dichloropropene	ug/L	20	18.0	90	70-111	
Trichloroethene	ug/L	20	19.9	99	66-125	

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

LABORATORY CONTROL SAMPLE: 875618

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichlorofluoromethane	ug/L	20	19.5	98	57-144	
Vinyl chloride	ug/L	20	19.3	96	58-131	
1,2-Dichloroethane-d4 (S)	%			97	84-124	
4-Bromofluorobenzene (S)	%			102	84-113	
Toluene-d8 (S)	%			99	79-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 875914 875915

Parameter	Units	30144219001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	17.0	17.2	85	86	62-130	1	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	14.8	15.0	74	75	74-115	1	
1,1,2-Trichloroethane	ug/L	ND	20	20	17.5	18.6	88	93	73-121	6	
1,1-Dichloroethane	ug/L	ND	20	20	17.7	18.1	89	90	64-125	2	
1,1-Dichloroethene	ug/L	ND	20	20	18.2	18.5	91	93	58-126	2	
1,2-Dichlorobenzene	ug/L	ND	20	20	17.4	17.6	87	88	76-117	1	
1,2-Dichloroethane	ug/L	ND	20	20	16.2	16.9	81	85	66-124	4	
1,2-Dichloropropane	ug/L	ND	20	20	18.0	19.2	90	96	66-119	6	
1,3-Dichlorobenzene	ug/L	ND	20	20	17.3	17.0	86	85	73-116	2	
1,4-Dichlorobenzene	ug/L	ND	20	20	17.7	17.5	89	88	75-119	1	
2-Butanone (MEK)	ug/L	ND	20	20	13.4	14.0	67	70	69-126	5	M1
2-Hexanone	ug/L	ND	20	20	13.9	14.7	69	74	53-118	6	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	20	15.6	15.9	78	80	68-124	2	
Acetone	ug/L	ND	20	20	36.4	31.0	172	145	56-142	16	M1
Benzene	ug/L	ND	20	20	19.2	19.6	96	98	69-123	2	
Bromodichloromethane	ug/L	ND	20	20	17.2	18.3	86	92	64-120	6	
Bromoform	ug/L	ND	20	20	14.4	15.8	72	79	56-133	9	
Bromomethane	ug/L	ND	20	20	13.6	16.0	68	80	19-151	16	
Carbon disulfide	ug/L	ND	20	20	20.3	17.6	101	88	53-173	14	
Carbon tetrachloride	ug/L	ND	20	20	17.3	18.4	87	92	52-133	6	
Chlorobenzene	ug/L	ND	20	20	18.5	19.1	92	95	72-121	3	
Chloroethane	ug/L	ND	20	20	20.1	19.5	100	98	53-143	3	
Chloroform	ug/L	ND	20	20	18.1	18.3	91	92	63-123	1	
Chloromethane	ug/L	ND	20	20	21.5	23.5	107	117	48-139	9	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.5	18.6	93	93	63-123	0	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.9	16.8	84	84	65-121	0	
Dibromochloromethane	ug/L	ND	20	20	16.4	17.8	82	89	58-132	8	
Ethylbenzene	ug/L	ND	20	20	17.9	18.8	89	94	70-123	5	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	18.0	18.5	90	93	66-136	3	
m&p-Xylene	ug/L	ND	40	40	37.1	38.3	93	96	71-124	3	
Methylene Chloride	ug/L	ND	20	20	16.1	16.6	80	83	55-134	3	
o-Xylene	ug/L	ND	20	20	18.2	18.8	91	94	69-118	3	
Styrene	ug/L	ND	20	20	17.4	18.2	87	91	66-126	4	
Tetrachloroethene	ug/L	ND	20	20	19.8	20.3	99	101	62-131	2	
Toluene	ug/L	ND	20	20	18.8	19.1	94	96	73-123	1	

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REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 875914 875915

Parameter	Units	30144219001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
trans-1,2-Dichloroethene	ug/L	ND	20	20	17.9	18.6	90	93	61-124	4	
trans-1,3-Dichloropropene	ug/L	ND	20	20	15.6	16.6	78	83	70-111	6	
Trichloroethene	ug/L	ND	20	20	20.1	20.9	101	105	66-125	4	
Trichlorofluoromethane	ug/L	ND	20	20	22.3	21.7	111	109	57-144	3	
Vinyl chloride	ug/L	ND	20	20	20.6	22.2	103	111	58-131	8	
1,2-Dichloroethane-d4 (S)	%						94	96	84-124		
4-Bromofluorobenzene (S)	%						101	97	84-113		
Toluene-d8 (S)	%						99	99	79-118		

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ESSEX/HOPE JAMESTOWN
Pace Project No.: 30144449

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30144449001	**RW-1S**	EPA 8260C	MSV/23008		
30144449002	**RW-2S**	EPA 8260C	MSV/23008		
30144449003	**RW-2D**	EPA 8260C	MSV/23008		
30144449004	**RW-3S**	EPA 8260C	MSV/23008		
30144449005	**RW-6D**	EPA 8260C	MSV/23008		
30144449006	**TB-01**	EPA 8260C	MSV/23008		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

1568163

Section A Required Client Information:

Company: URS/AECOM
Address: FOSTER PLAZA 6, 681 ANDERSEN DR, STE. 400, PITTSBURGH, PA 15220
Email To:
Phone: 412-503-4700 Fax: 412-503-4701
Requested Due Date/TAT: STANDARD

Section B Required Project Information:

Report To: MARK DOWIAK
Copy To: VALERIE SIBETO
Purchase Order No.: 415701666
Project Name: ESSEX/HOPE JAMESTOWN
Project Number: 415701666

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

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

Site Location STATE: NY

Section D Required Client Information

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	RW-1S	WT	G			3.31.15	1400		3				X						X		001
2	RW-2S						1410		3				X						X		002
3	RW-2D						1425		3				X						X		003
4	RW-3S						1430		3				X						X		004
5	RW-6D						1440		3				X						X		005
6	TB-01	WT	G			3.31.15	—		2				X						X		006
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
SEMI-ANNUAL RW	Valerie / URS	3.31.15	1530	[signature] 3	3.31.15	1530				
SAMPLING - 1ST QTR				[signature] Pace	4-1-15	0945	8.5	Y	N	Y
2015										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: VALERIE SIBETO

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 3.31.15

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

ORIGINAL

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

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

Sample Condition Upon Receipt

Pace Analytical

Client Name: URS

Project # 30144449

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 8023393267166

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ Other _____

Thermometer Used 6 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 0.8 °C **Correction Factor:** -0.3 °C **Final Temp:** 0.5 °C

Date and initials of person examining contents: AML 4-1-15

Temp should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 4/2/15

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

Face Analytical

page 2

Project Number: 30144449

Client Name: URS

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml / 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other	Other
001	WT													3											
002	WT													3											
003	WT													2											

SCURF Back (C016-4 15May2012).xls